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RAMONDIA PYRENAICA.
 (In the Botanic Garden, Trinity College, Dublin.)

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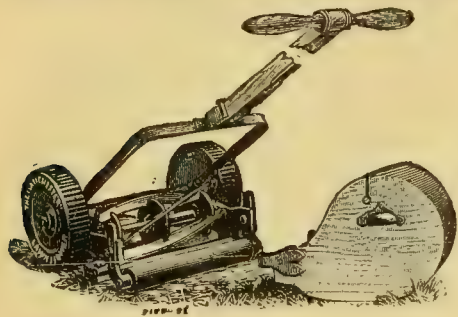
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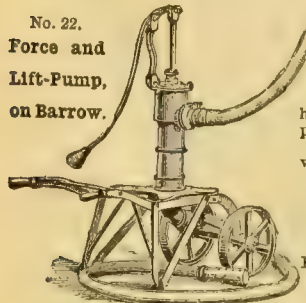


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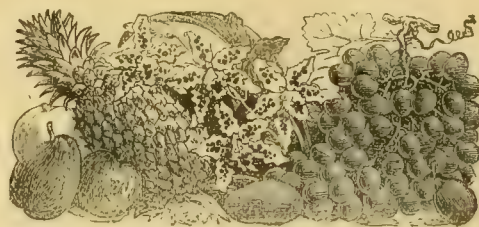
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THE
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SATURDAY, JULY 2, 1892.

USE OF SPHAGNUM IN THE CULTIVATION OF ALPINES.

I HAVE already mentioned in the *Gardeners' Chronicle* my experiments with sphagnum for growing alpine, and promised to tell your readers the results of them. First of all, then, I will state that in many cases this plan of cultivation is the *ne plus ultra*. For alpine, the situation of our garden is unfavourable, and is on a terrace raised about 12 feet, the soil of which is light earth brought here and exhausted by long cultivation. At 1½ foot below the surface is gravel, and consequently drought is usual. What we here lack is what English growers sometimes have in too great abundance—humidity of the air, which is one of the reasons of the success and development of the alpine flora on our plains. Hence it is that all the growing plants introduced from England die, while the same species succeed well with us if we raise them from seed. The reverse of this also applies—that is to say, that our plants, however stunted and small, succeed admirably in the fostering climate of green England; therefore my trials were made in a dry climate, and under a burning sun. I have already said that *Arnica montana*, which never before flowered in Geneva, *Parnassia mysorensis*, *Saxifraga aizoides* and *stellaris*, and other plants, have flowered abundantly when grown in pure sphagnum. I have also told how *Edelweiss*, a silicifugal and limestone plant, bloomed well in sandy sphagnum, though it is true that we watered it with chalky water. The results obtained this spring are still more conclusive and surprising. A plant of *Soldanella montana* which I set in sphagnum in April, 1891, on a wall exposed to the full sun, did capitally, and has borne more than fifty flowers. The plant was shown at the Lyons Exposition last April, and much admired. I repeat of this plant what I have said of *Arnica*—that a *Soldanella* has never flowered in the alpine garden, and that it but rarely succeeds at Geneva. Many plant-lovers use artificial means to keep up around the flower-stem and buds the moisture necessary to ensure success. In my book on the subject I have recommended various means of managing this. Now my *Soldanella* not only bore more than fifty flowers, but they were successive on the little plant for more than six weeks: therefore, the culture of this plant is made not merely possible, but easy, in our hot, dry climate. Yet, in England, I would not council its growth in pure sphagnum, but in a mixture of sphagnum and peat, for with this I have succeeded with most tender plants. I have now last year's plant of *Edelweiss* growing in pure sphagnum, and it is doing well, and bearing twelve fine flowers—not a great number for *Edelweiss*, but they are well-formed, pure white, and unusually large. Furthermore, they

are of similar habit to the mountain Edelweiss—dwarf, shrubby, and in full vigour. *Saxifraga aizoides* forms a dense tuft nearly a foot across, and covered with quite normal blossoms.

Thus it is with most of the old plants put into sphagnum last spring. All who see them admire them much. Seeing these results, I continued my experiments, and planted in sphagnum, either pure, or mixed with peat, all the delicate species of the higher and lower elevations, and the results hitherto obtained are all similar. I have more than eighty plants of *Pinguicula alpina*, *grandiflora*, *Reuteri*, *leptoceras* and *vulgaris*, in flower. *P. Reuteri*, is still covered with large pink flowers. *Aristophylos alpina*, which I have never seen cultivated, nor succeeded with, in Geneva, does excellently in sphagnum. So do *Saxifraga aquatica*, *S. rivularis*, *bronchialis*, *Hirculus*; *Dianthus callizonus*, *neglectus*, and *alpinus*; *Parnassia palustris*, *Gentiana purpurea* (with which I have succeeded for the first time), *alpina*, *Clusii*, *angustifolia*, *Kochiana*, *brachyphylla*; *Heuchera sanguinea*, *Silene acaulis*, *Arctostaphylos Uva-ursi*, *Azalea procumbens*, *Rhododendron Chamæcistus*, *Ephedra helvetica*, *Campanula cenisia*, *Achillea atrata*, *moschata*, *nana*; *Gentiana bavarica*, on which I have had more than twenty blooms in one pot, which were of the same intense blue as on the mountains; *Aquilegia alpina*, and *Papaver pyrenaicum*. All these plants grow wonderfully, are in full sun, in sphagnum, alone, or mixed with peat, all are watered freely every evening, water being a *sine qua non* to their existence under these conditions. The influence of sphagnum on seedlings is also great. I have several times made experiments with it, and the results have surprised me. In 1884 I had already made a few trials and recommended the plan, but had not insisted particularly upon it, because I had not then tried it with as many very tender species as I have since done. The alpine garden now receives seed from all the mountainous countries of the world, and it is, therefore, important that they be carefully sown. Now, the results obtained from sowing in a mixture containing a third part of sphagnum are astonishing. I can but strongly recommend the plan to all growers of alpine plants. As for the influence of sphagnum on the plant itself, I have nothing definite to say further. The habit is preserved, the plant remains dwarf and compact, the stem short, the flower large, and of the bright hue peculiar to the alpine flora. I have noted that the blooming of plants grown in sphagnum is somewhat later than that of other plants. Thus, when *Dianthus alpinus* was everywhere over, and my plants grown in ordinary soil were seeding, the clump grown in sphagnum began to bloom. This was the case also with *Campanula cenisia* and *Raineri*, *Saxifraga aizoides*, and several other plants. I again recommend English growers of alpine plants to try this method. It is possible that the results in a climate so moist and favourable to the development of vegetation would be negative. Still this remains to be proved. Who knows but that a lack of nourishment might check the over-exuberant growth of the foliage and stems to the advantage of the flower. In central France, where I have recommended this method of cultivation, M. Isaac Demole, a well-known amateur, who possesses a Villa at Cannes, has recently made trials of cultivation in sphagnum. This is what he writes on the subject:—"The seeds in general germinated well. The plants which you sent me flowered in the following order. (We must not forget that he speaks of the climate of Cannes where Roses bloom all the winter.) January 1, *Linaria alpina*; February 1, *Heuchera sanguinea*; March 1, *Saxifraga oppositifolia*; early in April, *Linaria pallida*; April 15, *Primula rosea*; 16, *Geum coccineum*; 17, *Dianthus alpinus*; 19, *Erinus alpinus*; 25, *Helianthemum roseum*; 27, *Saxifraga Cotyledon*. These alpine plants were placed against a wall full south, the soil in the pots consisting of a third each of sphagnum, loam, and peat, and the pot was half filled with sphagnum for drainage. But," adds M. Demole, "my gardener, M. E. Gottreux,

squares no pains. He is a Swiss, who has guarded his plants as though they were his federal colours." *H. Correvon, Directeur du Jardin Alpin, Genève.*

NEW OR NOTEWORTHY PLANTS.

CYMBIDIUM HUMBLOTII, Rolfe, n. sp.* AND C. FLABELLATUM, Lindl.†

It is strange how long a period sometimes elapses before an imperfectly-described plant becomes fully known. As long ago as 1822, Thouars published a rude figure of a Madagascar Orchid, under the name of *Limodorum flabellatum*. A few years later Lindley transferred it to *Cymbidium*, without, however, seeing a specimen. Mr. Ridley, in his paper on "The Orchids of Madagascar," remarks, that he has grave doubts if the plant belongs to *Cymbidium*, as now understood. In looking through some dried specimens collected by M. Leon Humblot in Madagascar, I came across not only the long-lost plant, but also a much finer species, apparently undescribed, and feel no hesitation in saying that both belong to *Cymbidium*. And now the novelty has appeared in cultivation. A fine plant was exhibited at a meeting of the Royal Horticultural Society on June 7 last, by C. Ingram, Esq., of Godalming, as *Cymbidium Loise-Chauvierii*, and was awarded a Botanical Certificate. With regard to the name, a word must be said. It has been applied to a so-called "scarlet *Cymbidium*" (which may be allied to the scarlet *Phalanopsis* and blue *Rose*), and it would be a pity to transfer it to a plain cousin in green and black, in order to avoid the trouble of having to coin a name in harmony with the principles of binomial nomenclature. M. Humblot is equally entitled to the honour, and I should not be surprised to find that the living plant, like the dried one, has been through his hands. *C. Humblotii* is a bold and striking plant, with rhizomatous stems, leaves somewhat resembling those of *C. giganteum*, and a branching panicle of numerous green and black flowers, which strongly recall those of *Cœlogyne pandurata*. Its characters are pointed out in the accompanying diagnosis. The presence of the genus in Madagascar is very interesting, but not surprising, when it is remembered what a considerable number of Malayan genera are represented in that island, and yet absent from continental Africa. *Cymbidium* is distributed from South China and the Eastern Himalayas to Ceylon and the Malayan and Philippine Archipelagos, with three outlying species in tropical Australia, and two in Madagascar. The second Madagascar species may yet appear in cultivation. *R. A. Rolfe.*

HOME-GROWN ORANGES FOR DESSERT.

OUR trees are now laden with their fruits, and have a very attractive appearance; this suggested to me the desirability of offering a few remarks upon their culture, and their value in the garden. Oranges are now imported of a quality superior to what they

used to be, but they are still much inferior to such as we can grow in our hothouses in England. I have frequently had examples of the Malta Blood and the St. Michael's Oranges so full of juice, that the skins have been rent by the internal pressure. We have grown specimens of the St. Michael's Orange 8½ inches in circumference, and the heaviest fruit weighed just 9 ounces, and these were gathered from a tree in a 13-inch pot, which produced four dozen of well-ripened examples. Their culture is very simple, but they require what gardeners term "good growing." For instance, the black peaty soil in which Orange trees are sometimes planted would not produce such fruit; there is no holding power in it—nothing to throw vigour into the trees. Good fibrous yellow loam, the top spit from an upland pasture, is by far the best material for them; add to four parts of this, one of decayed stable manure, and to each barrow-load a heaped-up 8-inch potful of half-inch bones. I also add the same quantity of broken charcoal, which maintains the compost in an open porous state. The drainage should be good, and formed of clean broken potsherds placed carefully, and over them some clean loam fibre, to keep the potting compound from mixing with the drainage. I repot the trees about once in two years, and a good time to do it is when the fruit has been gathered, in the spring. Before repotting any of the trees, remove as much as may be convenient of the old spent soil with a pointed stick. Over-potting must be avoided, as this does not improve the vigour of the tree even. For instance, if a tree was well established in a 9-inch pot, I would replant it in one 11 inches in diameter, and it ought not to be planted appreciably deeper; but the new potting material should be rammed in rather firmly.

When the trees are repotted, they should be placed in a house where they will have a moist atmosphere and rather warm temperature. I do not give any water at the roots for two or three days after repotting them. The leaves may be syringed with tepid water, but care must be taken that too much water is not supplied to the roots until they have run freely into the new potting material. Our own trees will now be repotted, and the above remarks may be useful to those who have trees which require the same process. We may now expect the blossoms to open, and this will happen before the fruits are gathered sometimes; the atmosphere should be kept rather drier at this time to promote a free set, and air should be admitted rather more freely. A close moist atmosphere when the trees are flowering might cause the blossoms to drop before fertilization had taken place.

Orange trees, when grown in a high temperature, are very liable to be attacked by pests, which cause the trees to become unhealthy. The mealy-bug attacks them sometimes, and this troublesome pest always does much damage to any tree or plant it thrives upon. Scale is even more frequently present both on the young and old wood, and it makes a sad mess of the leaves by encrusting them with a sticky substance. The best way to clean the trees is to wash the leaves and wood with a sponge and warm soft-soapy water. Of course, if a house can be entirely set apart to the culture of Oranges, it is very easy to grow the trees well, but failing this they will succeed in any house where a good temperature is kept up, and the trees are placed in a light position. They ought not to be shaded at any time, but as evaporation must be excessive in hot dry summer weather, the trees should be syringed twice daily, and freely supplied with water at the roots. I believe the best Oranges to grow for dessert purposes in English gardens are the Tangerine, St. Michael's, the Malta Blood, the White Orange (which has not a white but a yellow skin), and a new one to me, which Mr. Rivers sent here last year, named *Dulcissima*.

Pine-apples and Oranges could be grown well together in the same house if the Pine beds were placed in the middle, and the Orange trees arranged on stages at the back or front of the house. If the fruit is set in February or March, it will take a very long period to ripen. The Tangerine is the

* *Cymbidium Humblotii*, n. sp.—Stems rhizomatous, stout, about 6 inches long, clothed with persistent sheaths. Leaves linear, acute, 1½ to 1½ foot long, 5 to 9 lin. broad, leathery, and strongly nerved. Panicle branched, erect, 3 feet high, many-flowered. Bracts linear-lanceolate, acuminate, ¾ to 1 inch long. Pedicels 1½ to 1½ inch long. Flowers smaller than, but closely resembling, those of *Cœlogyne pandurata* in colour. Sepals linear-oblong, acute, 1½ in. long, 5 lin. broad, light green, the lateral ones strongly falcate, and carinate near the apex. Petals concave, lanceolate-elliptical, acute, 1½ inch long by 7½ lin. broad, light green, with a few small spots on the lower half. Lip 1 inch long, three-lobed; side lobes very broadly rounded; front lobe elliptical, oblong, obtuse, undulate, yellowish-green, with brownish-black margin, and many similar spots on the disc and side lobes, with an elongated blotch on either side of the lip; disc with a pair of short parallel plates with recurved margins near the base, and three slender creolate keels in front. Column 5 lin. long, broadly clavate, pale green, with many black dots on face, a narrow black margin, and deep brown anther-case.

† *Cymbidium flabellatum*, Lindl., *Gen. et Sp. Orch.*, p. 187; Ridley, in *Journ. Linn. Soc.*, xxi., p. 472; *Limodorum flabellatum*, Thouars, *Orch. Îles Afr.*, tt. 38, 40.

earliest to ripen, and the fruit of that variety would be ready to gather about the end of September, the others a month or six weeks later; but it hangs well upon the trees, and retains its flavour for two months after it is ripe. Although good Oranges may be purchased at a much cheaper rate than they can be grown, still it is not well that the money value of things only should be thought of; sentiment ought to have a place, and the trees laden with their delicate sweetly-perfumed blossoms is to many people worth all the expense and trouble bestowed upon them, but when we add to this the handsome well-flavoured fruit, enough has been said to recommend Orange trees for extensive culture. *J. Douglas.*

PERMOYRE, BRECON.

HAVING a few hours to spare on the occasion of a recent visit to Brecon, I went up to Permyre, the residence of R. D. Cleasby, Esq., J.P., and was shown over the extensive gardens and grounds by the head gardener. In the vineries, the Vines in the early-house were ripening off their foliage, the fine bunches being quite ripe, and the large berries of splendid colour. The Muscat of Alexandria, too, carried numerous grand bunches. The late-house was promising a still heavier crop, and many of the bunches will, when ripe, turn the scale at 7 lb. Peaches, numbers which I was informed had been gathered this season, and were fine and large, some weighing more than 8 oz. In the plant-houses, too, the same skill that is exhibited in the forcing of fruits by Mr. Mathews is seen in the crowded stages of clean healthy, well-grown plants, which are chiefly for the decoration of the table and apartments. Most of the large plants had been done away with to make space for a larger number of these smaller plants. It is difficult to single out any species of plant that is better grown than another, as all were good healthy plants, but perhaps Crotons, Dracenas, Caladiums, and among the latter a splendid lot of *C. argyritis*; *Gloxinias*, *Palms*, *Begonias*, and *Carnations*, exhibited the greater degree of superiority. In the Rose-house, a building measuring 39 feet by 18 feet, the centre is occupied by a plant of Fortune's Yellow, which covers about one-half of the house, and from which nearly 3000 blooms have been cut this season. In the Palm-house a very fine plant of *Bougainvillea glabra* is covered with bloom, forming a pretty sight. A good collection of herbaceous plants is to be found in the borders and beds set apart for them. The kitchen garden shows skilful management, the walls being covered with healthy and well-grown fruit trees of various kinds; the quarters well-cropped with vegetables, and everything in the best of order. *J. W.*

DWARF BRITISH FERNS.

THERE is certainly no class of plants better fitted for household pets than the many dwarf forms of British Ferns, which have been produced by sport from the normally large species, and to these may of course be added several species which are naturally of diminutive stature. The former class is, however, the more interesting and better adapted for home collections, since to it belong, as a rule, species which are of the easiest possible culture, whilst the naturally small species, being mostly rock or wall Ferns, demand generally special treatment, and are much more apt to perish by confinement or over-watering.

Few people—in fact, none outside the coterie of British Fern specialists—know that a small table or stage facing a north window could accommodate a score or two of the dwarf, congested, crimped, and curly varieties of Ferns which we have in view, a space, in fact, in which a single full-grown normal specimen would be "cribbed, cabined, and confined."

As a special example of this sort, we may instance the ordinary crested male Fern (*Lastrea f. mas. cristata*), which, if grown properly, will form a huge shuttlecock of beautifully tasseled fronds, fully 4 feet in height from the top of the trunk, which it forms

in June, and which may be itself a couple of feet high; the spread of the crown will be also 4 or 5 feet in diameter. At the other end of the scale, in precisely the same species, we have the tiny *L. f. m. ramulosissima*, more like a very small Parsley plant than anything else; the little fronds 4 or 5 inches long at the utmost, being divided and divided *ad infinitum*. In this same species we have *L. f. m. crispa*, 5 or 6 inches high, *L. f. m. crispa cristata*, a tasseled form of it; *L. f. m. crispa cristata angustata*, a very narrow form of the last. Then we have *L. f. m. crispa gracilis*, with slender leathery divisions, curved hook-like at the tips. These would all find ample room in 4-inch pots, and being evergreen, and, like all the rest, perfectly hardy, are as much winter ornaments as summer ones. A size larger, but still dwarf, is *L. f. m. fluctuosa*, or *crispatissima*, dense, and beautifully crimped, 9 inches high. Among the Shield Ferns, *P. angulare Lyellii* is the dwarfest and prettiest, all the beautiful cutting and detail of the *Polystichum* being crammed into a tiny plant of 4 or 5 inches high. *P. a. congestum* is larger, but very dense, and a crested form of this exists of the same dimensions—about 9 inches. *P. a. parvissimum* is very neat and pretty, but belies its name by reaching a foot in height.

The Lady Fern (*Athyrium filix-femina*), has yielded several gems on like lines. *A. f. f. Edwardsii* is the counterpart of *P. a. Lyellii* in delicate condensation, and *A. f. f. stipatum*, *Granteæ* apes, *P. a. congestum*, but is denser. Then we have *A. f. f. crispum*, an old friend, with a creeping root, which forms dense little clumps of creating 6 inches high; and *A. f. f. acrocladon*, which, though it is much larger, is so compact as to require little room. The forms *acrocladon*, *densum*, and *velutinum*, are veritable balls of moss-like foliage, more like green sponges than Ferns.

The Blechnum Spicant section of varieties is mainly small-growing. *B. S. crispissimum* (Horsley), *B. S. concinnum* (Druery), *B. S. lineare* (Barnes), and *B. S. Maundersii*, are all small by nature.

The Hart's-tongue (*Scolopendrium vulgare*) has yielded a number of forms fitted for culture in limited space. *S. v. spirale*, *muricatum*, *glomeratum*, *Kelwayii*, with its half-dozen synonyms, *Baxterii*, *Coolingii*, &c., and a host of new forms obtained by Mr. E. J. Lowe by crossing from a little crowd of Tom Thumbs in this species, which, from its known habit of adaptation to wall-growing, as well as free growth in the soil, is obviously fitted also for small specimens in pots. Among the small species all the *Asplenium* may be reckoned, and if their natural habitats be imitated by planting them in rocky chinks contrived with bits of porous stone and sandy leaf-mould, they will do as well in pots as out of them. The lightest position suits them best. *Asplenium marinum* benefits by brackish water. *Asplenium viride* is the better for a glass over it, as it wants a damp atmosphere. The several varieties of Maidenhair, *Adiantum Capillus-veneris* take up scanty room as a rule.

The Bladder Ferns (*Cystopteris*) are all dwarf, but are scarcely to be recommended for the purpose, nearly all having a nasty knack of turning brown as soon as the fronds mature under culture. The common Polypody (*Polypodium vulgare*) has yielded only one dwarf form, *P. v. parvissimum*, which is very chary of growth. The whole of the varieties are, however, of medium size under ordinary culture, and, being evergreen, are well worth growing.

We have now indicated a very fair collection, and cannot too strongly recommend the culture of these pretty plants to our lady friends who may have windows facing north, where flowers can scarcely thrive, owing to lack of sunshine. In such a spot all the Ferns named would thrive apace, and amply repay the little care required in watering, which is their chief desideratum. The pots must be well drained, and should not stand in water. A very good plan is to invert a small saucer in a larger one, and stand the pot upon it; a little water standing in the lower one will then do no harm, and sourness will not be induced. When once the plants are installed,

they should be marked in some way, so that they be not turned this way and that as growth progresses. They will grow towards the light, and not towards the room, and any attempt to thwart this natural law by turning them round and round simply results in twisted growth and ugly plants. The table should be on castors, and then, when it is desired to display the plants to one's friends, it can be rolled away from the window and inspected from the front. Light is health to Ferns, as to other plants, hence, give them as much diffused light as possible. Burning sunshine, however, is dangerous. Air, too, is good, but draughts are bad, since the fronds get all the beauty and delicacy rubbed out of them. A general open compost of leaf-mould, turfy loam, and silver-sand, in the proportions of 2, 2, and 1, will suit all we have named; but for ladies it is best to get a peck or so of compost from a nursery. *Chas. T. Druery, F.L.S., F.R.H.S.*

NURSERY NOTES.

ORCHIDS AT ST. ALBANS.

A CHANGE has come over the aspect of the noted Orchid nursery of Messrs. F. Sander & Co. at St. Albans, the well-known long houses running into the corridor in which the Mexican and Guatemala Orchids are grown, and the offices in which the *Reichenbachia* is printed, are now bounded at the other end by an immense intermediate-house, running parallel to the show-house for Orchids in flower, and from which branch off the houses for seedling Orchids and new plants. From these again, the rockeries planted with Ferns and Orchids, lead to the offices.

Taking the first group, consisting of new Orchids in flower, we note that most novel *Cattleya Amesia*, a beautiful species with pure white sepals and petals, the flowers being nearly 9 inches across. It was imported from a district lying between that in which *C. Percivaliana* and *C. Mendeli* are found. Next comes the true *C. Victoria Regina*, which in all respects is an improvement on any known variety of *Lælia elegans Turneri*; then we have the new *Cattleya princeps*, with magnificent flowers, the greenish sepals and petals almost entirely covered with a port-wine colour. Beside these, we find the original *Cattleya hybrida*, which was supposed to have been lost to the country; a new and overpoweringly fragrant white *Angræcum* from beyond the Nyassa territory; the beautiful *Calanthe vestita Fournierii*; the distinct and beautiful *Cypripedium Chamberlainianum*; the pure white *Odontoglossum Pescatorei Schroderæ*; the pretty *O. Schroderianum*; the dwarf but exceedingly showy *Oncidium Gravesianum*; the brilliant scarlet and yellow *Renanthera Storyii*; the lovely ivory-white *Phalænopsis Micholitzii*; the beautiful *Miltonia Bleiana splendissima*; and that most richly-coloured of all hybrid Orchids, *Lælio-Cattleya Arnoldiana*. In the *Cattleya*-houses, with their pretty rockeries at each end, over which are suspended hundreds of the white forms of *Lælia anceps*, we found a fine display of the varieties of *Cattleya Mossiæ* and *C. Mendeli*, with an occasional plant of the white forms of each, viz., *C. Mossiæ Wagneri* and *C. Mendeli Bluntii*. *Lælia purpurata*, too, is much in evidence in these houses; varieties which are here thought ordinary putting the named varieties of olden times much into the shade.

In regard to the *Lælias*, *Cattleyas*, and other Brazilian Orchids, in the culture of which Mr. Godseff is a high authority, one feature should not fail to be noted, as it is of importance to cultivators generally, and that is the profusion of root growth which the plants, one and all, exhibit, and which, doubtless, sufficiently accounts for the goodness of the flowers. Mr. Godseff imputes this good state of things to his strict enforcement of the rule with regard to the most careful watering of the plants at all seasons, letting there be no lack of moisture while the plants are growing, and especial attention to their being kept tolerably dry for a certain period

after the growths are matured. The plants which are thus managed root more freely than those that are over-watered.

In the large tank-house, with its rich display of coloured Water Lilies, are hundreds of the fine *Dendrobium Phalæopsis Schroderianum* of every shade; suspended over them, are the fine yellow *Oncidium ampliatus majus*; also the new *O. Gravesianum*; a new strain of *O. Lanceanum*, which have generally white labellums like the figured *O. L. Louvrexianum*; the handsome *Spathoglottis Ericssonii*; the true yellow *Phajus bicolor*; and the exceedingly rare orange-coloured *Calanthe curculigoides*.

The house containing many hundreds of *Miltonia vexillaria* in flower, necessarily has some distinct things among them, especially when it is considered that this importation produced the unique *M. v. Leopoldii*, *M. v. Sanderiana*, *M. Mrs. H. Ballantine*, and others. One of them at present in bloom has snow-white flowers, with just a ray of rose colour on the petals, and the usual reddish lines on the lip. Another is rose coloured, the markings on the lip being very nearly scarlet. In this house are plants of the new *Epidendrum Godseffianum*, with its broadly-expanded white labellum, veined with rose, and well worthy to bear the name of the able manager of this fine establishment. In the next house we found several of the new hybrid *Thunia Brymeriana*, an exquisite flower, pure white, the labellum only bearing a delicate tracery of purple, and a slight tinge of yellow; also *Odontoglossum læve*, *O. hastilabium*, *Aërides Houlettianum*, and various new botanical Orchids imported from a new district in Brazil.

A hurried glance through the remainder of the fine display of Orchids in bloom revealed a choice lot of *Odontoglossums*, of which those planted-out are said to thrive the best; a fine bank of *Odontoglossum citrosum*; a grand importation of *Cypripedium Chamberlainianum* and *C. niveum*; a quaint and pretty lot of new *Cynoches* and *Catasetums*; *Dendrobium cupreum* with twenty spikes; *Cypripedium superbiens* Demidoff var. with a dozen blooms, *C. exul*, *C. Rothschildianum*, and a number of new hybrid *Cypripediums* of great promise.

Not the least of the attractions of this firm is a fine collection of new stove and greenhouse plants, which its collectors have for the last few years been forming. Among these the most striking at present is *Dipladenia Clarkei*, a variety with dark crimson flowers, with a fire-like glow in the tube; a free-flowerer, and very different in that and other respects from the allied *Dipladenia atropurpurea*. With these also are a new spiny-leaved *Erythrina*, a magnificent form of *Begonia corallina* (Sander's var.), which covers the side of the house; the beautiful silver and green *Dracæna Sanderiana*; the lovely and free-flowering *Balsam* (*Impatiens Sanderiana*), ranging in colour from snow-white, with a crimson eye, to rosy-red; and three houses of New Guinea plants, of which it is better not to say much until they mature, but which when established, will make a name for themselves.

MESSRS. BARR & SON, LONG DITTON.

When visiting these nurseries a week or so ago our attention was particularly attracted by the very bright and striking display of Messrs. Barrs' collection of Chinese double *Pæonies*. Some of the earlier varieties were already past their best, and it was easy to note what special varieties would be most suitable for prolonging to the utmost the *Pæony* season. The first to which our attention was attracted is not a new one, and it is as cheap as any in the collection, but it is a fine flower nevertheless. Its name is *Madame Fartado*; very large rose or carmine-coloured bloom, its centre florets are somewhat paler, almost salmon, and it has a very rose-like scent. *Lord Salisbury* is a tall grower with large dark crimson flowers, which are not quite so double as some others; it is a very free bloomer. *Couronne d'Or* is a charming flower. It is white, with a little laced crimson towards the centre, where the yellow anthers are very noticeable

and pretty; it is large, and one of the latest of this section. *Snowball* is a pure white, and when opening has a faint yellow tinge in the centre; it is perhaps the most desirable of all the many charming varieties of the white group. *Solfaterre* has outer petals of pure white, and the centre is a very pale yellow with the perfume of *Roses*, and possessing a magnificent appearance. *Eugène*

A very different variety is that called *Triomphe de Paris*, which is semi-double only; it is white, with a centre of primrose-yellow, in its early stages, and is rose-scented. The very deep crimson *Louis Van Houtte*, with perhaps a shade of purple, is a very distinct and fragrant flower. Many more deserving attention we were obliged to pass. The above varieties are very flowering and fragrant, and most of them are late.

Among the general nursery stuff the *Irises* were practically over, but some large beds of *I. Kämpferii* were just in bud, and are very strong and healthy. In the Herbaceous department was a bed consisting of hybrid forms of *Lupinus arboreus*, and several of the varieties had a very pretty effect. A good patch of *Myosotis azorica*, all quite true, was a pretty sight indeed; and in another bed was a variety called *M. a. Imperatrice Elizabeth*, which only differed from the type in that it is a little taller.

The large *Senecio macrophyllus*, some 4 feet high, had just expanded its blooms. This rather coarse-looking plant with its broccoli-like leaves, is only suitable for very large borders, but given a suitable position, it has a very fair effect. In a bed of seedling *Gaillardia maxima*, were some very fine varieties, and we were informed that Mr. Barr is going to work up a collection of these pretty and showy flowers.

The striking flowers of *Papaver bracteatum* were to be seen, and also those of a pretty pink variety called "*Pink Beauty*." *P. pilosum*, an orange coloured variety, also very beautiful, is an exceedingly floriferous plant. Among the *Potentillas* was the exceedingly bright scarlet *Wm. Rollinson*, and also a pretty yellow variety called *Vase d'Or*. *Silene maritima*, fl.-pl., is a good dwarf growing plant for the rockery, bearing rather large white flowers. A large number of *Larkspurs* in variety, and some beds of *Violas* were very gay, but the *Violas* are just being subjected to the cutting that necessarily precedes propagation. *Meconopsis nepalensis* (*Himalayan Poppy*) had its yellow blossoms fully expanded, and was doing fairly well in a damp, somewhat shady position. *M. Wallichii*, the blue one, was not so forward, but the stems were much stouter and higher. The beautiful *Onosma stellulata taurica*, which is rarely seen doing well, was covered with its pretty yellow blossoms; and close by was a bed of *Lychnis vespertina alba plena*—the *Carnation-like* blooms of this plant are exceedingly useful. The hardy *Pitcher-plant*, *Sarracenia purpurea*, has lately been planted on the side of a stream which has been dammed, where Mr. Barr intends to plant many bog-loving plants. It is too early to say that it will thrive in its new position, but appearances give every indication favourable to such a result.

TSUGA PATTONIANA.

We are indebted to Mr. Croucher, of the Gardens at Ochertyre, for the opportunity of figuring the male flowers of *Tsuga Pattoniana*. So far as we know, these have not been previously figured, but their beauty, apart from botanical interest, seem to render it desirable to do so. As to the first point, Mr. Croucher writes in warm terms of appreciation, the bush being covered at the time he wrote, with a sheet of lilac catkins. Their general appearance is well shown in Mr. Smith's drawing (fig. 1). Each is from 10 to 12 millimetres long, supported on a slender stalk of about the same or slightly greater length, and which is surrounded at the base by a bud-like mass of overlapping brown perule. The anthers are club-shaped, 2-lobed, splitting lengthwise, of a violet colour, and provided at the back with a very short point. The pollen-grains are large and globular, with a central band, but not winged as in *Pinus*. This latter point raises a doubt as to whether the plant we are now dealing with is the true *Pattoniana* or not, for Engelmann expressly states, *Bot. California*, ii., 121, that the pollen grains are bilobed, and resemble those of true *Pinus*. The leaves of Mr. Croucher's specimen, however, agree perfectly with those of a native specimen sent us



FIG. 1.—*TSUGA PATTONIANA*: FOLIAGE AND MALE FLOWERS, LILAC. DETAILS ENLARGED.

Verdier is one of the paler varieties, and may be described as blush-pink, the centre being almost white; when opening it has much the appearance of a *Rose* in the form it assumes. *Henry IV.* is a *Rose-scented* variety; colour, rosy-pink, and very late. *Madame de Vatey* is an especially pretty flower, and when first opening its white centre has a charming effect with the large outer or guard petals, which are flesh-coloured. It possesses a very rich fragrance.

from the foot of the "Three Sisters," Oregon, by Mr. Collier. Moreover, the leaves are stomatose on both sides, whilst in other *Tsugæ* the stomata are on the lower surface only. In form, the leaves are as Engelmann describes, acutish; some are, as he says, convex and keeled above, but others on the same twigs are furrowed in the centre.

The tree which has also been confused with *Abies Hookeriana* and *A. Williamsoni* occurs on mountain tops, and is limited, says Lemmon, to the upper points of forests that creep up along glacier-beds and volcanic ravines, close to the perpetual ice in the cascade and Sierra Nevada mountains. In British Columbia it grows at an elevation of 8000 feet; further south it attains 10,000 feet.

"In many of these regions," says Mr. Lemmon, "the lower part of the belt mingles with other trees, such as Red Silver Fir, Mountain Pine, or Aspen Poplar, and here the trees often attain a large size—6 to 12 feet in diameter at base, tapering to a slender shaft, 80 to 150 feet high; but in strictly alpine situations the trees are reduced to low conical masses of foliage, or prostrate creeping shrubs.

"In favourable situations the lower limbs are retained, and become long, out-reaching, and spreading over the mountain slope for many feet; the upper limbs are irregularly disposed, not whorled; they strike downward from the start (so that it is almost impossible to climb one of the trees for the want of foothold!), then curving outward to the outline of the tree; they are terminated by short hairy branchlets that decline gracefully, and are decorated with pendent cones, which are glaucous purple until maturity, then leather brown, with reflexed scales. The main stem sends out strong ascending shoots, the leading one terminating so slenderly as to bend from side to side with its many purple pendants before the wind, and shimmering in the sunlight with rare beauty."

From the other Hemlock Firs, *T. Pattoniana* may readily be distinguished by the scattered or somewhat tufted, erect leaves, as contrasted with the two ranked (apparently) horizontally spreading leaves of the other species. The form of the leaf we find to be variable, but the presence of the stomata on all sides is a distinguishing feature. On account of the peculiarities just mentioned, as well as others visible in the ripe cone, the plant has been placed in a separate section of *Tsuga*; whilst Lemmon goes further, and raises the plant to generic rank under the name of *Hesperopenke* (Lemmon, *Third Biennial Report of the California State Board of Forestry*, 1890, p. 128, tab. 9).

What is generally grown in gardens as *T. Hookeriana* seems to be only a form of *Mertensiana*, and the same may be said of *T. Williamsoni*.

TSUGA MERTENSIANA has often been alluded to and figured in our columns under this name, and also under that of *T. Albertiana*. It is so universally admired that it needs no description, and we should not have alluded to it at present, but for the opportunity Mr. Croucher has afforded us of figuring the male catkins, which are only 6 to 7 millimetres long. The anthers are lilac, and the pollen-gains, as drawn for us by Mr. W. G. Smith, are just like those of *T. Pattoniana*, but rather smaller in dimensions (see fig. 2). *M. T. M.*

PLANT NOTES.

CLERODENDRON BALFOURIANUM.

I NOTICED a grand plant of this showy and very free-growing and flowering climber in the Azalea-house at Crichel a short time ago. It is trained underneath the apex, there being three massive rows of flowering shoots, extending just upon 40 feet long each. It was very telling in effect. *H. W. W.*

CALOCHORTUS AMENUS.

Among rare bulbs in flower here just now, none are prettier than a *Calochortus* which I imported last year under the above name, and which, if I am not mistaken, is now blooming here for the first time in Europe. It belongs to the *Cyclobothra* section, of

which the *C. alba* and the pretty golden *C. pulchella* are familiar examples. In habit, this novelty is exactly intermediate between these two, but it is very much more free-blooming than either. The colour of the curiously-formed, nodding bells is a very deep rosy-pink, of a particularly pleasing shade. Judging from its vigorous growth, it appears to have a very hardy character, and promises to become a



FIG. 2.—*TSUGA MERTENSIANA*: FOLIAGE AND MALE FLOWERS.

very good garden plant. *C. G. Van Tubergen, Haarlem*. [A pretty border or pot-plant, of a shade of colour extremely rare in garden flowers. Our correspondent calls it "deep rosy-pink," but it would be better described as rosy-purple. *Ed*]

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM (HYBRIDUM) LEROYANUM.

A CROSS out of *O. crispum* by the pollen of *O. luteo-purpureum*. The flowers are $3\frac{1}{2}$ inches across, petals broader than the sepals, pale straw-coloured,

with three transverse bars of chocolate-red. It was raised by M. Leroy, head gardener to Baron Edmund de Rothschild, Arnicunoillers, Paris. It was the first artificially-raised hybrid *Odontoglossum*, and is of interest as showing the correctness of the supposition that *O. Wilckeanum* is a natural hybrid between the species named, so that *O. Leroyanum* may be considered, according to Mr. Rolfe, as a form of *O. Wilckeanum*. Three years elapsed between the sowing of the seed and the production of the flower-spike. For the first eighteen months the plants resembled *Zygopetalum* rather than *Odontoglossum*. *Reichenbachia*, t. 37.

CYPRIPEDIUM ASHBURTONÆ VAR. LAUCHEANUM.

A hybrid raised at St. Albans by Mr. Maynard from *C. barbatum* var. *Warneri*, crossed with *C. insigne* var. *amœnum*. It is chiefly characterised by the coppery tint of the flower. *Reichenbachia*, t. 38, n. 1.

CYPRIPEDIUM (HYB.) EYERMANNIANUM.

A hybrid from *C. barbatum*, crossed with *C. Spicerianum*; described by Mr. Rolfe in our columns, December 27, 1890, p. 747. *Reichenbachia*, t. 38, f. 2.

CYCNOCHES CHLOROCHAILON.

A good representation of an interesting species, taken from a plant in the collection of the Dowager Lady Howard de Walden. The plate is accompanied by an interesting note by Mr. Rolfe on the highly curious sexual variations of this and allied species. *Reichenbachia*, t. 39.

CATTLEYA LODDIGESII O'BRIENIANA.

Flowers pale rosy-lilac, side-lobes of the lip shorter and smaller than in the typical *Loddigesii*, from which Mr. Rolfe distinguishes it as a variety. See *Gardeners' Chronicle*, 1889, part 2, p. 700; 1890, part 2, p. 702.

A TRAVELLER'S NOTES.

(Continued from vol. xi., p. 753.)

SAHARUNPUR, December 16.—At Saharunpur there is little to see but the government gardens. Mr. Gallon, who has been in Saharunpur thirteen years, came there direct from the Edinburgh Botanic Gardens. The garden, some 200 acres in extent, is maintained for the trials of new economic plants and for the distribution of vegetable and other seeds, and the like. Although it receives 20,000 rupees annual subsidy, it is almost able to pay its way, as it returns 16,000 rupees.

It is scarcely kept up for the people's pleasure, Saharunpur not being an important place, and there being but few English at the station. There are no beds in the garden, the entire space being laid out with winding roads, isolated trees and a few clumps, whilst here and there is a small pond. There are two or three fine avenues of *Casuarinas*—chiefly *C. muricata*, some 60 feet high, a good sized house covered with grass and a museum of no especial interest.

There is but little shrubbery—except round the boundaries in places—most of the place being under grass. Sixty acres are set aside for saving seeds and making experiments with new Cottons, Sugar-canes, and such like.

Close by a grass-covered house is a *Bougainvillea glabra*, 35 to 40 feet high, climbing over a tree in wildest profusion—it is the largest mass I have yet seen. Two species of *Calamus*, *C. Royleana* and *C. Roxburghii* are represented; the former is a pretty climber, usually found at the foot of the Himalayas, where it forms a jungle so thick that no elephant or anything else can go through it. Though its canes are not so useful for chairs and other economic purposes as the latter, I yet think it is the prettier of the two.

Besides the avenue of *Casuarinas*—a truly fine sight, as already stated—there is a very neat one between a small glasshouse and the museum, of *Cupressus sempervirens*, each tree being from 25 to 30 feet high. There is a row on each side of a narrow path; it is like passing between tall pillars. An arbour leading to it is quite covered with *Ficus pumila*, producing, Mr. Gallon tells me, very large fruit.

Besides the large *Bougainvillea glabra*, this garden contains the largest mass of *Thunbergia laurifolia* (now out of flower) I have yet seen. This hangs

like one solid curtain for at least 40 feet from a tall specimen of *Schleichera trijuga*, and it is nearly as broad as it is high, and so thick that literally not a leaf or twig of the tree supporting it can be seen. It forms a most striking picture.

A pretty tree not far from this spot is *Dillenia indica*, with foliage much resembling though twice the size of that of our *Castanea vesca*. Mr. Gallon tells me its flower is like *Magnolia grandiflora*, only bigger. The fruit is used for curries by the Bengalese.

One large Mahogany, *Swietenia Mahogoni*, is in the garden, and a tree I have mentioned as being at Baroda, *Kigelia pinnata*, is represented by a good specimen. Many of its last season's flower racemes are 8 to 9 feet long, and one, in particular, has reached the astonishing length of 15 feet. A plate in the museum gave me an idea of what a splendid thing this must be. The flowers are purple, in shape not unlike those of *Rhododendron arboreum*, 4 inches in diameter (according to the plate), and they are fairly closely set on the racemes, which possess the faculty of sending out another raceme half way down; this second one often reaches the ground. A raceme, however, does not often send out another for more than one or two seasons at the most.

The brown seed pods of *Lagerstrœmia regina* attracted my attention. I am told its large purple flowers are very fine during the rains. *Bauhinia variegata*, with pink and white flowers, very common in the jungle, is well represented in the garden. There is also a large Fig-tree here, a fine specimen with numerous aerial roots, which I first took to be a Banyan; but on closer examination, I found its foliage was much smaller. It was a specimen of *Ficus retusa*.

Mr. Gallon considers he has the largest *Araucaria Cunninghamii* in India; it is certainly a splendid specimen, some 70 feet high, regular and even. Not far from it is one of the chief ponds, with a fine variegated *Agave americana* on the bank, and a large mass of *Papyrus antiquorum* in the centre. This is so thick that one can well understand a clump of this species having hidden the infant Moses, but withal, it is most graceful; it is at the foot of a tall *Phoenix sylvestris*. Several *Phoenix* are about the grounds. Mr. Gallon thinks the Arabs must have brought these Palms over, as all seem large trees, and there are no young ones about. A very curious sight is one of these *Phoenix*, some 50 feet high, the lower portion of the stem of which is completely encircled by a *Ficus religiosa*. The *Ficus* is, of course, much younger than the *Phoenix*, and having been planted near it has grown round it. It is most curious to see the black stem of the *Phoenix* rising apparently out of the whitish stem of the *Ficus* at some 10 feet above the ground.

A pretty creeper in flower is a white *Combretum*—*C. decandrum*. It was growing over a mop-headed tree, *Phyllanthus indica*, some 30 feet high. As the creeper is only five years old, it must have grown with great rapidity.

On a knoll, not far from another pond, is a pretty little group of Conifers, chiefly consisting of *Cupressus funebris*, *C. sempervirens*, and *Pinus longifolia*, with its long, pendulous needles; it is a native of the Himalaya. Mr. Gallon has several times tried *Pinus Gerardiana*, but it usually damps off in the rains, doubtless on account of its coming from a higher elevation. The individual specimens in this clump are not large, but the effect is pretty, clothing the sides of a somewhat rising piece of ground as they do, with the pond beyond.

The finest foliage-tree in the garden is the Teak—*Tectona grandis*. It is a noble tree, either singly or in avenues, the individual leaf being of a dark, dull green, and often 1 foot in diameter.

Palms are not numerous, or particularly good, as it is, of course, too far north for them, several degrees of frost being frequent. There is, however, one grand clump of *Livistona Martiana* (*Latania borbonica*). A large *Bauhinia Vahlia*, one of the most destructive plants known in the forests, with a main stem 2 feet in diameter, winds and curls in, around, and over a fine piece of *Ficus cordifolia*. The leaves of the *Bauhinia* are often 1 foot broad, whilst the pale yellow flowers are but small.

Near the end of the garden, and close to the *Casuarina* avenue, is a plantation of considerable size of the Loquat (*Eriobotrya japonica*); some of the trees are large and bushy, and in splendid condition. Here it fruits in spring, whilst on the hills and, I am told, in Japan, it fruits in the autumn. The sale of its fruit pays well. Vegetation is, of course, very different here to what it is at Bombay or Baroda; many trees are absent that flourish further south. *Millingtonia* (so often referred to in my former

letters), though it grows, never flowers, I am told, as it does further south—a few solitary bunches on the top is all it can produce. It has also the disadvantage of being shallow-rooting, and the storms play great havoc with it. A pretty shrub I had not seen before is *Holmskioldia coccinea*; it flowers most freely, the chief beauty lying in a great red calyx, the corolla being almost imperceptible. Its long sub-pendulous shoots are covered with bloom.

English Pears are not much good here, but Mr. Gallon showed me a nice young plantation of a Chinese variety, which he says is very good for cooking. He has also some forty varieties (not very dissimilar, I fancy) of Chinese Peaches; he says they are good, not cling-stones, and more juicy than ours, which he is not able to do much with. It is a curious thing that *Artocarpus integrifolius* (the Jack-fruit), common in Ceylon, will grow at Saharanpur fairly well, whilst the Bread fruit is an entire failure.

A very pretty grass, which should be hardy with us, is *Eulalia nepalensis*. It is dwarf, but its plumes droop gracefully. Where it is wild on the hills it grows higher than *E. japonica*, and is very plentiful. *Cycas circinalis* and *C. revoluta* grow well. I noticed one large-branched specimen of the former. The method of reproduction followed is to make slits a few inches long in the bark of the main stem, and in about twelve months the young plants appear, which can be detached. *C. circinalis* is found to be freer in this respect than *C. revoluta*.

Roses are very good, quite equal to those in England. They strike freely from cuttings, though they are also budded on a Rose, now found in the jungle in quantity, though evidently introduced at some time or other. Frosts are common at this time of the year, 4° and 5° being usual, whilst in the hot season 90° in the shade, and occasionally 95°, is the ordinary temperature. It is surprising that some things planted in the garden withstand such extremes. *Panax*, *Crotons*, *Dieffenbachias*, *Aralias*, and such like have all to be housed under glass in the cold season—and it is hopeless to plant them out permanently.

Mr. Gallon has three distinct varieties of *Bougainvillea*, *B. glabra*, and two of *speciosa*, one of which he calls *spectabilis*.

Of *B. glabra* one is called the old variety, and has pale pink flowers appearing all the year round—one much brighter, blooming only in the cold weather, and one—the one I have seen so much of, and which seems to grow everywhere, with large dark flowers blooming more or less all the year round—all three have the smooth characteristic foliage of our *B. glabra* in England.

The true *B. speciosa*, with the dark flowers and hairy foliage, generally flowers in March—whilst the one Mr. Gallon calls *B. spectabilis*, flowers from September to May, being at its best in February.

The vegetable gardens, some 60 acres in extent, at one end of the grounds, interested me much. They are chiefly kept for seed purposes, to supply soldiers and others. Nearly all kinds do well, and wonderful tales are told of Veitch's Autumn Giant Cauliflower, it is said to be very fine, and if models speak truly, it must indeed be so; a model in the museum (which Mr. G. assures me is not exaggerated), being nearly 2½ feet in diameter—this refers to the head alone.

Acclimatised seed is usually very good, though rigid selection is necessary. Mr. Gallon finds that Onions, Leeks, and Parsnips seldom germinate from home-grown seed. The difficulty, no doubt, lies, to a certain extent, in its being necessary to sow in October, and consequently it is impossible to get quite fresh seed from Europe. All kinds of annuals do well. Amongst such, the common Dandelion is cultivated as an annual on a somewhat large scale for medicinal purposes, being used chiefly in liver complaint.

A house covered with grass, tied pretty thickly on wire netting, the supports being of iron, is near the museum. The grass used is *Pollinia eriopoda*, and it withstands the heavy rains and scorching sun for about two years. From the roof hang some good specimens of *Aërides* in Bamboo baskets, these being found superior to pots or any other contrivance. Some of the *Aërides odoratum* and *multiflorum*, as well as a few pieces of *Dendrobium moschatum*, were very large, and in fine condition. This house has a low circular dome, from which four paths radiate at right angles. It is not filled with anything of any great interest, chiefly containing *Dieffenbachias*, a few Palms, a *Philodendron* or two, and in the centre, under the dome, a good-sized *Livistona Martiana* (*Latania borbonica*). The prettiest sight in the house is certainly *Oxalis* roses, grown in pots, numerous flowers, brightly-coloured, appearing above the low dwarf

trifoliate leaves; rows of these line each side of the paths. *Oxalis asinina*, pale sulphur in colour, with leaves bearing a strange resemblance to a pair of asses' ears, is another pretty species.

The museum is chiefly filled with native-made models—some very good—of flowers and vegetables, whilst coloured plates and photographs abound. It is the home of Mr. Duthie, the chief of the botanical service of the Northern Department of India. James H. Veitch.

(To be continued.)

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

CAMELLIAS.—The old double white *C. fimbriata alba*, is still one of the best for early flowering, and with sufficient number of this variety and a few of *C. candidissima* for late flowering, *Camellias* may be had in bloom till the end of the month of May. The present is a good time to prepare the different specimens. For instance, those plants which have set their buds the longest time, and are consequently more or less developed, may be removed to a cooler house or placed out-of-doors, the other plants being kept indoors till the buds are well formed, when they also may be placed in a cold house or in the open. No doubt the temperatures the plants are subjected to during late winter and spring has a great deal to do with the time at which they will flower, but by careful observation of the time it takes for the flower-buds to arrive to a certain size, and then to the time that the flowers begin to expand, a glut of flowers at one time and scarcity at another may be in great part avoided. *Camellias* in beds and borders often make strong growths, which set their flowers badly; and to avert this mishap, it is advisable to withhold the water at the roots to a certain extent, that is, partially drying the soil, which will be a means of checking growth, and inducing the buds to set. In these cases, care must be taken that sufficient water is afforded later, to thoroughly moisten the soil when the season of growth is past.

PLUMBAGO ROSEA.—Old plants of the above may have their final shift into 10 or 11-inch pots. Young spring-struck cuttings that are growing in 48's may have their final shift into 32's, affording them a compost of fibrous loam, leaf-mould, and a small portion of decayed manure and sharp sand. The plants should be stopped three or four joints down each shoot, when they will break more regularly than if the points only are pinched out. *Plumbagos* require plenty of light from the time they are struck till they come into bloom.

CHINESE PRIMULAS.—Plants which have been raised from seed early sown in spring will be ready for shifting into small pots. The compost employed may consist of two parts rich loam, one part each of rotted dung and leaf-soil, with clean sharp sand in sufficient quantity to make the soil porous; place the plants in a cold frame, and well up to the glass, keeping them rather close till they are established, and affording them shade during the brightest part of the day.

ZONAL PELARGONIUMS.—Plants which have flowered since the early spring should now be well cut back and placed in a cold frame, keeping them rather dry at the roots till they break, and when the new shoots are about 2 inches in length, the plants should be partially shaken out of the soil, and repotted in pots of the same size as those they previously occupied. If not already done, put in another lot of cuttings of the double-flowered varieties, placing them singly in small pots in a mixture of sifted loam and sand.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

FRUIT TREE BORDERS should be thoroughly examined, notwithstanding the recent heavy rains, and if dry, water should be afforded abundantly. In the open quarters the rain may have penetrated the soil to a good depth, but borders in front of walls rarely ever get enough by this means during the summer months. Watering fruit-tree borders in rainy weather may seem to some persons waste of labour; but after a spell of dry weather the subsoil is often much drier than is good for the trees, and both manure water and clear water may be safely made use of. If a mulch over the tree roots has been delayed, it may be put on after the watering.

GOOSEBERRIES.—Gather the fruits whilst still green, and when perfectly dry, for bottling, jellies, &c. Bushes whose berries are intended for dessert purposes, should be netted in good time, and properly strawed down, to save the fruits from splashing by rain.

MORELLO CHERRIES.—The young shoots should be laid in a similar manner to those of the Peach, i.e., laying in as many for next year's fruiting as space can be found for without crowding. Morellos fruit freely on spurs as well as one-year old shoots, and for that reason all those which must be removed should have four or five buds left at the base, the shoots to be again shortened at a later part of the season. Black aphid is troublesome may be destroyed, and the trees cleaned by syringing them with soap suds, diluted tobacco juice, or water in which Quassia chips have been steeped for some few days, after which clean water should be used several times to thoroughly remove all traces of the insecticide.

RASPBERRIES.—Remove all root suckers that are not required, leaving from five to seven of the strongest for fruiting next year, and encourage new plantations by mulching and watering. The canes of autumn fruiters must be freely thinned, and mulched with light manure, but on heavy soils it is better not to apply manure over the roots. Summer-fruited varieties should be heavily mulched on light soils with rich manure.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

CUCUMBERS.—Plants exhausted by long bearing should be cleared out, and replaced with fresh soil and young plants. Cucumber plants grow quickly at this season, and the fruits become usable at a time when there is generally a good demand for them. Attend to stopping the lateral shoots of bearing plants, and liberally top-dress the beds and hills with a rich compost; also make free use of liquid manure.

VINES whose fruit show signs of beginning to colour should have all the desirable stopping of the shoots performed so as to render it afterwards unnecessary so long as the bunches hang on the Vines, for, no matter how carefully this kind of work may be performed, bloom is sure to get rubbed off some of the bunches of Grapes. Red-spider—that worst of evils in Vine culture—should be got well under hand at this stage, and if its appearance be feared, the leaves should be dusted over with flowers-of-sulphur. Admit air freely to this vinery at all such times as the weather is dry; and guard against sudden changes of the temperature. The berries of Madresfield Court and West's St. Peter, are liable to crack, the latter less than the former, and much vigilance must be exercised in maintaining a perfectly dry atmosphere about these varieties whilst the fruit is ripening; for the mishaps of some gardeners with these are due to their growing them in vineries more or less moist, clearly points to the cause, and although it is desirable that the atmosphere of the vinery should be dry, yet the border should be abundantly supplied with water, and when the border is wholly or in part inside the house, a bright sunny day should be chosen on which to water it, and then, with all the ventilators standing wide open and a brisk heat maintained in the hot-water pipes for the rest of the day, much of the moisture arising from the border will be carried off before nightfall, and there will be a very small chance of any of the berries bursting. As a precaution, the water-tanks in vineries containing varieties likely to crack, should be drained of the water contained in them, or covered with a close-fitting lid. In damp or rainy weather the external air should be excluded as far as possible, and artificial heat made use of. Manures containing phosphates are aids to growth in the Vine at all seasons, but they are of greatest use when the berries are swelling finally. At this stage, and onwards till the leaves fall, Vine borders should be freely dusted over with some of the several kinds of phosphatic manures before affording water.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

THE COOL AND INTERMEDIATE ORCHIDS.—In the division in which the above Orchids are grown, a close atmosphere ought to be avoided, the old method of closing early in the afternoon with sun heat being now, generally speaking, discarded where these species of Orchids are well-grown. It should be remembered that these plants mostly grow at a great elevation, where the atmosphere, although

heavily charged with moisture, is breezy and buoyant, conditions which the grower should endeavour to imitate. As to the temperature at which the air in these two structures at the present season may be maintained, the differences need be but trifling, and it is not advisable to try to lay down rules in this respect that would meet all cases, for the temperature will vary according to that prevailing out-of-doors at the season. What we have to aim at is, to keep the cool-house as cool as possible, and should the weather be very hot, the intermediate-house also. I believe cool Orchids are sometimes injured by great heat, and by excessive cold, and that the difference between the winter and summer temperatures in their native country is not so great as some persons suppose. Masdevallias seem to like an even temperature the year round, as do some of the Epidendrums, viz., E. Frederici Guilielmi and E. rhizophorum, which will grow well in the intermediate-house during the winter, and in the cool-house in the summer, and many others could be named that flourish under similar treatment, as Anguloa, Lycaste, and Cymbidium. Generally speaking, the cool-house should, at the present time of the year, register from 55° to 60° by night, and from 60° to 65° by day, and the intermediate-house 60° by night, and 70° by day; of course, in warm weather, both houses are warmer than this, but with shading, ventilation, and damping down, they may be made to feel cool and refreshing on entering them from the outside; the top and bottom ventilators should be open more or less night and day, according to the state of the weather.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

GENERAL OPERATIONS.—With the genial rains that have prevailed over most parts of the country, work in the kitchen garden will be carried out more readily than has been the case in the previous weeks, and the ground will be, if in a clean condition, fit to receive the winter crops. Crops of Cabbage and Cauliflowers past their best should be removed to make space for Spinach, Turnips, Kohl Rabi, Celery, Horn Carrots, &c. If the land in which the Winter Spinach will be sown is in need of special preparation, or is infested by the grub, or with wire-worm, the present is a good time to set about its preparation. It may receive plenty of soot and wood-ashes in place of the usual animal manures, and if the land is full of wire-worm, a dressing of finely broken gas-lime left on the surface for a few days before digging in will do good. During the interval before sowing the land, frequently fork it over lightly, or harrow it so as to expose it to the birds to search over for grubs, &c.

BROCCOLI may be planted out as fast as land is cleared of other vegetables.

ASPARAGUS.—The cutting from the beds should now cease, and the beds should have a good dressing of fish-manure or common salt and liquid-manure applied. The salt had better be strewn on the beds in rainy weather, and means taken to prevent the young growing shoots from damage by wind.

TURNIPS.—If these roots are required in large quantities, a good breadth should be sown early in the present month, and again towards the end, the later sowings keeping sometimes better than the first one. In growing Turnips for winter use, much depends on the condition of the soil and the nature of the climate. The land should be rich, and deeply-dug for some recent crop—not necessarily for the Turnip crop, and it should be forked over slightly, and the seed sown in drills before the surface gets dry. If sifted wood-ashes, burnt earth, fine leaf-mould, or even potting-bench siftings, be strewn along the drills before closing them, quick germination and rapid growth will follow, soon taking the plants through that stage when the Turnip-fly is so very apt to attack them. For early sowing there is no better variety than Veitch's Red Globe, it being solid in the flesh, and a good keeper. For the later sowing, Golden Ball or Petrowski are excellent, both being of good quality, and keeping longer than any white-fleshed variety.

COLEWORTS.—An abundant sowing should be made at this date, which will be found useful in the autumn and early winter in furnishing Greens, and as the plants can be planted at 1½ feet apart, a great number occupy but a small space. The seed should be sown broadcast, and thinly. The Rosette Colewort may be sown now for early cutting, and at a later date the Hardy Green, for spring use.

FRENCH BEANS.—A sowing may now be made where the plants can be protected by means of

frames. A west border is a good place for them. For late use, Ne Plus Ultra is a good variety, and the seed requires plenty of moisture in the soil to cause it to germinate freely.

RUNNER BEANS suffer in hot weather from lack of moisture in the soil, the top-growth throwing off the rain, no matter how heavy it may be, and whenever practicable a good soaking of the soil with water or liquid-manure should be afforded the rows. Late-sown plants should be topped at 6 feet from the ground.

PEAS.—A sowing may be made in trenches as for Celery if the soil be light; in heavy soils the trench need be quite shallow, but an open position should always be selected for this crop, and 6 or 8 feet space left between the rows. Veitch's Success last year was our last crop pea, and it was found to be excellent. Sturdy is another fine late pea, and useful in places where space is a consideration, it being dwarf.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Slidisbury.

HERBACEOUS BORDERS.—Pyrethrum, Pæony, Aquilegia, Hemerocallis, Delphinium, Betonica grandiflora, Lychnis violacea rubra, Tradescantia, Veronica, and other species, are now coming fully into flower. The tufts of Aubrietia Hendersoni and A. Leichtlini are very effective in our garden, and make a pleasing contrast to the pale blue flowers of Myosotis alpestris close by. The only attention required in this department during the next few weeks will be to keep the beds and borders clean, and the latter plants tied up neatly, but not formally, as occasion arises, and to remove decayed flowers and leaves at short intervals of time.

ROSES.—Beds and borders set apart for Roses should be heavily mulched, and repeatedly and copiously watered in the absence of heavy rains. These waterings, together with syringing the foliage and the renewal of the mulching when exhausted, will maintain the plants in vigorous growth, and be productive of large blooms. The spent blooms should be removed from the plants several times a week during the next month.

BRIAR STOCKS FOR BUDDING.—The shoots on the lower parts of the stem and some of those at the top should be removed, two or three of the strongest being sufficient to leave. Mulch the ground, if light, between the rows with half-rotted dung or tree-leaves, following this with a heavy watering, which will insure the bark running readily when budding has to be done about three weeks hence.

TRIMMING SHRUBS.—Hedges should now be trimmed, Yew and Box being clipped, and Holly, Sweet Bay, Portugal Laurel, Retinosporas, Laurel, Thuia, and Juniper should be kept in shape with the knife, simply shortening long shoots a little below the face of the hedge, so that the wounds will not show. Thus trimmed, there are no mutilated leaves or glaring wounds to mar the good effect of the hedge.

WATERING TREES AND SHRUBS.—Trees and shrubs which were transplanted late in the spring should be afforded a good watering at the roots once or twice a week, dry weather prevailing, especially those growing in light soil and a dry situation, otherwise growth will be poor.

RHODODENDRONS, AZALEAS, ETC.—Where these shrubs are growing in numbers, or singly in prepared soil turfed over, the grass between the plants should be cut at least once a fortnight, care being taken not to injure the plants in so doing.

GENERAL WORK.—Continue to pick off all the flowers that show on any of the bedding plants for another week, with the object of inducing the latter to make free growth; and with this object in view, stir the soil between the plants with a Dutch hoe, which operation, in addition to stimulating growth in the plants, will destroy weeds. Spread out and peg down the shoots of trailing plants, also those of straggling habit, viz., Verbenas, Petunias, Heliotropes, and Calceolaria amplexicaulis, to save them from injury by wind, as well as to get them to cover the soil in as short a time as possible. Put stakes to Dahlias and Hollyhocks, and do not tie them tightly, but allow space for growth. Hollyhock stems should be reduced to two in the case of strong established plants, and weaker plants to one. Mowing, cutting the edges of turf, brushing, weeding, and rolling the walks are the order of the day, and grass-mowing having probably got in arrears owing to the pressure involved in bedding-out, may now be got well in hand again.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

SATURDAY, JULY 9—Royal Botanic Society.

SHOWS.

SATURDAY, JULY 2 { National Rose Society's Show,
Crystal Palace.
TUESDAY, JULY 5 { Great Rose Show at Earl's Court;
Rose Shows at Gloucester, Sutton,
and Bagshot.
Croydon Horticultural and Rose,
Hitchin Rose, Enfield Horti-
cultural, Royal Botanic Society,
at Regent's Park, Evening Fête,
8 to 12; and Rose Show at Earl's
Court.
THURSDAY, JULY 7 { Bath Rose and Begonia Show.
Woodbridge Horticultural and
National Rose.
Lee Horticultural.
Norwich Horticultural.
Windsor and District Rose Show.
FRIDAY, JULY 8—Lee Horticultural.
SATURDAY, JULY 9—Reigate Rose Show.

SALES.

TUESDAY, JULY 5 { Established and Imported Orchids,
at Protheroe & Morris' Rooms.
FRIDAY, JULY 8 { Great Sale of Orchids, at Protheroe
& Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°·1.

The Acids of
Fruits.

WE know that many vegetable and fruit products are esteemed rather for their pleasant or refreshing taste, and for their anti-scorbutic properties than for any nutritive value which they may be assumed to possess. Yet even fruits of that character are especially valuable as additions to our daily diet, on account of the potash salts and mild vegetable acids they contribute to the blood. We learn from JOHNSON'S *Vegetable Food of the World* that the grateful acid of the Rhubarb stalk arises from the malic acid and binoxalate of potash which it contains. The acidity of the Lemon, Orange, and other species of the genus *Citrus* is caused by the abundance of citric acid which their juices contain; that of the Cherry, Plum, Peach, Apple, and Pear from the malic acid in their pulp; that of Gooseberries and Currants, black, white, and red, from a mixture of malic and citric acids; that of Grapes, from a mixture of malic and tartaric acids; that of the Mango, from citric acid and a very fugitive essential oil; that of the Tamarind, from a mixture of citric, malic, and tartaric acids; the flavour of Asparagus, from aspartic acid, found also in the root of the Marsh Mallow; and that of the Cucumber from a peculiar poisonous ingredient, called fungin, which is found in many species of fungi, and is the cause of the Cucumber being objectionable to some persons.

It will be observed that Rhubarb is the only product which contains binoxalate of potash in conjunction with an acid. It is this ingredient which renders Rhubarb so wholesome at the early commencement of the summer, though in certain cases, known to medical men, its use may be injurious.

The following table, compiled from some analyses by Professor BÉRARD, shows the per-

centage average chemical composition of five unripe fruits, and of eight ripe fruits, comprising Apples, Pears, Gooseberries, Grapes, Plums, Cherries, Apricots, and Peaches.

Percentage Average Composition of Fruits.

	Unripe.	Ripe.
Water...	85·7	78·7
Albuminoids ...	0·7	0·6
Sugar ...	4·0	12·9
Vegetable acids ...	1·5	1·3
Pectose and gum ...	4·3	3·7
Cellulose, &c. ...	3·8	2·8

The data thus given show that there is a considerable decrease in the watery particles of fruit as it approaches its full ripe character, resulting in a difference of 7 per cent., while the sugary constituents increase during maturation in a corresponding degree, rising from an average of 4 to nearly 13 per cent.

There is very little actual decrease in the percentage of acids from the green to the ripe stage of fruits, but the acidity becomes neutralised by the increase of sugar as the fruit approaches maturation.

Many persons know from experience how much more pleasant and agreeable fruit is when gathered and eaten direct from the tree. This is undoubtedly in great part due to the freshness and briskness of the vegetable acids contained in the fruit, which, when so gathered and eaten, have not time to change into any other substance. Stale fruit, on the other hand, is unpalatable from the very fact that it has lost this pungent and brisk taste.

Pectose forms the substance known as vegetable jelly, and it is to this constituent of fruits that jams owe their firmness. Cellulose is the fibrous part of fruits, and it is in this portion that we should find the largest proportion of mineral salts, potash, &c.

PAMPAS-GRASS IN A LOWESTOFT GARDEN.—

The Pampas-grass has long played a part in the decoration of the flower garden and pleasure ground, but it is seldom that we see the plants arranged in masses in rectangular beds or borders in the manner that is apparent in our engraving of a view in the garden of W. J. LARKIN, Esq., Holm View, Lowestoft (see fig. 3). The grass is here planted in conjunction with flowering herbaceous perennials and others, and forms, when in full beauty, an admirable foil to those. In the marine climate of Lowestoft, especially if sheltered from the sea wind, the plants will suffer less in winter than others at a distance from the coast.

LINNEAN SOCIETY.—On the occasion of the meeting of the above Society, on Thursday, June 16, Professor STEWART, President, in the chair, Mr. J. R. LEESON was admitted, and Messrs. T. COOKE, F. J. CLARKE, and J. MELLOR were elected Fellows of the Society. Mr. F. ENOCK exhibited some specimens of the Mustard beetle, and gave an account of its recent depredations as observed by himself. So numerous was it that, in walking down a single row of Mustard, a distance of 65 yards, he had captured with a butterfly net upwards of 15,000, as he subsequently ascertained, by counting a portion and weighing the remainder. The crop of Mustard thus affected he regarded as destroyed. Mr. GEORGE MURRAY exhibited and described the type of a new order of Algae, to which the name *Splachnidium rugosum* was given. Mr. H. B. GUPPY read a paper on "The Thames as an Agent in Plant Dispersal," in which several interesting facts were brought out, the observations being illustrated by specimens collected by the author, and a useful record given of the effects of exposure to sea water, and of freezing, upon the germinating power of seeds. Professor F.

OLIVER gave an abstract of observations made by Miss M. F. EWART on some abnormal developments of the flowers of *Cypripedium*, illustrated by effective diagrams in coloured chalk. The evening was brought to a close by an exhibition by Mr. CARUTHERS, with the aid of the oxy-hydrogen lantern, of some beautiful slides of sections of fossil plants. A second series, zoological, exhibited by the President, included several minute organisms, of extreme interest. This meeting brought the session of 1891-92 to a close.

ROYAL VISITORS TO MR. BULL'S ORCHID EXHIBITION.—Her Royal Highness the Duchess of EDINBURGH, with the Princesses MARIE and VICTORIA, accompanied by Prince FERDINAND of Roumania, visited Mr. WILLIAM BULL'S Orchid Exhibition, at 536, King's Road, Chelsea, on Monday, June 27.

THE GARDENERS' ORPHAN FUND.—The monthly meeting of the committee took place at the Hotel Windsor, on the 24th ult., when letters were read from Sir JULIAN GOLDSMID, Bt., President of the Fund, acknowledging the resolution of condolence on the death of Lady GOLDSMID, passed at the last meeting of the committee; and from Sir JAMES WHITEHEAD, Bart., in reply to the vote of thanks for presiding at the annual dinner. Special donations were announced, as follows: Mr. H. Herbst, Kew, £2 2s.; Proprietors of the Hôtel Métropole, £2 2s.; Mr. G. W. Cummins, The Grange Gardens, Carshalton, collecting box, £3 3s.; and Messrs. B. S. Williams & Son, Victoria Nurseries, Holloway, collecting box in the house of insectivorous plants, International Horticultural Exhibition, Earl's Court, 15s. 9d. The quarterly allowances to the orphan children upon the Fund, amounting to £159 5s., was ordered to be paid.

THE NATIONAL PINK SOCIETY: NORTHERN SECTION.—Owing to its being found necessary to change the date of the Rose exhibition at the Botanical Gardens, Old Trafford, from July 16 to July 22, the Northern Pink Show announced for the same date has been postponed to July 22 also. The cultivators of Pinks are not numerous enough to make a show of themselves, and, therefore, it is necessary to tack the show of these flowers on to some larger show of florists' flowers. So far as we are able to ascertain, the Pinks promise well all round. In the south the flowers are coming finely laced, the season appearing to suit them.

INTERNATIONAL ROSE SHOW AND FETE.—

A floral festival of an unusual kind has been organised by the Directors of the International Horticultural Exhibition for Tuesday and Wednesday next, when it is expected there will be displayed at Earl's Court a collection of Roses, Orchids, Begonias, and herbaceous plants such as has not previously been seen in London. Most of the best English Rose growers will be represented, and many Continental growers will also take part in the display. It will be "Roses, Roses, all all the way;" and if fine weather should favour the affair, a brilliant gathering both of flowers and people may be confidently looked for. But there will be much to attract besides Roses; Messrs. F. Sander & Co., of St. Albans, and other growers, will exhibit a collection of Orchids; and a display of table decorations is arranged for in the main building.

— We are informed by Messrs. WM. PAUL & SON, of Waltham Cross, that they will hold a Rose show at the International Horticultural Exhibition, commencing on Tuesday, July 5 next, and continuing until July 16.

DATES OF ROSE SHOWS.—In addition to the dates of fixtures previously notified in these pages, are Farnham, Wednesday, July 6; Ealing, Tunbridge Wells, on the Wednesday following; on Thursday, July 14, Harlestone; Chester National Rose Society's Show, on Saturday, July 16; Christleton on the Wednesday following; and Ulverston on Friday, July 22.

BOTANICAL MAGAZINE.—The plants figured in the June number are :—

Althæa ficifolia, best described as a single Hollyhock, with pale primrose-coloured flowers. Kew, t. 7237.

Eria marginata.—A Burmese species, described by Mr. Rolfe in our columns, 1889, i., p. 200. The sweet-scented flowers are produced from the sides of stalked pseudobulbs, each flower being flattish, star-shaped, with five lanceolate white segments, and a three-lobed lip, margined with red, t. 7238.

Senecio (Kleinia) Galpini.—An undershrub, with fleshy oblong leaves, and heads of orange flowers in

since they have been the subject of the gardeners' manipulations, have exhibited, as might have been anticipated, a remarkably sportive tendency. Very many such have passed through our hands, but never one quite like the present one, whilst Mr. Davis, who grows 150,000 or more annually, has never seen such a one.

LIQUORICE CULTURE.—The cultivation of liquorice is stated by the British Consul at Batoum to be considerably increasing. In his report to the Foreign Office on the trade of Batoum during the year 1891, he says more liquorice is exported every

hydraulic presses. Liquorice paste is being manufactured, but has not yet been exported from the Caucasus. About 4500 tons of dry root have been exported by the two factories, representing about 9000 tons of green root manipulated. The remainder exported was from a Greek firm. The number of hands employed by each factory varies from 50 to 300, according to the season, at wages varying from 8d. to 1s. 2d. per day; and at outside collecting stations some 300 more, the greater number being employed in autumn and spring. Nearly all the inhabitants of the district find employment in digging the root at seasons when there is no other work to do.



FIG. 3.—PAMPAS GRASS, IN MR. W. J. LARKIN'S GARDEN, HOLM VIEW, LOWESTOFT. (SEE P. 11)

terminal corymbs. It is a native of the Transvaal, and flowered at Kew, t. 7239.

Porana paniculata.—A tropical Indian creeper, with cordate acuminate leaves, and numerous small white Convolvulus-like flowers, in loose paniced cymes, t. 7240.

Rosa pomifera.—A Rose with handsome foliage, and still more handsome large fruits, figured in our columns, 1886, vol. i., p. 237, fig. 45. Sir Joseph Hooker sums up the botanical history of the species, which others refer to *R. villosa*, t. 7241.

LEAFY BEGONIA.—Mr. B. R. DAVIS, of Yeovil, who makes Begonias a specialty, sends us a male flower of a yellow variety, in which one of the sepals is developed in the shape of a perfect leaf. Begonias,

year from the Caucasus, and the export seems likely to increase, the quantity exported in 1891 being double that of the previous year. It is obtained chiefly in the district lying between Elizavetpol and Hadji Kabul, where it is brought by the natives to various depôts established for its reception by the different firms during the winter months, no difficulty being experienced in getting the quantity required. The price to the natives on the spot is about 25s. per ton for green root, the price varying according to the distance from the factory. The green root is reckoned to yield about 45 per cent. of dry. With the exception of a few tons, all the liquorice exported goes to America. Two liquorice factories, owned by Englishmen, are employed in collecting, drying, and pressing liquorice roots by

ASTER ALPINUS VAR. ALBUS.—On the occasion of a recent visit to the highly remarkable garden of the Rev. Chancellor SWAYNE at Salisbury, we could but note amid the host of choice plants there to be seen, the numerous plants of this pretty Composite. Chancellor SWAYNE seems to know how to make his plants, comparatively speaking, equal in size, a point of great importance in a rock garden, where one too often sees the triumph of might over right. The old walls of this charming garden were covered with *Erinus alpinus*, a charmingly decorative plant, which seeds itself freely here.

BEGONIA ROSEBUD.—Some flowers of the above novelty have been kindly sent to us by Messrs. CANNELL & SONS, Swanley, but it is only from his

letter that we were enabled to make out that they were the blossoms of tuberous Begonias, and not Balsams, Hollyhocks, or Camellias, so regularly double are they. The colour is soft rose-pink, and the diameter of the largest one $2\frac{1}{2}$ inches. We opine the "improvement" of the tuberous Begonia cannot go farther in this direction.

FLORAL FÊTE AT THE MANSION HOUSE.—A Floral Fête and Bazaar, in aid of the Royal Hospital for Women and Children, took place at the Mansion House on Friday the 24th ult., under most distinguished patronage. The chief display was in the Egyptian Hall, in the centre of which was the Lady MAYORESS's circular stand. The crush of visitors was such that it was quite impossible to obtain a general view, and it was only after much difficulty that the individual stalls could be reached. Amongst an abundance of the most exquisite flowers, we noticed some Roses from the Prince of Wales, Carnations from Lord Rothschild, Orchids from Messrs. Sander & Co., and Roses from Messrs. Turner and Mr. Frank Cant. It is with pleasure we are able to report such a complete success.

POISONOUS PROPERTIES IN THE GENUS TEMPLETONIA.—Baron von MUELLER writes:—"A fatal poisoning case has just been reported from the Darling River, through *T. egens*. A woman thinking that this leafless plant must have similar medicinal properties to that of the English Broom-bush, prepared an infusion of the *Templetonia*, one cupful of which produced death within an hour! Considering that this genus is in its affinities not so very remote from that of *Gastrolobium* and some other Australian simple-leaved leguminous shrubs, the discovery of lethal effects in *Templetonia* does not come very unexpectedly. As *T. retusa* is much cultivated in conservatories of Europe as an ornamental shrub, material exists also there for testing it as regards any deleterious properties; should such exist, then the poison principles might be isolated even in Europe, where now so many phytochemic laboratories exist with ample special appliances."

EFFECTS OF THE FROST.—Travellers by the Great Western Railway can witness abundant examples of the disastrous effects of the June frosts. In many cottage gardens lying in the Thames valley in Berkshire, the plantations of Potatoes are almost wholly destroyed; so are Scarlet Runners and Vegetable Marrows. The same can, unhappily, be seen in other parts of the country, and in Surrey and Kent, counties favoured to a large extent by climate, similar signs of the destructive effects of the frost can be noted. If only cottagers would take the trouble, as they are often recommended to do, to draw up the soil to their Potato-tops when cold nights at the end of May and early in June are imminent, crops might be saved; and it can be done with a small outlay of labour.

BULB CATALOGUE.—We have received an exceedingly full list of bulbs, corms, tubers, &c., from Messrs. DAMMAN & Co., of San Giovanni, Teduccio, Naples. The catalogue is well illustrated, and has the text in German and English given in parallel columns.

FLOWERS IN SEASON.—Canna William II. is a brilliant scarlet, withal, of a soft shade, and equally well adapted for pots or vases, or the sub-tropical bed. We remember seeing a very effective bed made with one of these fine new varieties of Canna and the dwarf-growing *Zinnia Haageana*. The former grew about $2\frac{1}{2}$ feet, and the latter, which formed the groundwork, was 9 inches high. Carnation George Fry is a fine thing, which some day everyone will make a point of possessing. The colour is bright crimson, and the form of the bloom is just a little bit irregular, that is, it needs dressing. Both of the above came from Messrs. J. LAING & SONS, Forest Hill, S.E.

FLORAL DECORATIONS IN THE DWELLING.—Indoor decorations with plants and flowers seem

to us to be getting greatly over-done, and we fear there will be a general revolt against the thing, on the score of its extravagant cost, and its glaring artificiality, which will, in the end, inflict damage to horticulture, as seen in the cultivation of beautiful plants. A plant or two of Indian Azalea, unrestrained by stick or tie; a *Franciscea*, a *négligé* Begonia tuberosa, with pendulous blooms by preference; a few Palms, with light, tremulous foliage; a *Dracæna*, either green or coloured; an *Acacia longifolia*; Camellias, especially the single or semi-double forms, in any colour; *Cantua dependens*, the perfumed *Magnolia fuscata*, a panful of *Achimenes* of the patens type, *Gesnera zebrina*, or a handsome *Cliveia miniata*; a few of these, or such as these, would give more real pleasure to their possessor, and add to the adornment of an apartment to a greater degree than the hundreds of "market plants" that are now so commonly employed by the florists.

REPORT ON FRUIT CROPS IN ENGLAND AND ON THE CONTINENT IN THE PRESENT SEASON.

—The following report, furnished by Messrs. W. N. WHITE & Co., Limited, Covent Garden, will be read with interest:—"In sending you our annual circular showing the results of our investigations into the fruit crops of England and the Continent for the season 1892, we must apologise for it being so late, for the following reasons: 1st, reports were so conflicting that we had to write for fuller information from various places; 2nd, the weather has been so changeable that we waited until we thought everything was safe; but even as late as last week we understand that damage has been done, there having been frost in many districts. In May it was thought that the crops of almost everything would be very good, but the tropical weather that prevailed towards the end of that month soon dispelled these hopes. Cherries alone are the one good crop of the year. Not only in England, but through France, Belgium, Holland, and Germany the crop is considered a full one everywhere. Gooseberries may be said to be one-third of a crop in England; a good half crop in Holland, and a fair crop in Belgium and Germany. France only grows sufficient for their home requirements. Black Currants are a very light crop in this country, not exceeding one-third. In France crops are also light. Holland has about half a crop; and the same may be estimated for Belgium and Germany. Red Currants on the other hand are reported a fair crop, not only in England, but in Holland, from which latter country we get very large supplies; the general report from there is that the crop is good. Plums which at one time looked as if we should again have a fair crop in England, notwithstanding last year's large supply, have disappointed growers considerably; in some districts there are scarcely any. We do not think there will be more than a quarter crop in England, and the same in Holland and Germany, while in some districts in France there are scarcely any, but from the South of France the crop is reported to be fairly good. Greengages are a fair crop in the South of France, but there are very few in the north, and in the champagne district, from whence large supplies come forward to this country, we hear there is hardly a single fruit to be seen. The crop is very light in Germany and Holland, and not more than one-third of a crop in Belgium. Pears.—Crops are very bad throughout England. In many districts there are scarcely any. The same remarks apply to Germany, Belgium, and Holland. France also has a very poor crop. Apples at first promised to be a fair crop in England, but in some districts they are now quoted an entire failure. Where growers have washed their trees, we believe a certain moiety of the crop has been saved, but where the trees have not been washed, in some districts there are scarcely any fruit. Germany is quoted as a very small crop, but through France, Belgium, and Holland, the crop is fairly good. Raspberries.—The continual night frosts of the spring cut the canes severely, and this, followed by the dry weather in May, has left the plants very small, and the crop is certain to be a very light one,

under one half. The same remarks apply to Holland—very few Raspberries come to this country except those from Holland. Strawberries were also so much affected by the frosts in the spring, that in no district have they made their usual growth; the great complaint is the lack of foliage, and the crop is likely to be a very short one—one-third; and, owing to the scarcity of foliage, should we get warm weather, the crop will not last more than fourteen days. Nuts are reported to have suffered in some districts with the maggot. Walnuts are fairly plentiful in Belgium and Holland, but are a light crop in the south of France. Chestnuts are quoted a good half crop.

PLANT PORTRAITS.

CHRYSANTHEMUM: 1, LOUIS BÖHMER; 2, H. BALLANTINE. *Gartenflora*, t. 1370.

CHRYSANTHEMUM KAISERIN AUGUSTE VICTORIA. Semi-double pale primrose, described as "Ein sport des Mary Anderson." *Gartenflora*, t. 1371.

MICROMELES ALNIFOLIA, Kochne, *Gartenflora*, June, 1892, p. 284.

RODRIGUESIA CALOPLECTRON, *Gardeners' Chronicle*, 1883, p. 368; *Gartenflora*, t. 1372.

MEGACARPÆA POLYANDRA.

For the opportunity of figuring this strange Crucifer, we are indebted to Mr. Burbidge, under whose charge the plant flowered in the Trinity College garden, Dublin (see p. 17). Before the present day, when the microscopical anatomy of plants almost exclusively absorbs the attention of the student, this was a plant to excite strong interest. A Crucifer without the habitual four long and two short stamens, but with a series of a dozen or twenty, was a thing to marvel at and excite lively commotion among those inclined to morphological studies, while those of a genealogical turn of mind saw in it some far-off connection of the Poppies. The seed-vessel also is remarkable, but more for its size than any other peculiarity, for structurally it is not very different from *Alyssum Shepherd's Purse* and many others. As will be seen from the illustration, one-half only of the seed vessel is here developed, the remaining portion having been arrested in its growth.

NOTICES OF BOOKS.

THE APPLICATION OF ARTIFICIAL MANURES TO FRUIT AND VEGETABLE GROWING, AND IN FLOWER AND GARDEN CULTIVATION.

A VERY useful and practical pamphlet under the above title has just issued from the pen of Professor P. WAGNER, Director of the Agricultural Research Station, Darmstadt, which has been translated by Mr. D. A. LOUIS, F.I.C. The value of the work is much enhanced by fourteen autotype photographic illustrations of plant cultivation, comprising Oats, Barley, Tobacco, Potatoes, Hemp, Beets, Carrots, Maize, Beans, Peas, Coleus, Geraniums, and Fuchsias.

The author says, no one will deny the great progress that has been made in improving the species of fruits, in the treatment of fruit trees, in searching out new kinds of vegetables of higher value, in discovering new sorts of flowers which are remarkable for beauty of colour, graceful and elegant form, and plentiful blossom. Every establishment devoted to the cultivation of flowers distinguishes itself by developments in this direction. But the improvement is only in one direction.

Whilst the farmer knows how much phosphoric acid, how much potash, and how much nitrogen any of his crops require; also in what form they should be applied, and the way to use the manure to the best effect, so as to get the highest possible results; in books on horticulture an astonishing ignorance is displayed on all these topics, and in practice it is no different. Gardens and vegetable-beds are manured generally without any consideration at all. They are dressed with large quantities of stable-

manure, which frequently costs a great deal of money, and, as a rule, contains but little plant-sustaining constituents; no thought being given to the waste of certain ingredients, which must necessarily ensue from an exclusive manuring with farm-yard manure, and no consideration exercised as to how very much more useful this manure could be rendered by an admixture of artificial fertilisers. Plants are dosed with liquid manure, domestic drainage, compost, &c., and it is not known to what a great extent

The author draws attention to the fact that in gardens, especially for extensive vegetable cultivation, twice or three times as much manure is required per acre as is demanded for field cultivation.

The production of garden soil is far greater than that of the field, whereas the farmer must, as a rule, be contented with one harvest in the year; the market gardener endeavours to extract two or even three crops from the soil in the course of a year. By heavy manuring, by great expenditure of labour, by

small number of different kinds of plants. We can easily control this number, and without much trouble can try with each of them, whether the accessory constituents of the manures of commerce act injuriously on them or not. In horticulture, on the other hand, this would present far greater difficulties. In this case we have to deal with a much greater number of species and genera, and we cannot carry out experiments with each of them; moreover, garden plants, various vegetables, the finer kinds of fruits, berries, flowers, &c., are, as a rule, more delicate and sensitive than field plants. It is not improbable that the accumulations of salts, of sulphuric and hydrochloric acid in the soil, injure just those qualities which give the product its particular value.

Double Superphosphate.—Double superphosphate is free from sulphuric acid, and highly concentrated; it contains almost three times as much phosphoric acid as ordinary 16 per cent. superphosphate. This is recommended to ensure a very rapid and vigorous early development of plants. For with Vines, fruit trees, berry-bearing shrubs, &c., a great deal depends upon their producing leaves rapidly and abundantly in the spring, also upon the blossoms appearing at the right time, upon the fructification ensuing vigorously, inasmuch as the more completely all these phenomena take place the more certain are the prospects of a harvest satisfactory both for quantity and quality. In the case of kitchen plants and all seedlings, it is also of great advantage to make these develop rapidly and vigorously, in order that they may recover as soon as possible from the ravages made upon them by insects, frosts, and bad weather, and that they may elaborate as quickly as possible a widely-distributed and deeply penetrating network of vigorous roots, and in this way acquire so much vital energy, and so much power of resistance, that they can encounter with successful opposition all inimical attacks.

Phosphate of Potash.—It is generally known that plants do not live on food consisting of single nutritive substances, but on food compounded of different nutritive substances. If potash is wanting in the soil, then the phosphoric acid cannot act; or if the nitrogen is not present in sufficient quantity, then neither the potash nor the phosphoric acid become active. Each different plant has to be supplied, according to its requirements, with the necessary quantity of readily-assimilable potash and easily available nitrogen.

Vineries.—The Vine affects a soil very rich in food-material; it apparently possesses a comparatively feeble power either for the appropriation of slightly soluble soil-nutrients, or for utilising a soil solution poor in food materials. It appears advantageous for the vitality and bearing capacity of the Vine to have even the lower layers of the soil abundantly supplied with soluble nutrients, so that the roots penetrating into these layers can be well nourished, and made to develop vigorously. But a plentiful supply of plant-food can only sink into the lower layers when the surface is supplied with a great excess, and when the quantity removed by the harvest is replaced annually. In accordance with the practical experience of Vine-cultivators, to bring a vineyard to a healthy, vigorous, and fruitful condition, and to retain it in this condition in order to obtain from it the greatest possible profit, one must set out with an application of potash, phosphoric acid, and nitrogen far above that of the usual farm-yard manure dressing.

Orchards.—Most fruit-trees are badly nourished; they, consequently, not only yield badly, but at the same time suffer from adventitious dryness, from sudden changes of weather, from insects, and all sorts of sicknesses, far more than they would do were they better cared for. The more vigorously a tree is nourished, the more active are its organs in presenting a stronger resistance to all disturbing influences, and the greater is its power to remedy any injury that has happened to it.

Pot-cultivation.—Pot-plants starve when they are not manured. The quantity of earth supplied, even when the pot is comparatively large,



FIG. 4.—MEGACARPEA POLYANDRA. SEED VESSELS OF THE NATURAL SIZE; FLOWERS AND POLLEN ENLARGED. (SEE P. 16)

the use of phosphates could improve the yield and the quality of fruit, and the beauty of flowers, &c. Plants are set in pots, in garden-soil, and nobody realises how plants starve in such a small quantity of soil; how they sicken; how they fall victims to fungi; how they suffer from rotting roots, because they starve for want of nourishment.

It is impossible to say how much more easily and conveniently, and how much more successfully, and with what greater financial advantage, vegetable gardening, garden cultivation, flower-raising and growing, could be conducted, if a rational system of plant-sustaining were introduced.

artificial watering, by concurrent cultivations, and suitable sequences of plants, the gardener induces such a high production, that twice, thrice, or even four times as much phosphoric acid, nitrogen, and potash are converted into harvest material from his soil than is possible in the cultivation of farm crops.

Manuring and plant production are immeasurably heavier in vegetable growing and gardening than in farming. With the heavier manuring, the accessory constituents of certain manures accumulate to such an extent, as to engender the fear of a deleterious action in the development of vegetation.

In agriculture we have to deal with a comparatively

offers far too little space for the roots to spread, and the amount of soluble food-material in the soil, even when the richest hotbed soil is employed, is far too small to induce the plant to develop.

Healthy, vigorous, richly-blooming plants are not in the least difficult to obtain, so soon as a man has disentangled himself from the erroneous idea that pot-plants are only sensitive to thirst, and only want water, and always more water to drink, but never in any way suffer from hunger. It is just pot-plants which must be plentifully and carefully nourished, in order that they may better overcome the comparatively unfavourable circumstances under which they are placed.

Chamber-plants and greenhouse-plants live, in fact, in captivity. The open air, the undiminished light, the direct sunshine, the dew, the rain, the morning atmosphere, the broad and deep extent of soil, the good aëration of the soil, the even distribution of the soil-moisture—of all these the plant living in captivity is deprived, and when, in addition to this, it is allowed to starve, then much cannot come from its development.

We must leave the subject here, but recommend a careful perusal of the forty-six pages of most useful and readable material. *J. J. Willis, Harpenden.*

EVERYBODY'S POCKET CYCLOPÆDIA. (Saxon & Co.)

THIS little book is certainly a most wonderful epitome of general information, and the tenth edition contains even more than did its predecessors, being furnished with much new matter, and various maps. The full index is also an improvement, and the whole is a most handy volume for the pocket or the library table. The cost is—sixpence! Every gardener will find it useful.

FOREIGN CORRESPONDENCE.

CALIFORNIA AS A HOME.

I DID not mind when my article in the *Gardeners' Chronicle* of February 20 was answered in the way Mr. Carter, of Cheltenham, wrote (March 5), as his words recorded an exceptional case. But I am in the receipt of letters relating to that subject, informing me that my reliability is seriously questioned in consequence, I am obliged to ask for a little space in this journal, much as I hate to make a universal paper like this, in which every reader over the whole globe looks for truthfulness and reliable information, a place for more or less personal controversy. Does any reader believe that 1 acre of land is worth 100 dols. when the product of it has to be hauled "from 10 to 20 miles, as the case may be?" And that in a country where the population is so thin that millions of acres are for sale on more than cheap terms just for the very sake of attracting emigrants to settle up the country? And if it was worth 100 dols. per acre, would Grapes be the proper product to put out, if they had to be hauled 10 to 20 miles? I live here 19½ miles away from the railroad, and it would be an impossibility to haul Grapes over roads as rough as mountain roads are, anything like such a distance. The consequence is, that Grapes are worth 18 to 20 dol. per ton. I heard considerable complaint from below, when three years ago Grapes were worth but 8 dols., and that in consequence of a production so plentiful and abundant that the vineries could not buy them, having the product of previous years still on hand. There are Grapes grown everywhere which are actually not worth picking on account of being grown on too cold a hillside, or because they are a kind not fit for wine. Such must have been the case when Mr. Carter was rolling his 20 miles, and was offered 5 dols. Surely that is absurd. If Mr. Carter had to work his vineyard for five years before realising a crop he was one whole year behind time. And if locusts happened to appear one year, as they will sometimes in California, there was no reason to be permanently discouraged. As to "other causes which spoil his

crop," I challenge Mr. Carter to name one before engaging in commonplaces. When I mentioned "that Grapes would not ripen in San Francisco," I did so to show the great variability of the climate, and nobody could take it as meaning that the hills of our city were covered with Vines. Mr. Carter "never could get more than about 1 cent per lb. for Peaches." I will speak by figures. At 20 feet distance the acre will contain 108 trees. They bear the third year, the second if you let them. The fourth they average easily 50 lb. to the tree, or 50 dols. to the acre at Mr. Carter's figure. Is that not enough return on an outlay of 100 dols. (which you are never asked unless in localities too favourable to be sold for fruit growing, and is kept for real estate speculation)?

If the reader should be interested enough to refer to both our articles, he will never find that I said "We have no rain from one December until the other." Our rains begin in October, and continue more or less to the middle of May. Mr. Carter knows better, if ever he was in California.

I never yet heard of taxes averaging 3 dols. in the hundred. They may reach 2 dols., provided the county is making extraordinary improvements—hospitals, bridges, &c. In such cases, everybody pays his dues. We surely do not need the sympathy of our readers when Mr. Carter tried to make out that our wives might be fortunate enough to have brooches and earrings to be assessed for. We do better than that, though we are not able to pay 100 dols. per acre for hill land. Mr. Carter talks about hundreds of acres. Let me say, he only paid for 200—that would be 20,000 dols., or £4000. Every bank in this our blessed California pays 5½ per cent. per annum. Mr. Carter would have done better if he had put his money in a bank, that other people might have had a chance to work with it, and spend the rest of his days on the £1 of interest we gladly would have given him for nearly every day in the year.

My first article was written out of mere interest for the thousand-and-one gardeners in poor positions in the old country. I told them in the purest disinterestedness that I had found the "Golden West," and that they might do likewise if they chose to. But I warned them not to engage in anything without knowing what they were about. *Geo. Hansen.*

HOME CORRESPONDENCE.

LARCH DISEASE.—Mr. H. J. Elwes, p. 815, *Gardeners' Chronicle* for June 25, tells us that "some of the largest, finest, and healthiest Larch in England, about a hundred years old, are now growing on a very thin calcareous soil, not chalk, but oolitic limestone," and as this appears to be a very exceptional case, and as the term calcareous, as applied to soils, is a very vague one, and apt to lead to confusion, Mr. Elwes would confer a favour on other planters as well as myself if he would kindly state the percentage of lime which his soil contains. *J. B. Webster, Planter and Wood Surveyor, Fairview, Stangmore, Dungenannon.*

— I agree with Mr. Elwes in thinking that the injury to Mr. Wilson's plantations did not arise from their being planted upon a chalk sub-soil. I have planted Larch on thin soil upon chalk extensively, and have no reason to think that they will not grow well upon chalk. I have seen young Larch injured by the fungus quite as much on various other soils as on chalk. Mr. Elwes refers to the *Coccus laricis*. I have often seen young Larch not healthy, apparently from other causes, attacked first by the *Coccus*, succeeded by patches of fungus, the trees at last dying. The cause of Mr. Wilson's Larch dying was, I should think, probably in the first instance, the severe frost of May 18, 1892, which made the trees unhealthy, and liable to attacks from disease. I remember a similar frost many years ago destroying many acres of Larch plantation in the neighbourhood of Helmsley in a similar manner. The question of the comparative power of Larch raised from native and foreign seed to resist cold and disease is an important one, and I should like to have the opinion of growers, especially in Scotland, as to their experience thereon. I think that some

of them are in favour of native-grown seed, but any evidence of the results of actual trials would be very valuable. *C. W. Strickland, Hildenley, Malton, Yorkshire.*

DEW, AND ITS ACTION ON PLANTS.—Although it may be a fact that the beneficial action of dew, in itself, has been over-estimated, yet the statement made by Mr. J. Matthewman (in an article bearing the above title in your issue of June 11), to the effect that "the generally-accepted theory of the formation of dew has been proved to be incorrect," is not likely to receive much credence unless some sort of evidence is given in its support. It is rather a pity that the writer of the article in question does not mention a few at any rate of the experiments upon the results of which Professor Wollny bases his "weighty" arguments, for the question is one of some practical importance to gardeners. The one solitary instance in which Mr. Matthewman makes any attempt to support his statement by reference to experimental fact, is that where he quotes the observation of Wollny that in a certain field "the dew was sometimes much heavier in one place than in another;" but no one possessing the slenderest knowledge of elementary physics, can therefrom draw the cock-sure conclusion that "the quantity of dew deposited depends upon the moisture of the earth." In the absence of serious argument, the refutation of Professor Wollny's new-fangled doctrine is, of course, out of the question; and until the generally-accepted theory has been proved to be untenable, I, for one, shall continue to hold that the poets are right in the "supposition" that has provided them "with many beautiful comparisons." *C. W. Herbert Greaves, Bournemouth.*

— I do not like Professor Wollny's theory of dew and the oozing out process at all (vol. xi., p. 753). I had long since come to the conclusion that its formation depended on the volume of moisture in suspension in the atmosphere, the temperature of this, and the subjects exposed to it. Plants are not the only objects that receive dewy deposits, for it may be seen on iron rails, hard-surfaced stone copings, painted wood and glass, or any other object that becomes sufficiently cooled, and is comparatively non-absorbent. Surely none of these can abstract the moisture from the earth, and if the professor has proved "that dew is not, as is generally supposed, formed by condensation taking place in the atmosphere immediately over the plant," perhaps he or Mr. Matthewman, who has trotted him out, will explain the presence of moisture on the substances referred to, and, indeed, even on fabrics, which the professor can verify if he thinks fit to spread his coat on a table or a hedge some dewy night and leave it there until morning; he will find it so bedewed that it would be risky to wear it without first exposing it to heat to dry. Why may not plants be the recipients of similar deposit? I concede that lack of moisture in the soil will materially lessen the dew deposit, and I notice that pot-plants in our glass-houses when already gorged with moisture exhibit moisture on their surface sooner and more copiously than those comparatively dry at the roots, or bordering on flabbiness; but I always credited the absorbing capacity of the leaves with the difference; and I have entertained the idea that the leaves of a plant replete with moisture are cooler than those that are dry and flaccid; and if this is so, it will account for the sparsely dewy deposit on the latter, for it is certain that the temperature of the object regulates the quantity deposited. Gardeners are familiar with condensed moisture or dew (I must have it this way) on Grapes in the morning, towards autumn-time, when there is no trace of it on the foliage. Now, if we accept the oozing-out theory, one would expect to see the moisture on the porous leaves first. Here, again, I am led to believe that the berries are so much colder than the foliage; hence, the copious condensation. The same thing would happen if a sheet of metal or a roofing-slate were laid by the side of the professor's coat as suggested. As to the value and the effect of dew, I will not say more now than that gardeners lay as much stress on the importance of an atmosphere holding in suspension a certain amount of moisture as they do on the wetness of the soil. *W. P. R.*

SAXIFRAGA MUSCOIDES ATRO-PURPUREA.—I have little doubt but that the plant cited at p. 734 in the last volume of the *Gardeners' Chronicle* as *S. m. rubra* is that which is generally known under the name given above. It is a neat and compact plant, producing quite a mass of its flowers in spring. Your correspondent, "E. M.," speaks of

it as one for a shallow soil; but if the soil be very thin, the plant is liable in warm, dry summers to be stunted in growth, and the flowers few the following spring. To get the maximum number of flowers from the plant, it should be broken up once in two years, in the months of September or October, and planted over a large space of dug ground, a few inches apart; and by the arrival of spring these bits will have nearly met. Where left alone for a longer period, it is liable to get drawn in the centre, and deterioration set in. It is an excellent plant for planting in crevices of rockwork, or for forming a carpet on miniature rocky ravines, and in other similar spots. *J.*

FRUIT CROPS IN KENT.—I am afraid the fruit crops will suffer very much from the fogs at night, and the bitter east wind which is now prevailing; though I believe we are favoured just here with the Cherry crops, but they have changed within these few days. *C., Sittingbourne.*

SAXIFRAGA ARCTIOIDES PRIMULINA.—This has been one of the most charming of all the Saxifrages this spring, and even now the last few of its flowers are only on the wane, a fact accounted for, perhaps, by the situation, which is somewhat shaded till about 3 p.m. daily. Notwithstanding this, it thrives, is in the best of health, and flowers with its usual freedom year by year. Among the rarer forms of the crusted section it is a veritable gem, one which has never been anything but rare, and one which will long remain a scarce plant. In its very slow growth the plant is a match for *S. diapiensoides*, *squarrosa*, *Tombeana*, and such like; but in its flowering it surpasses, in my opinion, all these by the daintiness of its flowers of clear primrose-yellow, so profusely borne on the slender stalks of only 3 or 4 inches high. It seems to thrive well in loamy soil, to which may be added with advantage some sharp grit, old mortar rubbish, and charcoal. My specimen I have grown for upwards of five years, and it is now no more across than a florin, half of which growth has been made with me. It is one of the legacies left us, I believe, by the late Mr. J. Atkins, of Painswick, and a charming plant when in full flower. *J.*

STRAWBERRIES.—If we judge by the large quantity of Strawberries now in the market, and offered so cheaply in shops and on barrows in every direction, it seems evident that in spite of some fears to the contrary there is a good crop generally after all. The very dry weather which prevailed during the spring, and the numerous white frosts which so generally prevailed during the blooming time, very naturally induced fears that the crop would suffer; so far, however, there has been little to complain of. What those who like Strawberries and are necessarily dependent upon shops or markets for their supplies, have to complain of, is the exceeding lack of quality found in the fruit they can purchase—why is that so? It is because all the largest-fruited varieties have the least flavour. Some have none whatever; and market growers, because these inferior varieties produce the largest fruits and heaviest crops, grow these only, whilst superior varieties that it would be real pleasure to consume, are not to be had. Strawberry raisers are somewhat to blame for this, because they have put so many of these large showy fruited varieties into commerce, and have given to us very few that have flavour. Mr. Laxton's last seedling, *Royal Sovereign* (see fig. 5, p. 21), is perhaps, the best flavoured form that prolific raiser has yet produced, and it would seem as if it deserved wide cultivation. But then it is not at all of the dimensions of Noble, or James Veitch, or Waterloo, or Sir Joseph Paxton, and is hardly likely to become a favoured market variety. What a pity it is that we cannot obtain good flavour in these large-fruited sorts; but the combination seems to be an impossibility. In reality we have few varieties that are esteemed worthy of wide cultivation, which have marked flavour. The British Queen type can be well grown only by the few, they are failures to the many, and out of 100 so-called forms in commerce we have none that come near to British Queen. With such an exceeding number of fine-fruited, free-cropping Strawberries in cultivation now, surely we can afford henceforth to certificate none which do not give high flavour with other merits. *A. D.*

PROFITABLE FRUIT GROWING.—The recent letter of "Pomum" has put the above matter in its very brightest light. The prospect held out by him to the small fruit grower is highly seducing. "D. T. F.," in your issue of June 4, has taken some

of the gilt off the gingerbread, and his remarks *apropos* of soil and site are well to the point. If it is sought to prove that "small holders" may secure considerable profits by growing fruit for sale in open market, the delusion should be dispelled. I believe it has never been contemplated under the Small Holdings Act that landlords should be compelled to part with the best sites for fruit-growing which they possess, and the compulsory clauses, such as they were, have now been altogether rejected. The advantages of site, and a soil prepared through many long and careful years, are all on the side of the landlord, and he, as a rule, is a competitor with the tenant. Two days ago I was in a magnificent garden, where every fruit and vegetable was grown to superabundance, and in perfection. The garden was part of a fine old estate, rented for the time to a very wealthy man—a retired bootmaker. The gardener told me that nearly all the produce went to market, and when I inquired what prices he got for some things, he said, "Oh, we take what price is offered." The moral is plain. Against such as these, the small holder cannot possibly compete. He can never have capital sufficient to bring new ground into the required state of perfection. Let him be content to acquire just sufficient ground to grow for his own use, but do not attempt to persuade him that he can grow profitably for the market. The result of passing a compulsory clause would, of course, be to furnish that full justification to the landowner, if any were needed, for pressing his competition with the small holders to the furthest limits, so that the certain result, in any case, is the failure of the latter. These and other little points should, I think, be carefully laid before intending occupiers of small holdings. Nothing can be said in disparagement of the landlords; they are completely justified in growing and selling what they like; nay, more, they are in duty bound to wring from the soil every atom of life which it can produce, and having done this, to offer it as food for the people. *Edward Nash, Captain, late R.A., F.R.H.S., Tatsfield, Westerham.*

SELLING ROSE BLOOMS AT EXHIBITIONS.—I heartily sympathise with Mr. Findlay in his troubles at the Manchester Rose shows. It seems to be the practice at these exhibitions for exhibitors' assistants to push the sale of spare blooms, and the blooms generally after the exhibition is closed. It is an objectionable practice, and Mr. Findlay's complaint comes in good time. At the Moseley Rose Show, of which I am the manager, we desire to make an appeal to the exhibitors to stop the practice, and hand over to us the staged blooms at the end of the day; also any spare blooms, to be sold by ladies who will take the matter in hand, for the benefit of our children's hospital and the Gardeners' Orphan Fund. It is carrying out a long-cherished idea that flower shows should do more for charity than is done, and we shall try the experiment at Moseley, and have orphan fund collecting boxes as well. *W. D.*

COAL-TAR AS A SAFE-GUARD TO THE BARK OF YOUNG TREES FROM CATTLE AND OTHER ANIMALS.—There is no doubt that coal-tar smeared on the bark of young trees prevents damage from cattle, and sticks that have been smeared with it and stuck into mole-runs will drive the moles away. I am told it is also effectual in ridding places of rats and mice, if placed in spots frequented by these vermin; at the same time, I think it would have been well if Mr. Dyer (see your report of Mr. Dyer's very interesting and instructive lecture at the Drill Hall, on June 21, vol. ix., p. 816) had issued a caution along with his recommendation as to the use of this article. Though no case of damage from it has come under my own immediate observation, I have more than once heard of young trees having been destroyed by too thick or heavy an application to their bark. A very little suffices to keep the animals off—just a thin smear on those parts within the reach of horses, cattle, sheep, hares, and rabbits; it adheres and retains its efficiency for a long time. Though I have often used it, I have always been careful not to apply it too thickly—at least, to young trees. Very young trees, fruit trees, osiers, &c., frequently receive great damage from rabbits and hares, and for very young trees—I mean of one or two years' growth—unmixed coal-tar is, I think, quite unsuited, and would take too long to apply. I can recommend as perfectly safe and effectual in protecting tender young trees from ground game, the following, and I believe it is equally good against animals of a larger kind:—Mix clay and stable or farm-yard manure into a paste, a small quantity of soot may also be added, and just flavour the mixture with a little paraffin

(petroleum) oil or coal-tar; either or both of these will do no harm, but a very little of them suffices. If stable or farmyard drainings are not to be had, slop-water from the dwelling-house is almost if not quite as good. Of course, the materials should be thoroughly mixed, and the consistence should be such that the smear can be conveniently used. If "thin," it may be expeditiously put on with a common whitewash brush; or an old paint brush, or a wisp of old sacking, if "thick." I know of no better mixture than the above for the parts of Apple trees affected by American blight. If the mixture is made "strong," care should be taken to avoid touching the foliage with it. If smearing the foliage cannot be avoided, the mixture should be made somewhat weaker with water. *J. E. Ewing, Havant.*

A POPPY AMONGST ANTS.—Can anyone explain the reason for this Latin proverb, of which I cannot test the truth here, where ants are scarce? In the "Trinummus"—one of the Westminster Plays—of Plautus, a spendthrift's money is said to have been squandered amongst the purveyors of luxuries, and "quickly finished, like a Poppy amongst ants." *C. W. Dod, Edge Hall, Malpas.*

A PRETTY COMBINATION.—On visiting the seat of P. Ralli, Esq., Ashted Park, Epsom, the gardens of which are well managed by Mr. G. Hunt, I observed on the back wall of one of the plant-houses *Ficus repens*, on which was a plant of *Clerodendron Balfourianum*, and flowering magnificently. The dark foliage of the *Ficus* threw into effective relief the large panicles of scarlet and white flowers of this well-known variety of *Clerodendron*. *B.*

RHODODENDRON FALCONERI.—On p. 695, vol. ix., a correspondent at Ipswich, describes the flower of this as "shaded lilac," and mentions that it has flowered with him in the open air for the first time. A year or two ago your columns contained a description of a specimen in flower in the open air at Appin, Argyllshire, which had grown without protection for many years. It has flowered freely this year, and the brusses are not lilac but of a primrose colour. Can any of your correspondents say if there are varieties differing in colour? *W. D. S.*

CANNED AND PRESERVED FRUITS.—Permit me to endorse, and, if possible, add to all that "A. D." so well says in praise of these (p. 534). The growers are doing their part well in pushing the sale of the different brands, and doubtless find their reward in more or less substantial profits. The trade in Raisins and Currants fluctuates considerably according to the season, and the severe frosts of last April that have caused such havoc in the French and other continental vineyards will have greatly curtailed supplies, or raised prices, or both. It is not, however, needful to disparage the use of time-honoured customs which sanctioned fruits with a view of pushing the trade in canned, candied, bottled, pressed or dried Apples, Pears, Plums, Apricots, Cherries, Gooseberries, and Currants. Before the fruit season gets too far advanced, I wish especially to direct the attention of fruit growers to the possibility of adding greatly to the returns this year through the bottling or candying of Gages and other Plums before stoning. Not the least delicious of these fascinating mixtures of French or other candied fruits, arranged so tastily in boxes, set off with silver, golden, or crimson paper, are the green candied Plums, obviously candied in sugar before the stones harden. Plums, notwithstanding the break-down crops of last year, and the stinging frosts of this April, promise well. Should they show another such crop as last year, no one can doubt that the ripe sample would be so improved by thinning off, say a half, before the stoning, as to make more money of the half than the whole crop. The price of the green would therefore be all clear gain, minus the thinning off and sending to market. If any of our large houses, such as Crosse and Blackwell, would advertise for green Plums for bottling, and candying at once, a much-needed filip would be given to the starting of a new industry, which would add substantially to the profits of Plum and Gage growing. The large growers will hardly have it that Gages are Plums—long spoken of as less Plum-like than Damsons and Bullaces. Of course, the use in preservation of green stone fruit is by no means an innovation. Young Peaches, Apricots, and to a lesser extent Plums, have been used for tarts and preserves from early times. But what is not advocated is the wholesale thinning of green stone fruit before stoning, to save those left from dropping,

raise the value by improving the quality of the ripe fruit, and ensure the commercial value of the thinnings, and the preservation of the health, vigour, and fertility of the trees. *D. T. F.*

ROSE SHOWS.—Mr. Bruce Findlay draws attention to what he considers a nuisance, namely, that exhibitors of Roses should be allowed to sell any blooms before the show is over. I entirely disagree with him. Where the nuisance comes in I fail to see; surely non-competitive exhibitors are allowed to do what they like with their surplus blooms, for what is there in many cases to compensate him for the expenses he incurs in showing, if he is debarred from selling his blooms? Simply because Mr. Findlay has at some time or other been asked to procure some blooms for a friend, is it in future to be considered a nuisance for an exhibitor to dispose of his blooms? I for one say emphatically, "No!" What chance is there to sell at the close of a show, when everyone is turned out, before any plants can be removed? *J. G. Hill.*

SCOTLAND.

NOTES FROM EDINBURGH.

THE Botanic Garden of Edinburgh at this season is largely visited by the public, especially those who can spare a few hours to enjoy the retirement afforded by the Arboretum, now in its most pleasing garb of young foliage of many tints. In that part of the gardens there is great wealth of varied foliage just on the point of full development, consisting of sombre-hued Conifers and flowering shrubs; and these together, with the very numerous hardy-flowering plants in rock garden and herbaceous borders, a lover of plants can spend hours in acquiring a knowledge of. The flowering shrubs that are most conspicuous at present are pontic and mollis Azaleas of every shade of colour; Rhododendrons, Daphnes, Cytisus, Crataegus, Lilacs, and Gueldres Roses, and these are interspersed with dwarf Conifers, Retinosporas, Yews golden and green, also Aucubas and other choice evergreen subjects, which no doubt were planted with much judgment; but like many other similar grounds, crowding comes on imperceptibly, and it is difficult to make up one's mind to thin out fearlessly. This reminds us of the controversy which has (uncalled for) appeared of late in the public papers regarding some clearance made in the Edinburgh Botanic Gardens, where the ground has been laid down in turf; and all who have seen this, and are capable of understanding right from wrong in a garden, will be pleased at the finished improvement, and what would add greatly to the beauty of this particular garden would be still greater clearances, and the increase of green sward. The temporary disfigurement would, of course, cause some amount of fault-finding, but in the end it would be pleasing even to the most fastidious, carping critics. Many of the finest demesnes in the country are being allowed to go to ruin by neglecting to thin in time trees and shrubs which were in the first place planted thick to give shelter, but were never intended to be thinned too early. We could name many well-known parks and grounds planned by Brown, Loudon, Marnock, and others, where tree and shrub are grown so thickly together that they are past being dealt with safely, and will remain in a pitiable plight till, in course of time, they will have to be rooted out.

Many who would wish to have a fine spring garden (after the style so finely done at Belvoir Castle), may be able to take notes of plants in vast numbers in this Botanic Garden which would meet the purpose indicated. Alpines and plants suitable for the wild garden and subtropical displays are in abundance, showing their true characteristics at the present time. Rhubarbs of many species are now approaching their best, and for bold planting by lakes, margins of plantations, and positions where they can show their natural habits uncut and untrimmed, they form bold effective masses, some of the species attaining to great size. I admired a border that was filled with these plants, where they were set wide apart on purpose to show their natural forms. Rheum

Collianum, *R. palmatum*, *R. officinale*, *R. sibiricum*, *R. hybridum*, were about their best, and others that were coming on formed a very interesting group by themselves. *Rumex* is a very distinct class, and many species were very telling; *exaltatus*, compacta, aquaticus, and some others were very attractive. *Polygonum*s make a fine display. Some of those in full flower were *bistorta* major, alpinum, divaricatum, and *Sieboldii*; *Euphorbias*, *glareosa*, *glaucescens*, *Kunzei*, were fronted with *E. Lathyris* and *Cyparissias*, all finely in flower. The dwarf *Daphne Cneorum* filled odd spaces with fine effect. Many species of *Iris* are well worthy of a place in any collection, however choice. *Iris*s *florentina*, *orientalis*, *furcata*, *nepalensis*, *prismatica*, *triflora*, *lavigata*, *amena*, and *sikkimensis*, were conspicuous amongst others, which formed a delightful bed. The flowers of *Iris* are of much value for cutting at this season. Among yellow flowers, *Anthericum chryso-bactron* and *Hemerocallis flava* showed well; *Archangelica decurrens*, *Ferula conspicua*, with peculiar foliage; *Heracleum gigantum*, tall and conspicuous, with large heads of white flowers; *Inula Hookerii*, a showy yellow flower; and *I. glandulosa*, are all pretty plants. *Saxifrage*s are in great variety, many of them being very dissimilar. Some broad-leaved and some small and mossy-like *Hippocrepis comosa* carpets the ground with its yellow flowers; *Orobancha lutea*, a peculiar bronze; and *O. coccineus*, 1 foot in height, and possessing fine rose-coloured flowers, were in bloom. On one side of these important beds is planted a long line of the dwarf, compact *Retinospora plumosa-aurea*, which indicates how fine a plant this is for decorative purposes when kept dwarf, and associated with flowering plants.

In the rock-garden there is a beautiful and interesting display; and this quaint rockery, with its stone square boxes, contained many gems in flowers. *Achillea argentea*, dwarf, with white foliage, is very pretty; *Aubrietias*, in variety; *Dianthus fragrans*, *Orchis maculata superba*, dwarf and creeping *Phloxes*, *Heaths*, *Berberis*, *Iberis*, forming sheets of white bloom; *Yucca*, *Lithospermum prostratum*, *Ranunculus* of many species, *Veronicas*, *Clintonias*, and *Genista pilosa*, were conspicuous. One may inspect this charming spot every day, and be sure of finding something of interest. *M. T.*

SUNLAWS.

Sunlaws estate lies along the Teviot, about 3 miles south from Kelso, and 6 miles south-east from Jedburgh; the old road passing between those towns runs right through the estate. Little more than sixty years ago a thick forest of Scotch Firs, mixed with some hard-wood, occupied the space where now stands Sunlaws House, surrounded by its beautiful grounds. The late proprietor, who succeeded to the estate at that time, and died only two or three years ago, must have been a man of rare taste and intelligence. He made large clearances according to a well-defined plan; all the hard-wood trees that were sound were spared. But he commenced a system of planting and beautifying which was continued till his death. The results are seen to great advantage now.

Everywhere are met grand specimens of Oak, Ash, and Beech—clean limbed and healthy; and here and there appear dark and sombre masses of Firs, showing what our ancient forests may have been like. But all around those, or mixed with them, are splendid trees of more recent growth, and in almost endless variety. The useful and ornamental are finely blended, and the selection and planting must have been conducted scientifically, for an unhealthy or badly-grown tree or shrub can hardly be found. There is a fine collection of Conifers. Much time and money must have been spent in making it, and the late laird must have been a thorough arboriculturist, and must have had good men about him, for each species seems to have been planted in the soil that exactly suited it. I several times tried to form a list of the Conifers, but I was ever coming upon another species, and my list is still incomplete.

The ornamental trees and shrubs are a magnificent collection, and are beautifully arranged. The

foliage is now approaching perfection. Since the third week of May the blossom has been worthy of a fairyland. The Laburnum (two kinds), the Lilac (three colours), the Gueldres Rose (three kinds), the Cherry (three kinds), the Elder (three kinds), the Hawthorn (a great variety), the Strawberry Tree, besides the Berberis, the Mahonia, and the heavily-perfumed Azaleas, form delightful groups in unexpected corners. I have seldom seen finer specimens of the Spanish and Horse Chestnuts. The pretty and peculiar Scarlet Chestnut (*Pavia rubicunda*) I have never seen attain to the same perfection as here. But the Rhododendrons are superb. You come upon them in pretty sheltered hollows, or in knolls of blazing colour, peeping from the woods down upon the Teviot. But the great show is the Rhododendron Drive. This is the chief drive through the grounds, and runs from south-west to north-east for a distance of 2 miles, with some pretty turnings and windings by the way. A wide clearance has been made for the drive along the whole way, and the old wood stands as a fine background on either side. Some of the finer Conifers and ornamental flowering trees and shrubs have been planted in front of the old trees. Then along both sides of the carriage way, in front of the ornamental trees, and behind a grass margin of about 10 feet, run the banks of Rhododendrons. They seem to be of almost every known variety, and they run from the showy white of elegantissima to the purple of Amilcar and plum colour of Alaric; or from the softer white of Cunninghamii to the deep crimson of Clothilda, through every gradation of colour. And the massive and compact trusses of bloom literally clothe the plants from the ground to the highest branch. A bank of healthy Rhododendrons in full bloom always reminds me somehow of a magnified and coloured coral reef basking beneath a tropical sun. Each plant exhibits its individual habit of growth. There are almost endless varieties of shape, colour, and size. But the beauty of the whole, when massed together, must be seen in order to be realised. These plants vary from 6 to 15 feet in height, and when a mass of them, extending to over a quarter of a mile, breaks upon the view, one stands in admiration.

Sunlaws estate stands about 250 feet above sea level. It is about 34 miles from the sea, and the winter frosts are sometimes of great intensity. Yet the frosts do not seem to do much damage, if one may judge from the show of blossom this summer. The soil is not of the orthodox sort recommended for Rhododendrons. It is light sandy loam, rather poor, but with plenty of moisture.

One is often sorry in these days to see places which have been improved at great expense and, for many years, allowed to go to wreck by new heirs. That, fortunately, is not likely to happen to Sunlaws. Captain R. Scott-Kerr, like his late father, is an enthusiastic arboriculturist, and he has a worthy second in his head gardener, who, under a modest manner, hides the enthusiast; and it is worth knowing that strangers may wander through the grounds at their own sweet will, and are courteously treated to any information asked regarding trees and shrubs. *A. E. W.*

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

JUNE 21.—Present: Mr. Morris (in the chair), Mr. McLachlan, Dr. Russell, Dr. Müller, Rev. W. Wilks, Dr. Bonavia, Professor Green, and Rev. G. Henslow (Hon. Sec.).

Tea-plant attacked by Fungus.—The fungus shown by Mr. McLachlan at a previous meeting proves to be *Poria xylostromatoides*, Berk.; an undetermined specimen in the Kew Herbarium, evidently the same species, is marked, "The Tea Stems, Cachar, India." The remedies suggested were the rubbing and scraping the stems, with the use of sulphur and lime.

Carnations attacked with Hylemyia Grubs.—Mr. McLachlan observed that the injury to Carnations

was brought to his notice last autumn. The grubs lived beneath the rosette of leaves forming the crown of the plant, and also bored into the stem below the crown. The perfect female insect, having been now obtained for the first time, it proves to be *Hylemyia nigrescens*, Rnd., allied to *H. Cardui*, which feeds in the flower-heads of Thistles. He suggests hand-picking as soon as symptoms of flagging is seen in the Carnations. Mr. McLachlan's note upon this subject will be found in the *Entomologist Monthly Magazine* (sec. ser., vol. iii., p. 135). The committee will be glad if florists will observe when the Carnations appear to be first attacked, and record any observations they may make, in order to discover the best remedy in future.

Ground Ivy Gall.—Mr. McLachlan exhibited three large green galls on this plant. They are due to *Aulax Glechomæ*, there being one gall-fly in each. He observed that it was an undecided point whether galls are the result of mechanical puncture, or due to some secretion by the insect, as different kinds of galls are sometimes produced by different broods of the same species—as the root-galls and "Oak-

of the British Vice-Consulate of Rochelle, respecting the ravages done by *Termes lucifugus*, a native of South Europe and North Africa. It was introduced about the end of the last century, and has now spread almost everywhere at La Rochelle. Many public and private institutions are in a dangerous state, as at the Prefecture the wooden beams have had to be replaced by iron. They have destroyed part of the archives, and it is found that it is useless to grow certain plants in the gardens (as Geraniums), as the ants consume the interior of the stalks. It has been found impossible to destroy or get rid of them. Dr. Müller remarked that they had proved very destructive to Vines in certain parts of France. Mr. McLachlan added that another species (*T. flavipes*), which had appeared and done much damage in Austria, has now been pretty well exterminated. Mr. Morris reminded the committee that the white ant had once been imported to Kew in a log of the Copal tree, and that when old slave ships were left at St. Helena, after liberating the slaves, the ants soon spread over that island.

then it would be completely decomposed, and the copper rendered insoluble. Dr. Müller added the important suggestion that the action of the copper solution might be highly injurious by destroying the nitrifying organisms. The general question, therefore, as to the possible injuriousness of sulphate of copper in the soil, becomes somewhat complicated. It was understood that experiments were about to be undertaken at Chiswick, where the above considerations would be attended to.

ROYAL OXFORDSHIRE HORTICULTURAL.

JUNE 21.—The annual Commemoration Flower Show took place in the gardens of Trinity College on the above date, and the weather being all that could be desired, it was attended by a very large company. The gardens comprise about 4 acres in extent, and one of the arboreal features is a Lime tree walk of forty-eight trees, twenty-four on either side; and these trees are supposed to be between 200 and 300 years old. Though so aged, very little development of trunk is made, as the trees are severely pollarded each year, to keep the heads within bounds. Formerly a line of Yews enclosed the Lime avenue on either side, but they have disappeared on one side entirely.

As is usual, the exhibits were arranged under two spacious tents. The vegetables, which were remarkably good for such a season, were placed on tables in the open, but under the shade of trees.

A few classes were open to all England, one for nine stove and greenhouse plants in flower, and Mr. James Cypher, nurseryman, Cheltenham, was placed 1st with very fine and fresh specimens, comprising *Bougainvillea glabra*, *Stephanotis floribunda*, *Allamanda grandiflora*, an excellent piece of *Dracophyllum gracile*, *Pimelea diosmæflora*, *Phœnocomia prolifera* Barnesii, &c.; 2nd, Mr. J. F. Mould, nurseryman, Pewsey, whose leading plants were *Dipladenia amabilis*, *Clerodendron Thompsonæ*, *Statice profusa*, and *Franciscea calycina* major.

Another open class was for six Cape Heaths, and here Messrs. Cypher and Mould were severally 1st and 2nd, the former having strong plants of *Erica Massoni* major, *E. kingstoniensis*, *E. jubata*, and the following varieties of *E. ventricosa*, viz., *rosea*, *hirsuta alba*, and *Bothwelliana*. Mr. J. F. Mould also had some very good specimens, and it is pleasant to see these once popular exhibition greenhouse plants being shown in something like their old form.

Nine show *Pelargoniums* were also an open class, and Mr. C. Turner was awarded the 1st prize for this quantity of admirably-grown and bloomed plants we are accustomed to see from the Royal Nursery. Such varieties as *Sister of Mercy*, *Goldmine*, *Joe*, *Duke of Norfolk*, *Orient*, *Magpie*, *Outlaw*, and *Spotted Beauty*, were seen at their best. Mr. Turner also had a miscellaneous group of specimens, such as *Magnate*, *Emperor William*, *Martial*, *Amethyst*, one of the most distinctly purple of the show *Pelargoniums*; *Pluto*, *Frances*, and several fancies.

In the classes open to all, were two for *Roses*, one for twenty-four triplets, and one for twenty-four single blooms; Messrs. J. Mattock and G. Prince, both well-known Oxford growers, took the prizes; the flowers were small, and consisted largely of Tea-scented varieties. Special prizes were offered by Miss Watson Taylor, for eighteen *Roses*, single blooms, and here Mr. G. Prince was 1st, and Mr. W. Narroway, 2nd.

Another class in this division was for a table florally decorated for dinner, six by four feet; and as three of these competed, they made a pretty feature placed crosswise in the middle of the cut flower tent. The best—decidedly the best, was set up by Mr. J. Mattock; the Rev. H. A. Pickard, Oxford, was 2nd; and Mrs. J. S. Parker, Oxford, 3rd.

A group of nine superb *Orchids*, staged by Mr. J. Cypher, was an object of considerable interest; they were of large size and finely bloomed, and consisted of *Cattleyas Mendelii*, *Sanderiana*, *Mossiae*, and *Warneri*, *Miltonia vexillaria*, *Oncidium macranthum*, *Dendrobium suavisimum*, *infundibulum*, and *thrysiflorum*, and *Anguloa Clowesii*. In the class for four *Orchids* the only exhibitor was E. A. Beaves, Esq., Oxford, who had small but highly-creditable plants.

In the members division for six stove and greenhouse plants, Mr. Mould was 1st, and Mr. J. Mattock, 2nd. The best specimen stove plant was *Allamanda Hendersoni* from Mr. Mould; Miss Thomson, Stanton House, Oxford, with *Anthurium*



FIG. 5.—STRAWBERRY ROYAL SOVEREIGN. (SEE P. 19.)

apples" on the Oak. The latter surmise appears to be most probable.

Injury by Fog to Plants.—Professor F. Oliver has prepared and exhibited at the *soirée* of the Royal Society dried plants, as well as drawings, showing the injuries produced by London fog. Dr. Russell remarked, from some examinations he had made near the end of last year, that the amount of sulphuric acid in the fog was even greater than had been proved to exist in the air at Manchester.

Huskless Barley.—Dr. Bonavia exhibited specimens of three kinds—white, green, and dark purple-coloured varieties from India. They were grown in Oude by the Rajah as curious, but were not marketable produce. He also exhibited a small variety of Horse-bean called "Bakla," and specimens of the white "Gram," a variety of *Cicer arietinum*.

Megacarpæa polyandra (see fig. 4).—Mr. Burbidge sent a specimen of this remarkable Cracifer. It has twelve stamens instead of six, every one of the usual number being doubled. The fruit has two unequally-developed carpels, with a narrow dissepiment, somewhat resembling that of Penny Cress, being quite round and flat. It is a native of Western Thibet, W. Himalaya, Kumaon, at an altitude of 12,000 feet (*Fl. of Br. Ind.*, vol. i., p. 161).

White Ants in France.—Communications were received by Mr. Morris from R. S. Warburton, Esq.,

Potato Disease, and the Use of Sulphate of Copper.—

Some discussion arose on this subject relative to the statement that on certain occasions, and probably on different soils, it had proved to be less beneficial than expected; and that the question had been raised whether it did not render the soil injurious to plant life. Drs. Müller and Russell pointed out that the results might be very different if there were an excess of the copper-salt or of lime, as there might be not enough of lime to precipitate the former, resulting in an excess of copper-salt undecomposed in the soil. For example, Dr. Russell stated that he had taken the constituents of the mixture used by Messrs. Sutton, as stated in the *Times*, and found that the lime was not sufficient to decompose all the sulphate of copper, so that some of the solution had probably entered the soil. Secondly, the quality of the lime was an important point, as there might be an excess of caustic lime, which would probably be equally injurious. Moreover, the results might vary considerably according as the soil was naturally calcareous or purely siliceous. In the latter case a deficiency of basic materials would very likely bring about an excess of copper sulphate as a residue. Thus, Dr. Russell observed, that the solution on entering the soil would not at first be decomposed, but if lime or other bases, as magnesia, were present,

Scherzerianum. The best specimen greenhouse plant was a fine *Erica Kingstoniensis* from Mr. Mould; Mr. Mattocks was 2nd with an *Azalea*.

Chief among the flowering plants were the zonal *Pelargoniums*. In the class for six plants, Mr. J. Johnson, florist, Garsington, Oxford, was placed 1st, with grandly-grown and flowered plants, some of the best seen for some time, the varieties being John Bright, Robert Hayes, Hyacinth, Zelia, Eurydice, and Dr. Orton. Mr. J. Walker, nurseryman, Thame, came 2nd, with an excellent lot of plants also.

Pelargoniums of the show type, double zonals (very fine indeed), Ivy-leaved, and variegated-leaved, were all very good.

Fuchsias were represented by well-grown plants, but wanting a few more days to be in perfect bloom. *Achimenes* and *Gloxinias* were well represented.

Foliage plants, generally represented by excellent *Palms*, exotic and hardy *Ferns*, *Coleus*, &c., were all well shown by various exhibitors.

In the cut-flower classes, *Roses*, bunches of hardy flowers, *Ranunculus*—and Oxford seems to be still a centre for the culture of some of the choicer varieties—*Pansies*, *Pyrethrums*, and *Iris* were shown.

Fruit.—The show of fruit was a fairly good one for the season. The best three bunches of white Grapes were well-finished Foster's Seedling, from Mr. Broadfoot, gr. to Col. Miller, Shotover; Mr. Robins, gr. to Col. Lee, Aylesbury, was 2nd, with the same. Mr. Robins had the best three bunches of Black Hamburg Grape, of good colour; and Mr. Doherty, gr. to Lord North, Banbury, was 2nd. Mr. Robins had the best Peaches, in Dymond; Mr. Broadfoot coming 2nd with Grosse Mignonne. The best Nectarines were Lord Napier. Mr. Robins, and Mr. Neal, gr. to R. Southby, Esq., Bampton, were 1st and 2nd. The best Strawberries were President and Sir J. Paxton. Cherries were also well shown.

Vegetables.—The leading classes for vegetables were those in which special prizes were offered by Messrs. Sutton & Sons, Reading, and Messrs. E. Webb & Sons, Stourbridge. Here Mr. T. Lockie, gr., Oakley Court, Windsor, was 1st in both classes, staging vegetables of remarkably fine quality in such a late season. Mr. G. Neal took the 2nd prize given by Messrs. Sutton & Sons, with a very good collection indeed, and Mr. Brock (gr. to C. D. Batt, Esq.), Witney, that of Messrs. Webb & Sons. Cucumbers were numerous, Mr. Lockie taking the 1st prize with a brace of perfect fruits of Lockie's Perfection. Of Kidney Potatoes the best was Guardian, one of the Bedford seedlings, early, and very handsome; the best Round, also early and very fine. Sutton's Seedling excellent early forcing Horn Carrots were shown; the purple top Munich Turnips were admirable; the best Peas were Sutton's Early Marrow, a large-podded early variety of the finest quality; William Hurst and Exonian, both of very fine quality; and William I. It was too early for some other vegetables in such a retarding season.

From Blenheim Palace Gardens, Mr. Whillans brought a very fine collection of bluish and pink Malmaison Carnations: the crimson Madame A. Warocque, Mrs. Moore, a large white self; Germana, and Improved Miss Jolliffe. It well deserved the highest special award which could be made.

RICHMOND HORTICULTURAL.

JUNE 29.—It was not a matter for surprise that the executive of this Society should have, the morning of their annual summer show, held on the above date, much misgiving. The previous night had brought one of the worst thunderstorms known for many years, that threatened a catastrophe rather than a success for the show. Happily the tents stood fast, and although the wind was somewhat wild and cold at times, and the sky overcast and gloomy, yet all went well eventually, and there was seen by the visitors one of the most gay and beautiful shows yet held by the Society. The site was this year shifted from the old deer park to the athletic grounds nearer the Kew Road—an admirable place, but lacking the fine trees of the old site, the shade of which was not, however, this year required. The show was held in four large tents, two for plants, one for cut flowers, and one for fruit and vegetables. During the afternoon the Duke and Duchess of Teck visited the show, and the huge band from Kneller Hall supplied the music.

Groups.—In the plant-tents very striking features were the fine mixed groups of flowering and foliage plants shown by various nurserymen. Messrs. J. Veitch & Sons, Chelsea, had a superb group of pot

Roses, fronted by a margin of *Eurya latifolia* variegata, and backed by some fine clumps of *Spiræa astilboides*, *Bumalda variegata*, and those lovely white-flowered shrubs, *Philadelphus microphyllus* and *Andromeda speciosa cassinefolia*, the latter carrying long spikes of thick white cup-shaped flowers.

Messrs. B. S. Williams & Co., Holloway, had a good group of flowering and foliage plants, a good specimen of *Allamanda Williamsii* forming a striking central object. Messrs. J. Peed & Sons, Norwood, had a bright effective group. Messrs. J. Laing & Sons, Forest Hill, showed a group, which included good *Begonias*, *Gloxinias*, a fine piece of *Cattleya gigas*, *Caladiums*, and numerous other foliage and flowering plants.

Mr. W. Icton, Putney, had a very large central group of giant *Palms*, with white Lilies, *Hydrangeas*, &c. A remarkably beautiful as well as meritorious collection of *Begonias*, *Gloxinias*, &c., was staged by Messrs. Sutton & Sons, Reading. This included large plants of the pure white *Gloxinia Her Majesty*, also Duke of York, brilliant vermilion, broadly edged pure white, very fine; and their new reticulated strain, large erect flowers of blue, purple, scarlet, and red grounds, heavily splashed and spotted white, very novel and beautiful; also *Begonias* of the hybrid Princess Beatrice strain, so capital for bedding, pot-work, or winter blooming; Crimson King, 10 inches high, full of flowers, bright coral-red in colour; and Duchess of Edinburgh, white, edged rosy-red; also a fine new *Achimenes*, Rosy Queen, large-flowered, in colour rosy-pink, strong grower, and very pleasing.

Cut Flowers.—The trade showed largely, Messrs. Collins & Gabriel, Hampton, having a very large and an effective group; as also had Messrs. Barr & Sons, Covent Garden, Messrs. Cutbush & Sons, Highgate, and others. All these collections were most attractive features.

Orchids.—Mr. H. Little, Twickenham, sent a good collection of *Cattleyas*, *Lælias*, *Cypripediums*, &c.; and Mr. H. Tracey, of the same place, had some capital *Cattleyas*, &c. Of plants in competition, the best half dozen came from Mr. Young (gr. to F. Wigan, Esq.), East Sheen, who had *Miltonia vexillaria*, *Epidendrum vitellinum*, *Aërides Fieldingii*, *Grammatophyllum Seegerianum*, and *Cypripediums Veitchianum* and *Lawrencianum*. The next best lot came from Mr. Ryder (gr. to C. Young, Esq.), Richmond, who had good *Cattleyas gigas* var. *Sanderiana*, and *Mossia*, *Oncidium Marshallianum*, *Miltonia vexillaria*, *Odontoglossum Alexandræ*, and *Cypripedium barbatum*; Mr. H. James, Lower Norwood, was 3rd.

Stove and Greenhouse Plants.—The best six flowering plants came from Mr. F. Mould, Pewsey, Wilts, who had a fine fresh *Clerodendron Balfouriana*, a huge *Phacocoma Barnesii*, good *Franciscia calycina* major, and *Ericas ventricosa*, *Bothwelliana*, *Parmenteriana rosea*, and *retorta* major; Mr. H. James was 2nd, and Mr. Currey, Salisbury, 3rd. Mr. Mould also set up a large group of specimen plants.

The best single specimen was a fine *Statice profusa*, from General Annesley, Otlands Park (the gardeners' names were frequently omitted from the cards); the second best being a large *Anthurium Scherzerianum*, sent by Mr. Parsons, gr. to T. Twining, Esq., Twickenham.

The best specimen fine foliage plants were good *Cycas revoluta*, and a huge *Eurya latifolia* variegata. Ordinary fine-foliage plants were not exceptionally good.

Palms were in abundance, the finest half dozen coming from Mr. Simmons, gr. to W. Cunard, Esq., Orleans House, Twickenham. Mr. Wilkes, gr. to T. Cane, Esq., Richmond, had the best six exotic *Ferns*, fair samples; and Mr. Young, gr. to Mr. F. Wigan, the best six, all very good specimens. Hardy *Ferns* were very good. Mr. Sallows, gr. to Miss Vaughan, Twickenham, had six capital *Coleuses*, well-coloured.

Decorative Groups were specially good, but the large ones only call for notice. The winner of the 1st prize this time was Mr. H. E. Fordham, Twickenham, who had a light and very beautiful arrangement; Mr. A. Brown, Richmond, was 2nd with one not less beautiful, but wanting rather in bloom. A fine group of show and fancy *Pelargoniums* came from Mr. C. Turner, of Slough, and a smaller one from Mr. Baldwin, Hillingdon, with six show plants in superb bloom, *Mandarin*, *Magnate*, *Goldmine*, *Cygnat*, *Symmetry*, and *Joe*. Mr. Turner was an easy 1st, Mr. Baldwin coming 2nd. Mr. Turner was also 1st with beautiful specimen fancies, having The Shah, Ambassador, Princess Teck, Delicatum, Mrs. Hart, and Mr. Thornton.

Mr. Henry Little had the best six zonal *Pelargoniums*, all in fine bloom; and also the best six Ivy-leaf varieties, being very closely run by the more columnar plants of Mr. W. Furze, Teddington.

The best twelve *Begonias* came from Mr. White (gr. to Mrs. Farnell Watson, Isleworth); another very good lot coming from Mr. Portbury, gr. to W. Froy, Esq., Putney.

Gloxinias in three classes made a very fine show, the best nine plants coming from Mr. Nunn, gr. to P. Rankin, Esq., East Sheen, who set up some of the very best grown and flowered plants we have seen. In another class for nine, Mr. Meaden, gr. to J. B. Hilditch, Esq., Richmond, had the best plants. *Fuchsias* were poor. It is, however, impossible to notice one half of the numerous exhibits in the plant classes.

Roses.—The Rose show was one of unusual extent, the open classes having been extended to increase the display. It is very noticeable how often the Colchester growers do well at Richmond, and this time they practically carried all before them.

In the class for thirty-six trebles, Mr. B. Cant was 1st, having, of dark flowers, A. K. Williams, Gustave Piganeau, new and fine Madame Ducher, Duke of Edinburgh, Alfred Colomb, Maurice Benardin, Le Havre, &c.; of light hues, The Bride, Catherine Mermet, Violette Bowyer, Lady Mary Fitzwilliam, Souvenir d'Elise, Madame de Watteville, and Innocente Pirola. Of intermediate hues there were Marie Contet, La France, Marie Finger, Lucide (Tea, a beautiful colour), Mrs. John Laing, Madame Gabriel Luizet, &c. Messrs. Paul & Sons, Cheshunt, was 2nd, having new Gustave Piganeau, and Madame Isaac Pierre, rosy pink.

With twenty-four trebles, Mr. F. Cant was 1st, having the striped Pride of Reigate, Caroline Custer, Jeannie Dickson, Marie van Houtte, &c., good. Mr. B. M. Cant was 2nd.

Messrs. Cant took the prizes in the class for twelve trebles.

With twelve blooms, one variety, Messrs. Perkins, Coventry, was 1st, with fine Lady Mary Fitzwilliam; Mr. C. Turner coming 2nd with Madame Gabriel Luizet.

Messrs. Paul & Son had the best twelve Teas with Madame de Watteville, The Bride, and Maréchal Niel; Mr. F. Cant and Mr. B. Cant coming 2nd and 3rd respectively.

The best twenty-four (amateurs) *Roses* came from Mr. Warwick, gr. to J. P. Kitchen, Esq., Hampton; Mr. R. E. West, Reigate, coming 2nd. Mr. Hugh White, Highgate, had the best twelve blooms. Messrs. Jackman & Sons, Woking; Messrs. Rumsey, Waltham Cross; and Mr. Will Taylor, Hampton, showed good collections of flowers.

In the Rose tent were table decorations, baskets, bouquets, &c., in great variety. Mr. G. Wythes, Syon House gardens, showed a box of beautiful cut *Orchids*. Mr. G. Sage was placed 1st for a box of cut flowers, in bunches; and Mr. Gardiner, of the Police Orphanage, had 1st prize for twelve bunches of hardy flowers. In a large class for these, Messrs. Barr & Sons, Mr. Hodges, Chiselhurst, and Mr. Sage respectively took prizes. The table decorations, baskets, &c., were of a very beautiful order, and too numerous to mention further.

Fruit.—This was fairly good, the best collection of six dishes coming from Mr. Osman, gr. to J. L. Baker, Esq., Chertsey, who had good Black Hamburgh and Buckland Sweetwater Grapes, Masterpiece Melon, Grosse Mignonne Peaches, Brown Turkey Figs, and Elrue Nectarines. Mr. Waite, gr. to Col. Talbot, Esher, was the only other exhibitor.

The best black Grapes, fine Hamburgs, came from Mr. Ford, gr. to W. H. Ellis, Esq., Hounslow; Mr. Osman coming 2nd; but was 1st with capital Bucklands in the class for whites; Mr. Ford being 2nd with Foster's Seedling.

In the local classes, Mr. Sage had the best Hamburgh for black, and also with good Buckland Sweetwater for white. Mr. Sage was also 1st with four dishes of fruit. Mr. Burton, gr. to J. D. Paul, Esq., Twickenham, had the best nine Peaches in Bellegarde, and Mr. Simmonds the best nine Nectarines in Lord Napier. Mr. Sage was 1st with two dishes of Strawberries, capital President and Dr. Hogg. Superb Perfection Tomatoes were placed 1st for Mr. Wagstaff, St. Margarets; Mr. Sage having the 2nd best.

Vegetables.—These were in great quantity, but we can only notice the large collection of twelve dishes shown by Mr. Waite for Messrs. James Carter & Co.'s prizes, which were exceptionally fine; and the same exhibitor's nine dishes in another class. These

comprised fine Cabbages, Sutton's Seedling Potatoes, Duke of Albany Peas, Gem Carrots, Leviathan Beans, Perfection Tomatoes, King of the Cauliflowers, Lisbon Onions, &c. Mr. Waite, for prizes offered by Messrs. Sutton & Sons, had the best fifty Peas in Duke of Albany; and Sir Edwin Saunders, Wimbledon, the best brace of Cucumbers; and in another Cucumber class, Mr. Stroud, Twickenham, had the best brace.

FLORISTS' FLOWERS.

CINERARIAS.

THE improvement effected in Cinerarias within the last twenty years or so has been very great, and instead of small poor flowers, we have blossoms large and well-rounded, close, and of great substance, with well-defined colours, inasmuch, that the plants when well grown make a magnificent show; and especially is this the case with the French strains, which have blooms ranging from 2 to 3 inches across. The habit of these, however, is not equal to the English, which are dwarf and compact, and send up fine heads of flower. Seed of good varieties can be obtained from any of the large nurserymen, and the present is a good time to sow, if plants are not wanted very early, in which case they should have been raised sooner.

A good method is to prepare a pan by draining, and covering the bottom with rough soil, and then fill up with a light compost which has been finely sifted, when the whole should be pressed down quite firm, and made perfectly smooth on the top, after which a gentle watering should be given, and in an hour or so after the seed may be sown. This should be done by scattering the seed regularly and thinly, and all the covering that ought to be used is a sprinkling of silver-sand, or soil shaken through a gauze-wire sieve; and if a sheet of glass is then laid over the pan, and covered with a sheet of tissue, and the pan placed in a close warm pit, the seed will quickly germinate. As soon as this has come about, the glass must be taken off, or the tiny plants will be drawn and injured. To keep them growing freely, they should be lightly syringed daily, and directly they are large enough to handle, prick them off; this can be done in pans or boxes, or the plants may be potted singly in small pots—the first-mentioned being the better plan, and the potting carried out later on. Two-thirds loam to one of leaf-mould, with just a dash of sand to keep the whole open, will be found a suitable compost. In this the plants should be potted as soon as they get into rough leaf, using 3-inch pots, which should then be stood in a frame where they can be kept close and moist, which will help them to start.

As Cinerarias are naturally shade-loving plants, the frame should be stood under a north wall, or other situation where the sun shines on it for a short time only, which is better than shading the glass, as the plants get sufficient light. As a floor to stand them on, there is nothing equal to sifted coal-ashes, as it remains always moist and cool, and the dampness keeps the plants healthy, and free from red-spider, to which Cinerarias are liable under less favourable conditions. The treatment requisite during the summer is to water carefully, and sprinkle the plants overhead every afternoon, and when that is done the lights should be closed till the morning. As soon as the pots become full of roots the plants should be re-potted, as any check to growth will now throw them prematurely into bloom, which will prevent them increasing the size and strength of their crowns. Although most plants do best with firm potting, Cinerarias are an exception, and thrive most when the soil is somewhat loose and friable. The size of pots most suitable are 48's and 32's, and when the roots have filled them, liquid-manure should be afforded once or twice a week till they come into bloom. Clear soot-water is as good as anything as a manure, it being an excellent stimulant, having a good effect on the colour of the foliage, if not applied too strong or too often. As Cinerarias are very susceptible to

injury by frost, great care must be taken in the autumn, if in cold frames, to protect them, and it is better practice to remove them to a light pit or house where they can be kept safe, at the same time guarding against any unnecessary forcing. A temperature of 40° to 50° they are sure to do well in, if mildew and insects are not allowed to attack them. The best remedy for mildew is sulphur dusted on the foliage, and aphids may be readily disposed of by fumigating with Nicotine. It often happens that in growing Cinerarias that some show exceptionally fine flowers of good qualities, and these should be set aside for seed or for affording offsets; such plants, after flowering, should be stood in some cold pit or frame, and encouraged to make side shoots, which may be taken off, with some roots attached, and grown and treated precisely the same as the seedlings. If the intention is to save the seed, then the plants should be stood up near the glass on a shelf, or other light position, where they can get plenty of air and be free from damp, that the pollen may ripen. J. S.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.					More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
	Above (+) or below (—) the Mean for the week ending June 25.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.				
0	3 —	57	0	+ 8	212	3 —	118	19.4	34	30
1	4 —	61	0	— 62	241	3 +	94	11.5	25	34
2	5 —	69	0	— 6	186	6 +	95	10.6	24	34
3	3 —	91	0	— 14	210	7 +	89	9.0	36	38
4	3 —	88	0	+ 35	250	3 +	80	8.9	32	37
5	4 —	93	0	— 31	138	6 +	68	7.2	36	41
6	3 —	76	0	— 18	193	2 +	92	17.2	35	35
7	3 —	82	0	— 9	165	2 +	91	13.4	37	37
8	3 —	88	0	+ 1	117	3 —	82	10.6	37	43
9	2 —	82	0	— 41	122	1 —	98	14.8	31	33
10	3 —	90	0	— 14	132	1 +	87	14.6	31	37
*	1 —	108	0	+ 14	42	2 +	87	11.9	40	47

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—0, Scotland, N.; 1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.

Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending June 25, is furnished from the Meteorological Office:—

"The weather during this week was somewhat cloudy or dull generally, with frequent and rather heavy falls of rain, but there were several very bright intervals. Thunder and lightning occurred at times in different parts of the Kingdom.

"The temperature was again below the mean, the deficit ranging from 1° in Ireland, and 2° in most of the other western districts, to 5° in 'England, S.,' 6° in 'England, N.E.,' and 7° in 'England, E.' The highest of the maxima, which were registered on rather irregular dates, ranged from 72° over the greater part of England, to 66° in 'Scotland, W.' and the 'Channel Islands.' The lowest of the minima were recorded during the earlier part of the period in 'England and Ireland,' but on irregular dates in Scotland; they ranged from 32° in

'Scotland, E.,' to 40° in 'England, N.E., S., and N.W.,' to 46° in the 'Channel Islands.'

"The rainfall exceeded the mean in nearly all districts, but was less in 'Scotland, N.,' 'England, S.W.,' and 'Ireland, N.' In the eastern and southern parts of England the excess was rather large.

"The bright sunshine was less prevalent over the Kingdom as a whole, than for some weeks past, and was less than the mean in nearly all districts. The percentage of the possible duration ranged from 24 in 'England, N.E.,' and 25 in 'Scotland, E.,' to 37 in 'England, N.W. and S.W.,' and to 40 in the 'Channel Islands.'

MARKETS.

COVENT GARDEN, June 30.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.]

SUPPLIES still keep heavy, but goods cleared at lower prices. James Webber, Wholesale Apple Market.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Genistas, per dozen.	6 0-10 0
Arum, per dozen	6 0-9 0	Heliotrope, per doz.	3 0-6 0
Aspidistras, per doz.	18 0-63 0	Hydrangea, per doz.	9 0-18 0
Begonias, per doz.	6 0-12 0	Ivy Geraniums, doz.	4 0-6 0
Calceolarias, per doz.	3 0-6 0	Lilium Harrisii, doz.	12 18 0-30 0
Coleus, per doz.	4 0-6 0	Lobelia, per doz.	3 0-6 0
Cyperus, per dozen	4 0-10 0	Marguerites, per doz.	6 0-12 0
Dracenas, each	1 0-5 0	Mignonette, doz. pots	4 0-8 0
Echeveria pyramidalis, per doz.	12 0-24 0	Musk, per doz.	2 0-4 0
Ericas, various, doz.	12 0-18 0	Palmas, various, each	2 0-10 0
Ferns, various, doz.	4 0-9 0	— specimens, each	10 6-84 0
— per 100	8 0-15 0	Pelargoniums, p. doz.	8 0-12 0
Ficus elastica, each	1 6-7 6	— scarlet, p. doz.	2 0-4 0
Fuchsia, per doz.	4 0-9 0	Roses, Fairy, p. doz.	5 0-8 0
		Spiras, per doz.	6 0-12 0

Bedding plants, various, in boxes, 1s. to 3s.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Tasmanian, per case	4 0-8 0	Peaches, per doz.	3 0-18 0
Grapes, per lb.	1 0-3 0	Pine-apples, St. Michael, each	2 0-6 0
Lemons, per case	12 0-25 0	Strawberries, per lb.	0 3-1 0
Melons, each	1 0-3 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bls.	2 0-4 0	Pansies	1 0-2 0
Carnations, 12 blms.	0 9-1 6	Paeonies, doz. bun.	9 0-18 0
— 12 bunches	3 0-6 0	Pelargoniums, scarlet, per 12 bun.	4 0-6 0
Cornflower, 12 bun.	1 6-3 0	— 12 sprays	0 6-1 0
Eucharis, per dozen	2 6-4 0	Poppies, 12 bunches	2 0-6 0
Gardenias, per dozen	1 6-3 0	Primula, double	4 0-6 0
Heliotrope, 12 sprays	0 4-6 0	Pyrethrum	2 0-4 0
Iris	12 bunches 6 0-12 0	Ranunculus	1 0-3 0
Lilium candidum, 12 bloom	0 6-0 9	Roses, Tea, per dozen	9 0-2 0
— 12 bunches	18 0-24 0	— coloured, dozen	1 0-1 6
— Harrisii, doz.	2 6-4 0	— yellow (Maréchal), per doz.	2 0-5 0
Maiden Hair Fern, 12 bunches	4 0-6 0	— red, per dozen	1 0-2 0
Marguerites, per doz.	3 0-4 0	— Moss (French)	12 bunches 6 0-12 0
Mignonette, 12 bun.	2 0-6 0	— outdoor, 12 bun.	3 0-8 0
Myosotis, or Forget-me-not, 12 bunches	1 6-4 0	Spiras, 12 bunches	4 0-6 0
Orchids:—		Sweet Peas, doz. bun.	4 0-6 0
Cattleya, 12 blms.	4 0-8 0	— Sultan, 12 bun.	2 6-4 0
Odontoglossum crispum, 12 blms.	1 0-4 0	Tuberose, 12 blms.	0 4-0 9
		Wallflowers, per doz.	2 0-4 0

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes Globe, ea.	0 4-0 6	Lettuces, per doz.	1 6-2 0
Asparagus, per bund.	1 6-6 0	Mushrooms, punnet	2 0-...
Beans, French, lb.	2 6-3 0	Mustard and Cress, punnet	...
Beet, red, per dozen	2 0-3 0	Parsley per bunch	0 3-0 6
Carrots, per bunch	0 4-0 6	Shallots, per lb.	0 6-...
Cauliflowers, each	0 3-0 6	Spinach, per bushel	3 6-...
Cucumbers, each	0 6-0 9	Tomatoes, per lb.	0 9-1 3
Endive, per dozen	2 0-3 0	Turnips, per bunch	0 4-0 0
Herbs, per bunch	0 9-1 0		

POTATOS.

NEW POTATOS.—Kidneys, 7s. to 8s.; Rounds, 6s. to 6s. 6d. Market dull.

OLD POTATOS.—Season virtually over. Best samples command 100s. to 120s. per ton. J. B. Thomas.

SEEDS.

LONDON: June 29.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that to-day's market presented no new or striking feature. The new French Trifolium shows excellent quality; prices promise to be moderate. White Mustard is dearer. Rape-seed keeps firm. In Canary seed there has been a substantial advance; sales of Turkish are reported in Liverpool at 49s. per quarter. Hemp and Linseed are slow. There is no

change in either Peas or Haricots. Buckwheat, Dari, and Millet are without alteration. For Tares there is still a small inquiry.

FRUITS AND VEGETABLES.

SPITALFIELDS, June 28.—Quotations:—New Zealand Apples, 5s. to 8s.; foreign Tomatos, 1s. to 1s. 6d. per box; forced Rhubarb, 1s. to 1s. 6d.; natural do., 1s. to 2s. per dozen bundles; Black Cherries, 5s. 6d. to 7s. 6d. per half-sieve; Strawberries, 2s. to 3s. 6d. per peck; Seakale, 1s. to 1s. 3d. per punnet; Cabbages, 3s. 6d. to 7s. per tally; Greens, 2s. to 2s. 6d.; Turnips, 2s. to 2s. 6d.; Spring Onions, 2s. to 4s. 6d.; Parsley, 1s. to 1s. 6d. per dozen bunches; Spidach, 1s. to 1s. 6d. per bushel; Cauliflowers, 2s. to 3s.; Endive, 6d. to 1s.; Cabbage Lettuce, 4d. to 1s.; Leeks, 2s. to 2s. 6d.; frame Cucumbers, 1s. 6d. to 2s. 6d.; natural do., 1s. to 1s. 6d.; Beetroots, 6d. to 8d. per dozen; Peas, 8s. to 10s. per sack; Cos Lettuce, 6d. to 1s. per score; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Horseradish, 1s. to 1s. 2d. per bundle; Mint, 1s. 6d. to 2s. per dozen bundles.

BOROUGH: June 28.—Quotations:—Cauliflowers, 2s. 6d. to 4s. per dozen; Cabbages, 4s. to 7s. per tally; Peas, 3s. to 5s.; Spinach, 1s. 3d. to 1s. 6d. per bushel; Cabbages, 4s. to 5s. per tally; Cauliflowers, 2s. per dozen; Onions, Egyptian, 5s. to 5s. 6d. per bag of 110 lb. Fruit (foreign): Tomatos, 1s. 3d. per box of 7 lb.; Cherries, 1s. 3d. to 1s. 6d. per box of 16 lb.; Tasmanian Apples, 6s. 6d. per box of 46 lb.; Black Currants, 3d. per lb.

FARMINGTON: June 30.—Quotations:—Peas, 8s. to 9s. per sack; Spinach, 1s. 3d. to 1s. 6d. per bushel; Cabbages, 4s. to 5s. per tally; Cauliflowers, 2s. per dozen; Onions, Egyptian, 5s. to 5s. 6d. per bag of 110 lb. Fruit (foreign): Tomatos, 1s. 3d. per box of 7 lb.; Cherries, 1s. 3d. to 1s. 6d. per box of 16 lb.; Tasmanian Apples, 6s. 6d. per box of 46 lb.; Black Currants, 3d. per lb.

STRATFORD, June 28.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned quotations:—Cabbages, 4s. to 7s. per tally; Greens, 2s. to 3s. per bag; Turnips, 4s. to 4s. 6d. per dozen bundles; Carrots, household, 3s. 6d. to 4s. per dozen; Mangolds, 15s. to 20s. per ton; Onions, Egyptian, 80s. to 110s. per ton; Green Peas, 4s. to 5s. per sieve; do., 9s. to 12s. per bag; Cucumbers, 2s. to 3s. 6d. per dozen.

POTATOS.

BOROUGH, June 28.—Quotations:—New: Jersey, 6s. 6d. to 8s.; Cherbourg, 6s. to 7s. per cwt. Old:—Bruce Magnums, 80s. to 110s.; Fenland do., 70s. to 75s. per ton.

SPITALFIELDS: June 28.—Quotations:—New: Jersey Rounds, 6s. to 6s. 6d.; do. Kidneys, 6s. 9d. to 7s.; do. Flukes, 6s. 9d. to 7s. 6d.; Cherbourg Rounds, 5s. 9d. to 6s.; do. Kidneys, 6s. 3d. to 7s.; do. Flukes, 6s. 9d. to 7s. 6d.; St. Malo Rounds, 6s. to 6s. 3d.; do. Kidneys, 6s. 6d. to 7s. 6d.; Lisbon Rounds, 6s. 6d. to 7s. per cwt. Old:—Magnums, 65s. to 75s. per ton.

STRATFORD: June 28.—Quotations:—Old: Magnums, 80s. to 100s. per ton. New:—Jersey, 7s. to 8s.; Cherbourg, 6s. to 7s. 6d.; St. Malo, 6s. to 7s. 6d.; Canary, 7s. 6d. to 8s. 6d. per cwt.

FARMINGTON: June 30.—Quotations:—New:—Jersey Flukes, 8s. to 8s. 6d.; Kidneys, 7s. to 8s.; Rounds, 7s. per cwt. Old:—Scotch Magnums, 100s. to 120s.; Bedfords, 90s. to 100s.; Lincolns, 90s. to 100s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending June 25, and for the corresponding period last year:—1892: Wheat, 29s. 6d.; Barley, 23s. 4d.; Oats, 21s. 10d. 1891: Wheat, 39s.; Barley, 28s. 3d.; Oats, 21s.

NOTICES TO CORRESPONDENTS.

* * PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

A TEMPORARY HOME: A Gardener's Daughter. The Servants' Home, 1, Sydney Street, Fulham Road, London, S.W.

ACER CAMPESTRE: X. The leaves are attacked by a mite, *Volvulifex aceris*.

BEGONIA BAUMANNII: C. Erichsen. We cannot say where the plant may be purchased. We do not observe that it is quoted in any of our best lists.

BROCCOLI, MEIVEN'S JUNE: T. M. & Sons. Solid well protected white curd; flavour mild; valuable for late use. Should be sown in the beginning of the month of May so as to be sure of coming in late. It would then overlap the Cauliflower season.

CELOGYNE CRISTATA: G. B. D. Your plants should have been repotted last March, soon after the flowers had disappeared, and we should now be

inclined to leave them until that time next year, as by this date the growths are in full activity, and little or no benefit would be derived from a shift during this season. You could, however, water them occasionally with much diluted liquid manure, taking great care not to allow any to touch the foliage. Baskets, or pans, are most suitable for this plant, and they should be well drained. The soil should be composed of peat and sphagnum moss, equal parts, to which add a little silver sand. Keep the plants an inch or so above the rim of the pan, and press the soil firmly about them. The temperature during the growing season should be about 60° to 65°, but after this is completed, they may be kept slightly cooler. Give plenty of water during the growing season, but be very careful that none is allowed to lodge in the centre of the young growths. After growth is matured, all the water necessary is to keep the pseudobulbs from shrivelling.

ELMS DYING OFF: T. R. B. It will sometimes happen that trees get planted over some unsuspected foundations of old buildings, and, in consequence of the thinness of the soil, they become starved to death, a process accelerated by the absence of manuring, even the fallen leaves being either blown away or swept up. An examination of the soil under the roots should be made, and if it then be found that our surmise is the correct one, the trees' lives might be prolonged by the addition of rich soil and mulchings of manure, annually applied.

EUPHARIS SEEDLING: G. C. The flowers differ in certain features from all those hitherto figured.

FIG LEAVES WITH BROWN SPOTS: E. Smith. Neither fungus nor insects. They are probably due to a moist unduly heated atmosphere.

GARDEN LABOUR: A Perplexed Gardener. There are many other items of information concerning the garden which you have not mentioned, which would assist us in forming a just opinion of the number of workpeople required; but even with the kind of information you furnish before us, you seem to be under-manned. Twelve men and two boys would be nearer the mark than ten men and two boys.

LÆLIO-CATTLEYA × PICEBE (C. Mossiae ♀ Lælia cinnabarina ♂), *Gardeners' Chronicle*, June 18, p. 790. By an error in the note accompanying the illustration of this pretty Orchid, *L. purpurata* was named as one of the parents, instead of *L. cinnabarina*.

NAMES OF PLANTS: Messrs. Stewart & Co. *Hordeum jubatum*.—*A. R. Z.* 1 (next week); 2, *Funkia cordifolia*; 3, *Tradescantia virginica*; 4, *Geranium pratense*; 5, *Lysimachia vulgaris*; 6, *Hippophaë rhamnoides*.—*C. M. P.* *Helianthemum vulgare*.—*Dickson's, Belfast.* *Papaver nudicaule* var. *pyrenaica*.—*Clibran.* *Thalictrum tuberosum*.—*A. C.* *Cattleya Warscewiczii*, commonly called *C. gigas*.—*W. D.* *Cattleya Mossiae*, a fairly good variety.—*S. Kintore.* 1, *Selaginella caulescens*; 2, *S. casia*; 3, *Melittis melissophyllum*; 4, *Anthericum liliastrium* major.—*P. S.* 1, *Jasminum revolutum*; 2, *Rheum palmatum*, var. *tanghaticum*; 3, *Agatheae celestis*; 4, *Gaultheria Shallon*; 5, *Thunbergia Harrii*; 6, *Diplacus glutinosus*; 7, *Lantana* variety.—*F. Clarke.* *Rosa arvensis*.—*T. C.* Send better specimens.—*C. H.* *Baptisia exaltata*.—*H. G.* *Peristeria aspersa*.—*A. P.* *Poa pratensis*.—*W. F. B.* *Salvia carduacea*.—*J. Tunnington.* *Aristolochia elegans*, a warmhouse species, see *Gardeners' Chronicle* for figure, p. 301, vol. xxiv., 1885.—*Correspondent.* 1, *Mesospidium sanguineum*; 2, 2, *Brassia verrucosa*; 3, *Sequoia sempervirens*, Redwood; 4 and 5, dwarf forms of the common Spruce, *Picea excelsa*.—*W. C.* Your plant is the Pyrenean variety of *P. nudicaule*.

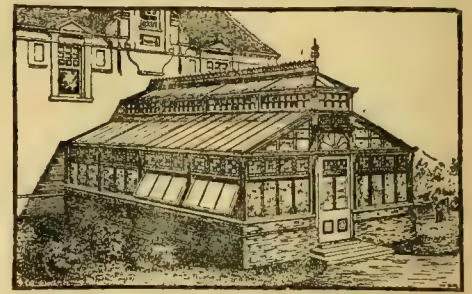
NEW STRAWBERRY: R. G. Fine in size, and of good colour, but in flavour it is not so good as some others.

PERFORATED LEAVES.—H. H. D. The leaves have the appearance of having suffered from hail. We know of no caterpillar or insect which would make such neat round holes in a leaf.

PLANTAGO LANCEOLATA: X. Branching of the inflorescence.

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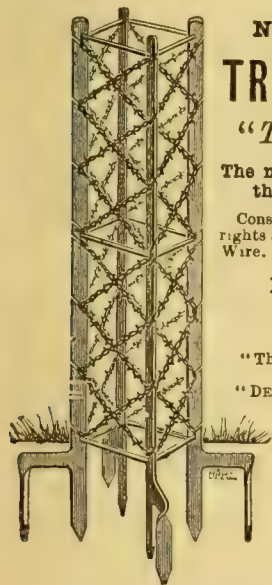
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testimonials required.—Apply, by letter, to Mr. CULVER,
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Tomatoes, Roses, Chrysanthos, &c., are grown for Market.
Sobriety and ability indispensable. Preference given to one
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One who knows the names of plants preferred. Small salary
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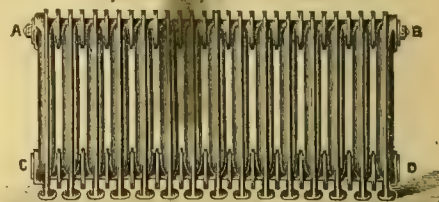
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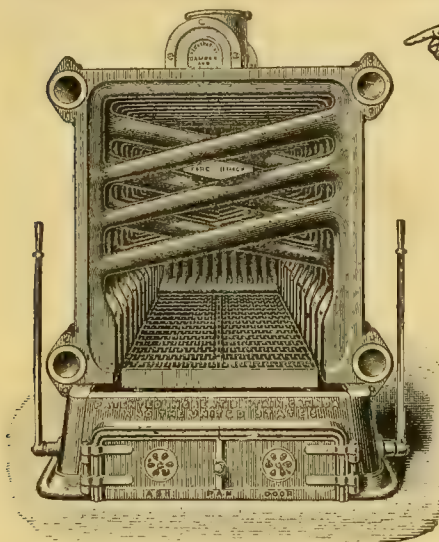
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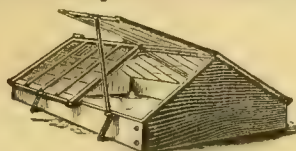
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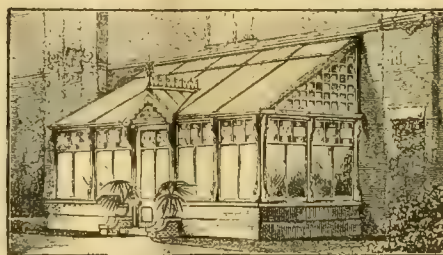
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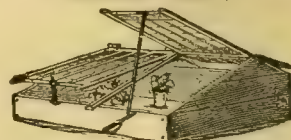
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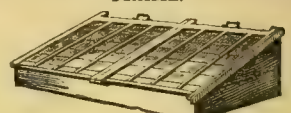
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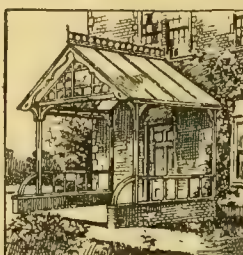


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Thursday Next.
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MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT**, July 15, at half-past 12 o'clock, absolutely without reserve, about 350 lots of extremely well-grown **ESTABLISHED ORCHIDS**, all in splendid health.

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N.B.—The whole of the well-known **EXHIBITION STOVE** and **GREENHOUSE PLANTS** will be **SOLD**, on the Premises, the Castle Nursery, Lower Norwood, on **THURSDAY**, July 21, 1892. See separate Advertisement.

Lower Norwood.

IMPORTANT UNRESERVED SALE of the well-known and valuable collection of **EXHIBITION STOVE** and **GREENHOUSE PLANTS**, which have been so successfully shown for many years at the leading London and provincial shows by order of **Mr. HENRY JAMES**, who is giving up exhibiting.

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Further particulars will appear next week.

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Extensive **SALE OF NURSERY STOCK**, at New Goldenacre Nurseries, Edinburgh, on **JULY 14, 1892**, at 11 o'clock Forenoon.

MR. DAVID MITCHELL, HORTICULTURAL AUCTIONEER, has been instructed by **Mr. D. W. Thomson** (owing to Dissolution of Partnership, and Alterations of New Glasshouses at New Goldenacre Nurseries) to **DISPOSE** of, by **PUBLIC AUCTION**, on the above date, the **WHOLE** of the **MAGNIFICENT STOCK OF PLANTS**, consisting of Thousands of Palms of all sorts and sizes, comprising choice *Kentias*, *Latantias*, *Sealorthis*, *Cocos*, and *Geonomas*; beautifully coloured *Dracenas*, and *Crotons* in variety, *Anthuriums*, *Pandanus*, fine lot of *Eucharis* and *Azaleas* (including large number of *Deutsche Perle*), *Gardenias*, Ferns, *Orchids*, *Pitcher Plants*, *Stove* and *Greenhouse Climbers*, *Liliums*, and *Miscellaneous Plants* in quantity.

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HIGHGATE HORTICULTURAL SOCIETY.

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Admission:—From 1 till 3, 2s. 6d.; 3 till 5, 1s.; 5 till 8, 6d. Children under Twelve Half Price.

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Mr. A. DEMANT, 9, Bismarck Road, Highgate Hill, N.

The above Grounds adjoin Highgate Station, G.N.R.

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<i>Lady Cullum</i> , tricolor	...	22s.	"
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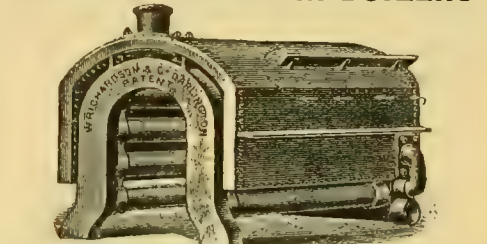
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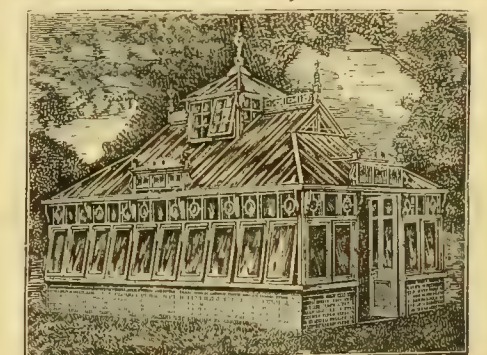
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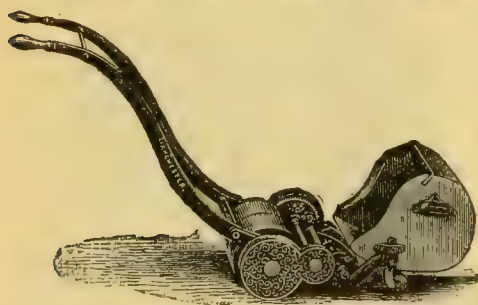
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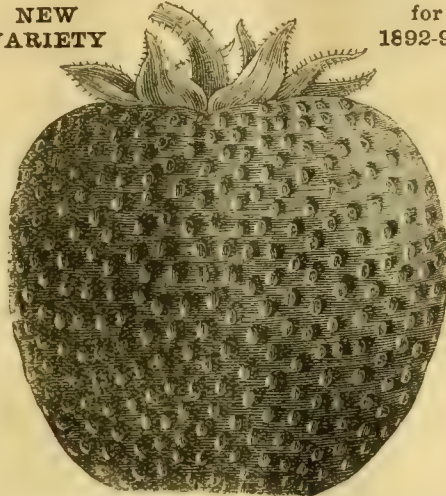
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The best first early Strawberry—very early—fine colour and shape, and the richest flavour.

Mr. DIVERS, writing in the *Gardeners' Chronicle*, June 11, says, "he was surprised to find a ripe fruit in the open on June 3, whilst 'King of the Earlies,' usually the first, showed no signs of colouring, the flavour of 'Scarlet Queen' being very good, and a variety likely to prove valuable as a first early."

Mr. G. MONRO, Salesman, Covent Garden Market, also writes:—"Far in advance of 'Noble'; fine flavour, and likely to make a marketable fruit."

Mr. GEO. BUNYARD, the well-known pomologist and nurseryman of Maidstone, says:—"I am pleased with your new Strawberries ('Cardinal,' 'White Knight,' and 'Scarlet Queen'). 'Competitor' is good this year, and stood the winter better than any." Price, £2 per 100; 8s. per doz. (in small pots, half extra).

LAXTON'S "COMPETITOR."

An excellent and very large and prolific Strawberry, following closely on the heels of 'Noble' with a distinct Apricot-like flavour, and a wonderful bearer. Plant, very hardy and vigorous. Price, £1 per 100; 4s. per doz. (in small pots, half extra).

LAXTON'S "WHITE KNIGHT."

Certificated at Fruit Conference, 1891.

One of the richest-flavoured and most distinct Strawberries ever sent out—a mid-season variety—scarlet on the upper and ivory-white on the under sides. Possesses the 'Hautbois' flavour. Prices, same as for "Competitor."

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Very large second early; fruit sweet, plant hardy; quite a distinct variety. Prices, same as for "Competitor."

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The best late Strawberry, and the largest and best late variety. A seedling from "British Queen," but much later; very distinct.

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LAXTON'S "COMMANDER."

One of the best varieties I have raised—from a cross between "British Queen" and "President." I can confidently recommend this Strawberry, both for forcing and the open ground.

Price, 8s. per 100; in small pots, 20s. per 100.

LAXTON'S "NOBLE."

Every season adds to the popularity of this wonderfully large and early fruit; immense breadths of it are now grown by all the principal market growers.

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"JOHN RUSKIN."

This variety is becoming very popular, on account of its earliness, hardness, and fertility.

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THOMAS LAXTON, Seed Grower, BEDFORD.



THE

Gardeners' Chronicle.

SATURDAY, JULY 9, 1892.

THE BOTANICAL GARDEN, DUBLIN.

JUST now, when the tercentenary celebrations of the University of Dublin, founded by Elizabeth in 1591, are taking place, we may specially allude to the botanical gardens belonging to that time-honoured institution.

The present Botanical Garden of Trinity College appears to be the third of its kind as attached to the University. On June 14, 1710, a site was assigned by the Board of that date for the erection of a medical school, and we learn on the best* of authority, that the laboratory and anatomical theatre were erected at the south-east corner of the "Physic Garden," which at that time appears to have occupied the site of the present library, or, according to some traditions, that portion of the present Fellows' garden lying between the library and the Nassau Street boundary. About the year 1790, there was a pressing want of a botanic garden in Dublin, and a Committee of the Irish House of Commons strongly reported in favour of one that should be common to the University, the College of Physicians, and the Dublin Society, and Provost Hutchinson zealously endeavoured to have this plan carried out by Parliament. On June 6, 1791, at a board meeting, a letter was read from the Dublin Society, asking the College to agree to the project of a joint botanic garden, and the reply of the Provost and Senior Fellows expressed a doubt as to whether the scheme could be entertained. Another attempt to form a garden between the College of Physicians and the Provost and Fellows of Trinity College likewise failed.

In the meantime, Dr. Hill, the Professor of Botany, had rented some ground at Harold's Cross, for the purpose of a botanic garden, and he was assisted to some extent by the College. It was not until April, 1801, that a Curator was appointed, and his salary was fixed in March, 1805, at £130 yearly, out of which he was to employ two labourers all the year round, and two in addition from March to December. It is clear that the plants and the houses in the Harold's Cross garden were to a very large extent, if not altogether, the private property of Dr. Hill, for we find in the College accounts of 1803 the following entry:—"Dr. Hill, allowed him by the award of the arbitrators, to whom the cause between the College and him concerning the botanic garden was referred, £618 19s. 8d." "From a statement of Provost Hutchinson, which remains, we gather that he was the means of securing for the Dublin Garden, through Sir Joseph Banks, many of the plants and seeds, brought to England from the South Seas by the

* Dr. J. W. Stubbs, *The History of the University of Dublin*, from 1591 to 1800, p. 182.

If You want LOVELY GARDENS, you must have BEAUTIFUL FLOWERS

Buy Now for a Gay Display. Alternantheras, in variety, fine stuff in pots, 2s. 6d. per doz., 16s. per 100; from stores, 10s. per 100. Calceolarias, Golden Gem, out of pots, 2s. per doz., 10s. per 100. Ageratums, in variety, in pots, 2s. per doz., from stores, 5s. per 100. Fresias, Lindens and Brilliantissima, in pots, 2s. 6d. per doz., 15s. per 100. Mesembryanthemum variegatum, in pots, 2s. 6d. per doz., 16s. per 100. Tropaeolum, Dr. Mules, crimson, rapid grower, 3s. per doz.; T. nain pygmy, scarlet, dwarf bedding variety, 3s. per doz. Begonias, tuberous rooted, for bedding, our unrivalled strain, dwarf erect habit, brilliant large flowers, mixed, 4s., 6s., and 9s. per doz. Musk, "Harrison's," 3s. per doz. Geraniums, Golden Tricolors, 4s. and 6s. per doz. Heliotropes, 3s. 6d. per doz.; Salvias, 12 in 6 varieties, 3s. 6d. Abutilons, 12 sorts, 4s. 6d. Fuchsias, 3s. per doz., 25 for 6s. 6d. Coleus, 4s. per doz., 25 for 6s. 6d. Lantanas, 3s. 6d. per doz.

Succulents for Bedding, &c. In variety, 6s., 9s., and 12s. per doz. Echeveria metallica 9s. per doz.; E. agavoides, 9s. and 12s. per doz.; E. farinosa and Peacockii, 6s. and 9s. per doz.; E. metallica rosea, 1s. 6d. and 2s. 6d. each. Haworthia crenata, 6s. and 9s. per doz. Mesembryanthemum vulpinum, 6s. and 9s. per doz.

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members of the exploring expeditions at the time."

In July, 1806, the site of the present botanical garden at Ball's Bridge, was leased by the College for 175 years, at a rent of 15 guineas per acre. The present garden was commenced in the autumn of 1807, and consisted of about 3 acres of ground as represented to-day by the botanical portion proper, viz., that situated within the old walls, and the oldest and largest of the trees in this enclosure were mostly planted in the spring of 1808. So that the fine and graceful American Elm, the tallest tree in the garden, the Copper Beech, the characteristic Cedar of Lebanon, and the Italian Stone Pine, the Manna, or flowering Ash, the weeping Elm beside the pond, and other less notable trees, have all grown to their present dimensions in a little over 80 years.

In 1832 an addition of about 2 acres was made adjoining the Blackrock Road, now Pembroke Road, so that the finest of the specimen Hollies, the weeping Beech, Pinus, Platanus, Oak, Arbutus, and Garrya here to be seen are only about 60 years old at the most, and show what has proved possible in a town garden in so short a time.

The latest addition to the garden was made in 1848 by the further enclosure of about 3 acres, or less, which now adjoins the Lansdowne Road, this having been taken in "with a view to admit of a screen being planted parallel to the older north-west wall, and thus afford sufficient protection against smoke, buildings, &c." The last extract from a report prepared by the first curator and designer of the garden, the late James Townsend Mackay, LL.D., illustrates his ability and far-seeing knowledge as a landscape gardener, for on these two additions, and the exquisite fitness of their fringe of Ilex or evergreen Oaks and Hollies depends whatever is verdant and beautiful, and sheltered in the garden at the present time.

From its commencement, the College Garden became an attraction under Dr. Mackay, to the most enterprising and studious of gardeners, and amongst others who graduated within its walls, we may mention Fraser, the celebrated landscape gardener and author of a road-map of Ireland; the late Dr. David Moore, afterwards Director of Glasnevin Botanic Gardens, and his brother, Dr. Charles Moore, now Director of Sydney Botanical Gardens, New South Wales, were also employed here in Mackay's best days, as also at a later date were the late Mr. Ambrose Balfe, afterwards secretary for many years to the Royal Horticultural Society of Ireland; Mr. Michael Dowd, and many others.

Mr. John Bain, A.L.S., who was Assistant-Curator in Mackay's time, afterwards succeeded him as Curator, and the gardens were much improved under his care. Altogether, Mr. Bain was over forty years employed in the garden. His keenness as a botanist, especially his critical knowledge of native plants, and his remarkable skill as a cultivator, were recognised by the most noted botanists of the time, such as Professor Allman, Dr. William Harvey, Sir W. Hooker, the late Mr. Jas. Veitch, Rev. Wm. Ellis, and Archbishop Whately, who for many years was a constant visitor to the gardens. At this time many then rare plants were grown here with a success perhaps never surpassed. Of such were *Vanda cœrulea*, the true old *Cattleya labiata* and *C. violacea* Harrisoni, *Renanthera ocoinea*, *Zygopetalum Mackayi*, *Mackaya bella* (a shrubby Cape Acanthad, founded by Harvey in compliment to Mackay) (since called *Asystasia* by Hooker and Bentham in

Gen. Plan.), *Erica Mackayana*, *Saxifraga elegans*, &c., were also introduced to public notice by Mackay. Here also Mr. W. Ellis and Sir W. Hooker alike saw *Ouvirandra fenestralis*, *Dionaea Muscipula*, *Cephalotus follicularis*, and the North American *Sarracenia*s, in luxuriant health and beauty; and the Cape *Disa grandiflora*, bore flowers as large, and as fine in colour, as Harvey had seen them on Table Mountain only a year or two before. Mr. F. W. Moore, now of Glasnevin, also had charge of the gardens, and by his zeal and well-directed industry contributed to their present prosperous condition.

Without undue boasting, it may fairly claim to be, in proportion to its size and general conveniences, a garden as rich in vegetation of all kinds as exists elsewhere in Europe. The main drawback is its proximity to dusty roads, and to the smoke of the town. Its best features are excellent shelter—for reasons before expressed, a remarkably deep alluvial soil overlying a gravelly subsoil resting on chalk limestone, abundant moisture, and a climate much to be envied by those of more northern latitudes, or farther from the sea.

Many plants only half-hardy elsewhere, even in the same latitude, here exist perfectly in the open air. Especially noticeable in the garden are the walls which, while giving shelter from the prevailing winds, also serve in the conservation of the rarer of half-hardy shrubs, such as the Loquat, Carob Bean, *Mutisia decurrens*, and the Chilean *Colletias*; Australian Blue Gums, or *Eucalypti*; the Japanese Wine-berry (*Rubus phœnicolasius*), "Winter's Bark" (*Drimys Winteri*) from Magellan, and *Wistaria* from Japan; *Clematis alpina*, a sort of shrubby *Anemone*, from Austria; *Veronica Hulseana* from New Zealand, and *Berberidopsis corollina* from high up on the Chilean Andes. *Choisya ternata*, *Smilax latifolia*, *Zizyphus (Paliurus) spina-Christi*; *Solanum crispum*, and *Mahonia nepalensis*, also do well here. Here and there also various interesting rock-plants from the limestone or chalk, the granite from basal Cambrian, or old red sandstone, are here grown in extemporised niches or "pockets" especially prepared for them. You may see the Pyrenean *Ramondias* so grown, also *Edelweiss* from the Swiss Alps, and *Androsaces* such as *A. lanuginosa* from the Himalayas. The last-named plant was first flowered in this garden by Dr. Mackay in 1842. *Dianthus*, *Linarias*, *Erinus* and *Iris* of many kinds are at home on these wall tops, and quite recently a special hollow plant wall has been erected for these and other denizens of the rocky places of the temperate world. A small pond fed by the Dodder River, is rich in *Aponogeton* and *Nymphæas*, several of M. Latour Marliac's hybrid kinds having passed through the last winter unscathed. The great *Gunnera manicata*, with leaves 5 to 7 feet across, is here quite at home, as also are the red and green-veined forms of *G. scabra*.

The plant-houses, eight in number, have been erected at different times, and although scarcely up to modern requirements, they are rich in plants for botanical and decorative purposes. *Doryanthes excelsa* has just flowered on a gigantic scape 10 feet in height. *Barnadesia rosea*, *Solandra viridiflora*, *Ruscus androgynus*, *Trochetia Blackburniana*, *Theophrasta Jussieu*, and *Dracæna Draco* also flower here every year. There is a small but representative collection of Orchids, including some rare species. On damp walls *Pothos celatocaulis* clings as tightly as if pasted, and there are collections of insectivorous plants and fine masses of the Killarney Fern (*Trichomanes radicans*). Two of the rarest of plants in the garden are *Xanthorrhæa hastata*,

which has flowered here, and the still more rare *X. quadrangulata*, both healthy specimens. There is also a large and venerable specimen of the giant Cycad of the Cape, viz., *Macrozamia Altensteinii*.

The strong points of the garden are its large herbaceous borders, now gay with many summer flowers. It is also pre-eminently a garden of hardy bulbous flowers of all sorts, Snowdrops, Crocus, Narcissus, Tulips, Iris, Lilies of many kinds; and to see the Crocus or the Narcissi at their best here, late in March or early in April, is a sight not readily to be forgotten.

Our illustrations show at fig. 6 (p. 35) a view of a pond overshadowed by a Weeping Elm with *Aciphyllas* and *Yuccas* in the foreground, yellow-berried Holly beyond, and *Arbutus Andrachne* to the right. At fig. 8 (p. 43) is shown a view of an old wall covered alluded to in the text. The photographs were executed by Mr. Greenwood Pim.

NEW OR NOTEWORTHY PLANTS.

ONCIDIUM ROLFEANUM, Sander.*

At the recent show of the Royal Horticultural Society, held in the Inner Temple Gardens on May 25 and 26, an *Oncidium* was exhibited by Messrs. F. Sander & Co., of St. Albans, under the above name, and to which a Botanical Certificate was awarded (see *Gardeners' Chronicle*, 1892, pt. 1, pp. 698, 700). Flowers have now been received of it, and it will, therefore, be advisable to place its characters upon record. It belongs to the *Microchila* section of the genus, and is allied to *O. Kienastianum*, Rehb. f., and *O. trilingue*, Lindl. To the former, known to me by description only, it must stand very close, yet there are characters which, if correctly given, prove that the present one is specifically distinct. The native country, too, may be different, as the present species is said to hail from Columbia, while *O. Kienastianum* was described as a Roelzian importation, "one might guess from Northern Peru." The sepals are brown, the upper one rather darker and irregularly margined with yellow; the petals yellow, spotted, and somewhat barred with brown; and the lip yellow, marbled with brown, and some dull purple on the basal auricles. The technical characters of this remarkable species are pointed out in the annexed description. It may be added, that several distinct species of this section of the genus have not yet been introduced to cultivation. R. A. Rolfe, Kew.

HEBENSTREITIA COMOSA SERRATIFOLIA.

Under this name Mr. Gumbleton forwards us a spike of a curious and pretty greenhouse plant. It has nearly glabrous, sessile, lanceolate, deeply and remotely toothed leaves. The flowers are very numerous, and densely arranged on erect, cylindrical spikes, 6 to 7 inches long. The individual flowers are small (less than half an inch in length), with a peculiar structure, the calyx being represented by two boat-shaped, somewhat leafy segments, united at one side at the base, and of which one is larger and acuminate, the other, simply pointed. The corolla has a slender tube as long as the calyx, and expanding at the top into a relatively broad 4-lobed limb, from each side of which are given off two stamens, one above another, each with a one-celled anther, and whose central disc is occupied

* *Oncidium Rolfeanum*, Sander.—Raceme long, slightly branched. Bracts concave, ovate-oblong, subacute, 6 to 8 lin. long. Sepals unguiculate, auricled at base; dorsal one with broadly ovate acute undulate limb, 8 lines long by 5 lines broad, brown, irregularly margined with yellow; the lateral ones 10 lines long, paler, and without yellow margin, but otherwise similar. Petals subsessile with broad base, ovate, acute, and with somewhat obliquely-reflexed margin, crispo-undulate, 7 lines long, yellow, spotted and somewhat barred with brown. Lip 7 lines long, three-lobed; front lobe elliptical-oblong, obtuse or subacute, very undulate, yellow, marbled with cinnamon-brown; side lobes rounded and upturned in the middle, forming a cavity on either side of the crest, yellow, margined with deep brown, constricted above the truncate-hastate dull purple base; crest complex, yellow, with a few dull sepia blotches on basal half; in front are situated three oblong yellow appendages, the side ones concave and obtuse, the middle one bidentate, and prolonged behind as a sharp keel to near the base of the much-swollen crest; at the summit is a pair of rounded calli, one on either side, and below these several irregular lateral teeth opposite the cavity formed by the upturned rim of the side lobes. Column 3 lines long, with minute linear fleshy wings. Native of Columbia.

by a broad orange-coloured blotch, contrasting with the creamy colour of the rest of the flower. The ovary is concealed within the base of the corolla-tube, oblong, green, with a little green honey-gland at one side at the base, and surmounted by a long linear strap-shaped style, projecting beyond the corolla-tube, and as long as its lobes, or nearly so. A single ovule hangs from the inner angle of each of the two cavities of the ovary. These details are not interesting, save to the professed botanist. Horticulturists, however, will admire the elegant flower-spikes, with their densely-packed mass of orange-blotched corollas, which produce an effect similar to that of the more highly-coloured Mignonette, though produced by other means. The orange blotch acts

of *O. Rossii*, *O. Cervantesii*, &c., though it possesses one or two anomalous characters. All things considered, I think it must stand next the Guatemalan *O. stellatum*, Lindl., which agrees in the absence of column wings, though that has much smaller solitary flowers with narrower segments. The white sepals and petals with the purple stain at the base recall in some respects a small edition of *Miltonia Roezlii*, yet the stalked lip and crest and other characters are unquestionably those of the first-named group. The large membranaceous rounded front lobe of the lip is white, covered with numerous light violet spots. The side lobes are reduced to an erect narrow margin on either side of the fleshy unguis, and terminate in an acute angle at the base

CULTURE VERSUS NATURE.*

"All knowledge is of use if applied aright; no knowledge is of use if applied awry."—Prof. M. Foster.

(Continued from p. 816, vol. xi.)

We have all heard the story of the gardener who inquired of the philosopher "why the weeds grew more rampantly in his garden than the flowers." "You see," said the wise man, "Nature is mother to the weeds, but she is only stepmother to the flowers." Even this view is not ever and always right, because we know (as Dean Herbert told us long ago) that certain species of plants are not always happiest, i.e., most luxuriant and re-productive in their native habitats. For example, we can take the Scotch Thistle or the English Sweet Briar, both



FIG. 6.—VIEW IN THE BOTANIC GARDEN, TRINITY COLLEGE, DUBLIN. (SEE P. 33)

probably as a sign-board to indicate the whereabouts of nectar. Thus directed in its course to the store, it must needs come in contact with the anthers, and remove some of the pollen to be conveyed to the strap-like stigmas of some other flower. The genus, which was dedicated to Hebenstreit, a professor at Leipsig, who died in 1757, belongs to Selaginaceæ, a family which fits in somewhere in the neighbourhood of Verbenaceæ, Scrophulariaceæ, and Myoporaceæ.

ODONTOGLOSSUM PLATYCHEILUM.

This very distinct and charming little *Odontoglossum* was exhibited by R. J. Measures, Esq., of Cambridge Lodge, Flodden Road, Camberwell, (gr., Mr. H. Simpkins), at a meeting of the Royal Horticultural Society on March 22 last, and was described and figured by Mr. Weathers, on p. 587 of the last volume. Nothing has been stated as to its origin, though I suspect it to be Central American, as its affinity is with the group

of the pair of acute tooth-like crests. It is a very interesting addition to the group. I append a full description of the plant.* *R. A. Rolfe.*

* *Odontoglossum platycheilum*.—Pseudobulbs ovoid, $1\frac{1}{2}$ to $1\frac{3}{4}$ inch long. Leaves narrowly lanceolate-linear, acute, carinate, 7 to 9 inches long; scape not half as long as the leaves, at present two-flowered. Flowers large. Bracts ovate-lanceolate, acuminate, 5 lines long. Pedicelled ovary sharply triquetrous, $1\frac{1}{2}$ inch long. Sepals subconvex, lanceolate-linear, shortly acuminate, strongly carinate, 1 inch long, bluish-white, with a dull light purple blotch at extreme base. Petals similar, except in the absence of the keel. Lip obscurely three-lobed; front lobe large flat and membranaceous, broadly ovate-orbicular, emarginate and obscurely crenulate, over 14 lines broad, by nearly as many long, white, with numerous light violet spots over its entire surface; side lobes reduced to an erect narrow margin on either side of the fleshy unguis, and terminating in an acute angle at the base of the keels, pale yellowish-white, with a pair of yellow spots on either side; keels consisting of a pair of acute teeth, pale yellowish-white in colour; unguis six lines long. Column clavate, eight lines long, pale yellowish-white; stigma suffused with pale dull violet, wings reduced to a narrow fleshy margin. *R. A. Rolfe.*

great nuisances to the Australian settlers; or the south European Cardoon, which has completely overrun some of the great Pampas or plains of South America, to the exclusion of their native vegetation.

Observation proves to us that some plants have a very wide range of climatic adaptability, such as the examples to which we have just alluded; while on the other hand we have plants that rarely do well except in their native places, such as the Durian (*Durio zibethinus*) and the Mangosteen (*Garcinia Mangostana*). Again we have the Chinese Orchid (*Phaius grandifolius*) that is naturalised as if wild in Jamaica, and the matted and luxuriant Reed Orchid of Singapore (*Bromheadia palustris*), or the lovely *Lycopodium cernuum* that practically defies cultivation.

Gardening is essentially an art of trying experiments, and this is so in part because our physical

* A paper prepared by F. W. Burbidge, M.A., Curator, Botanic Garden, Trinity College, Dublin, and read, in his absence, at the meeting of the Horticultural Club, Tuesday, June 7.

knowledge of plants is so imperfect. In a word, we have not yet learned that the laws of a plant's physical structure, formed as they are by climate, &c., must necessarily govern, to a great extent, its cultural requirements. Broadly speaking, gardeners know that a thickened epidermis (as in Cacti and succulent plants generally), means that they thrive in a dry atmosphere, and in sunshine rather than in shade. The same is true of plants with thick woolly, or hairy or powdered foliage. On the other hand, Ferns of a thin translucent texture, or delicate-leaved plants with a thin epiderm full of stomata, require a moisture-laden atmosphere, and more or less shade; but there are thousands of cases where we can *à priori* know nothing of a plant's powers of resisting heat or cold, sun or shade, moisture or drought, except by actual experiment. You may collect two plants from a mountain-side, 10,000 feet or so in altitude, near the equator, and one will be perfectly hardy in northern Europe, and the other will die at the first touch of frost. Why this is we do not fully know; but we may at least keep the question in our minds, and hope some day to solve the problem.

I have said, that *à priori* we can never be perfectly certain of the temperatures or soils most suitable for any one plant unless we are carefully told how it exists in a state of Nature. Even when this information is given, it by no means follows that our imitation of native conditions will prove to be best suited to the plant. As we have said, native conditions are not invariably those best for some plants, inasmuch, as they have thriven and increased better when introduced elsewhere. A good gardener is in an analogous position to a good physician, and will prescribe for a plant quite as reasonably as does the physician for a patient totally unknown to him.

It was until quite recently thought that unless a substance was in a soluble state, i.e., soluble in water in the soil, it could not be utilised by the plant. This view is now modified, since it has been found that roots themselves, and especially their growing points, secrete and exude an acid ferment that renders soluble or permeable many substances not actually soluble or dissolvable in water alone. In this way I have seen the underground stolons of "Couch-grass" (*Triticum repens*), bore straight through Potatoes and other fleshy tubers or stems; and only the other day I saw a shoot of *Tropæolum polyphyllum* that had come up through a brick that had happened to be in its way. In a word, the old story that roots follow the line of least resistance is not always, even if often, true.

I am far from feeling that I have exhausted this great subject, rather do I feel that I have merely touched the hem or fringe of the question in a tentative kind of way. "Culture *versus* Nature" is really a question to be solved by each one of us in our own gardens, and I sincerely hope that these observations may be a help rather than a hindrance to our so doing.

SUMMARY.

In conclusion it may be well to formulate a few of the observations in this paper, so as to facilitate discussion—that very life-essence of the reading of papers.

1. Cultivation is the most convenient method to enable us to obtain crops in any particular condition, or place, and at the time when most desired.

2. From the human point of view culture improves Nature, even at her best; but from the purely natural point of view, this is not always the case.

3. Culture is often best, easiest, and most profitable in climates similar to, even if not actually the same, as those where the plants are naturally found. In any case, suitability of soil and climate (other things, such as cost of land, skilled labour, and manures being equal) are the most essential points in profitable cultivation.

4. Prejudice in plant-culture is not to be tolerated. The golden rule is to try experiments in planting under different conditions, and be guided by the evidence of the plants themselves.

5. Human desires are mainly for succulent vegetative growths; large pulpy or sugary fruits or seeds in varying stages, as used for food, and flowers for use or ornament. But Nature's great aim and object, on the other hand, is a crop of fertile seeds to perpetuate and strengthen the race.

6. Seeing that in nearly every garden there exist different conditions of soil, climate, shelter, aspect, &c., it naturally follows that we cannot dogmatise on cultural methods. Even in the same garden, methods of culture must necessarily vary, just as do the seasons themselves.

7. Successful cultivation is at its best a matter of accurate observation and careful experiment, followed by logical reasoning powers.

8. Gardening, then, is not altogether an empirical art, although best learned or taught by practice in good gardens, in addition to good reading or lectures and demonstrations i.e., practice and well-directed study are better than is either alone.

9. Wild plants are improved, humanly speaking, by culture; so, on the other hand, cultivated plants, as a rule, either die out or revert to their type species if neglected or relegated to a wild state.

10. Note the nitrogen-fixing or accumulating power of leguminous plants.

11. Chemical analysis is not a certain guide to the vital action inside the living plant.

12. Plants may often be economically regarded as mere producing machines, and selection as an improving factor depends on some seedlings being better able to use up nitrogenous matter quickly than are others from the same parent.

13. Some plants have proved more luxuriant and prolific in other countries than their own, showing that plants in their native habitat are not always, even if often, at their best.

14. *A priori* we may have no evidence of a plant's elasticity, either under climatic variations or cultivation, but reasoning from analogy, and the instincts possessed by the gardener are generally enough to solve the problem.

15. Physical structure and the general appearance of plants alike suggest to experts a course of treatment, just as the signs of disease in a sick person would do to a physician who had to treat a patient to whom he could not say a word.

16. Roots are now known to have the power of dissolving substances by their acid secretions and exudations that are not soluble in water.

17. The main point is, for the cultivator to ascertain the dominant desires, so to speak, of the plants to be grown. Lime-loving plants are often peat-haters, and *vice versa*. A good analysis of soil will be a broad guide as to the dominant manures or other additions requisite for particular crops. Farm-yard manure, strengthened with chemical manures, is generally better than either alone, as we here secure the maximum of mechanical or physical, as well as of chemical stimulus. *F. W. Burbidge.*

ORCHID NOTES AND GLEANINGS.

EULOPHIELLA ELISABETHÆ.

"QUEEN ELIZABETH of Roumania's Eulophiella." How does this sound in Roumanian? In botany it is attached to a very curious and interesting plant, which Mr. Rolfe is unable to make fit into any known genus of Orchids. It has the habit of a *Catasetum* or *Eulophia*, with lanceolate plicated leaves, 2 feet long. The scape arises from the base of the young pseudobulb, is a foot long, and of a deep purple colour, as also are the boat-shaped bracts. The flowers are nearly circular in outline, sepals fleshy, stained at the back with rosy red, the tips white, in front like the petals—white; lip broad, three-lobed, articulated to the column, white; the anterior lobe bright yellow, with some bristle-like processes directed forwards. Near the base of the lip is a rather large fleshy semicircular callus, of a deep orange colour, and from which extend a pair of slightly diverging white keels, each terminating in a free tooth, tipped with orange. There is no trace of

either spur or sac. From these and other characters, for which we must refer to the original description. Mr. Rolfe places the plant in the subtribe *Cyrtopodieæ*, near to *Govenia*. The genus is, however, not very closely allied to any other. A figure is given in the May number of the *Lindenia*, t. 325.

ODONTOGLOSSUM PESCATOREI VAR. LINDENIÆ.

A variety characterised by having either a single violet blotch about the centre of each segment, or two or three smaller ones close together in the same position. *Lindenia*, t. 329.

SACCOLABIUM BELLINUM.

A Burmese species discovered and introduced by Boxall. Sepals and petals greenish-yellow, with numerous large reddish-brown spots, lip bag-like, white, with some purple spots on the interior, limb flattish, yellow spotted, edged with white. *Lindenia*, t. 330.

STANHOPEA MOLIANA.

A new Peruvian species described by Mr. Rolfe in the *Lindenia*, t. 331. The sepals are pale yellowish-white, spotted with light reddish-purple; petals white with ring-like spots; lip white, purple spotted; column winged, yellowish-white. The species is dedicated to M. Jules Van Mol.

TRICHOPILIA BREVIS.

A new Peruvian species described by Mr. Rolfe in the *Lindenia*, t. 332. It is a very attractive little plant, its greenish-yellow sepals and petals, with a few large chocolate blotches contrasting effectively with the broad white lip. The lamellæ of the disc are yellow, and there is a faint stain of the same colour on the base of the front lobe of the lip.

CATTLEYA MOSSLE WAGNERI.

A grand example of this fine white *Cattleya*, and which showed some deviations from even the best forms of the ordinary one, comes from G. R. Le Doux, Esq., Langton House, East Moulsey. Its petals are very broad, the sepals flat and not reflexed, and the large labellum has an elongation and fringing of the front lobe similar to that seen in *C. Mendeli*. The plant was procured from the Tau'z collection, and its beauty has previously called forth remark.

CATTLEYA WARSCIEWICZII (GIGAS).

An example of a noble variety of this—one of the best examples of any *Cattleya* that we have observed, comes from the gardens of Gerard Orby Sloper, Esq., Westrop House, Highworth, Wilts. The spike bears six grand flowers, fine in form, of extraordinary size, and rich in colour.

CATTLEYA MENDELI EMPRESS OF INDIA.

A flower of this surpassingly beautiful variety is sent by R. Brooman White, Esq., Arddarroch, Garelochhead. The sepals, which are broad and flat, are white tinged with lilac; the broad petals are similar in colour to the petals, but bear up the middle of the extreme half a rich crimson band or feather, after the manner of *C. Trianae* Backhousiana, and therein and in the glowing purplish crimson of its fringed labellum consists the distinguishing features. It is very distinct, and not likely to be confused with any other variety of *C. Mendeli*.

DISA TRIPETALOIDES.

This pretty species, and the fine crimson *D. racemosa*, are now quite at home in our gardens, and are found to be even more free in growth and flowering than *D. grandiflora*. Two dissimilar examples of *D. tripetaloides* have been in great beauty for some time in the gardens of Mrs. Brightwen, The Grove, Stanmore (gr., Mr. J. W. Odell). One variety has blush-white flowers, profusely dotted with dark rose, and the other is pure white, and the plant has seventeen fully expanded flowers, and nine buds on one spike. This spike, with just the addition of two or three fronds of Maidenhair, would make a choice spray for a lady's wear, its form for such a purpose being perfect.

ODONTOGLOSSUM LEROYANUM X.

In our last issue we quoted from the *Reichenbachia* what we now learn was an inaccurate statement.

The plant in question was obtained by M. Jacob, the head gardener at Armainvilliers, who effected the cross, raised the seedling, and finally had the pleasure of flowering the plant.

A WHITE MASDEVALLIA.

Messrs. Sander send us a photograph of a pure white form of *Masdevallia Harryana* grown in the garden of Henry Graves, Esq., of Orange, New Jersey, U.S.A.; Mr. Rolfe has also received a flower. We hope shortly to publish an illustration and description of this valuable novelty.

NURSERY NOTES.

BEGONIAS AT FOREST HILL.

MESSRS. JOHN LAING & SON have thousands of these wonderfully decorative plants in full bloom at the present date, and when a few days ago we were at Forest Hill taking the following notes, we were not at all surprised to hear Mr. Laing say that they were just looking their very best. It is almost needless to talk of the improvement that Messrs. Laing and other well-known raisers have effected in this genus, as any one who takes the slightest interest in horticulture has been surprised again and again at the wonderful "novelties" that this firm and that firm have introduced. The progress has been just as great in the double as in the single-flowered section, and *vice versa*. Success after success following efforts directed toward improving the flower in form, in substance, and in colour, it at last became imperative to turn the attention to the stem and general habit of the plant. Until now, no grower can be found who does not make the "habit" of his strain the first consideration. The following varieties are some that especially attracted our attention amongst an unlimited number almost equally meritorious.

Doubles.—Although the single section create a greater blaze of colour, and are perhaps rather more decorative, the double varieties are the most pleasing when studied on the individual plant, and one of the prettiest varieties in this section is the new "Picotee," which has large erect flowers of a creamy white, and the margin of the petals or florets are bright pink, giving it quite a Picotee appearance.

Lady Theodora Guest, is another new one, with large Camellia-like blooms of an Apricot salmon colour.

A very pretty variety is Lady Gertrude, with flowers of salmon pink, and possessing a white centre. Sir Trevor Lawrence is an extra fine brilliant crimson; it has large flowers, and has erect habit. This is by far the best of the double crimsons. A very floriferous variety is the new Duke of Fife, the blossoms are rosy crimson, large and erect. Lady Dorington has all the delicacy of a blush-pink, but the flowers are very large, and belong to the Camellia-formed section. Another Camellia-like bloom is that of Mrs. Hudson, a variety named only this year, with deep magenta-rose-coloured blossoms. Lady Wantage is also new; it is rosy-pink, and is very persistent. Baron Schroder is a scarlet one, of three years only; it is a fine variety, erect and free. Laing's Triumph is the largest double yet produced; the flowers are a bright coral colour. Laing's Rosebud is the perfection as yet reached of another kind of bloom, viz., the rose section; it opens almost exactly like a Rose, and is a delicate blush-pink. The last double that we can mention is that which was named last week, in honour of an old and successful Begonia-grower and raiser, Mr. W. Clifford: it is very large, belongs to the Camellia type, and the colour a deep rose.

Singles.—The first of the singles we were obliged to notice was Mrs. J. Chamberlain, introduced last year; it is large and good, and colour a delicate blush. Avalanche has very pure white flowers, and are exceptionally large. Constance, another white, is wonderfully floriferous, and presented quite a picture of beauty. Lady Foley is a suffused salmon variety, with dark centre very distinct. Delicatis-

sim (improved), exceedingly delicate blush, edged with pink or rose, and flowers large. Duchess of Westminster, of last year, is a very fine variety; the centre is nearly white, with a good band of rose. Leah (improved); this a golden-yellow variety, much larger and a deeper colour than that of the same name raised two years ago. Sir Thos. Payne is a good deep glowing crimson, of exceptionally good habit. A fine golden-bronze variety is that of Miss E. F. Backlaws, the foliage of which is also prettily marked.

Leviathan, brought out three years ago, is the largest of any of the single-flowered kinds. Its flowers are rose-coloured, and its habit very strong. Lady Whitehead, introduced last year, had large spikes, carrying five or six flowers of a charming rose colour, with blush centre; it is a very strong grower. Lady Pigott is a new and a first-rate free-flowering variety; flowers are a beautiful shade of salmon. Duchess of Leinster is also a new variety, and very strong growing; its flowers are a beautiful orange colour, and the plant is exceedingly striking. Mr. E. G. Hill, a salmon-rose of last year, is a dwarf grower of remarkably good habit. Darkest Africa, as its name would suggest, is the darkest-coloured flower yet obtained. Mrs. Blundell Maple is a fine bronze-orange, of exceptional merit and beauty.

There are, of course, a great number of seedlings that have not yet received any name by which they can be known, but which are quite deserving of such, and are only awaiting the firm's opportunity of dealing with them. One of the prettiest was a strong-growing variety of a charming blush-pink or flesh-colour. Another was a rosy-pink flower of enormous size and good habit, and a third had large primrose-yellow coloured flowers, likewise of good habit.

There are also some double varieties that from their pendulous habit, are especially suitable for baskets, the best perhaps of which are Alice Manning, primrose-yellow; Richardson's Favourite, crimson-scarlet; and Alba Rosea, a rosy-pink variety with white centre.

Messrs. Laing have almost finished planting for their summer and autumn display outside, where upwards of 300,000 plants are used, and where one of the finest sights to be seen, may be witnessed during August and September, when anyone who may go to see them will feel amply repaid.

ROSES AT CROYDON.

"MULTUM in parvo!" might well be inscribed upon the entrance to Mr. C. J. Grahame's beautiful Surrey garden, the owner of which fought so successfully the battle of the small men with the National Rose Society. It is not, as might be imagined, a garden of Roses alone, for, like all true gardeners, Mr. Grahame is not a "one plant" worshipper, but is catholic in his horticultural tastes. Although the place is of small extent, a great deal of pleasure is obtained from it at almost all seasons. Beginning with Snowdrops, Chionodoxas, Scillas, and Daffodils, and going on to May-flowering Tulips and Irises, then Roses, followed by Lilies (and what vigorous clumps of these he has!), Delphiniums, Anemone japonica, Harpaliums, and a multiplicity of other plants, and all of which are well attended to.

On June 25, some of Mr. Grahame's Roses were in splendid condition, especially the varieties A. K. Williams and Edith Gifford, and fit for exhibition were the following:—Gustave Piganeau, Margaret Dickson, La France, Dupuy Jomain, Prince Camille de Rohan, Grace Darling, Marie Baumann, Charles Lefebvre, Mrs. George Dickson, Victor Hugo, Duke of Wellington, Gabrielle Luizet, Heinrich Schultheiss, Marie van Houtte, Anna Olivier, and Madame Hoste; so that it will be perceived Mr. Grahame could have put up an eighteen box on June 25, although it is called a late season in most places.

I noticed in his front garden a very fine bush of Rose Blairii No. 2, literally laden with its blush-pink very large and double flowers, some 200 of which were on view, to arrest the warm admiration of

passers by. I gleaned one or two little interesting facts from Mr. Grahame anent this old favourite that may be worthy of putting on record. For growing of this Rose, the information may not be thrown away by stating the fact that it will not stand anything but light-pruning, otherwise it will not bloom.

A singular fact I noticed (as exemplified in this particular tree) is, that the Briar grows equally with the rose, both developing unusual size. Because so little pruning is necessary with this variety, it makes a fine pillar or climbing Rose. J. B.

NEW EXHIBITS IN THE KEW MUSEUMS.

AMONG the most important of recent additions to the Museum of the Royal Gardens, Kew, is a very fine collection, illustrating the very varied uses of Bamboos in Japan. This interesting collection, which has been presented by Mr. Charles Holme, F.L.S., who got it together during a residence in Japan, has been arranged in special cases in Museum No. 3, where it will no doubt prove a source of great attraction during the summer. Comparing the uses of Bamboo in Japan with those of other countries—as, for instance, India, Burma, and China—Mr. Holmes says these uses are in divers respects more limited in Japan than in some other countries. Unlike the people of India and Burma, the Japanese do not build houses of Bamboo, neither do they make bridges, nor boats with sails complete, as do the people of Formosa; nor chairs, nor couches, and paper, as the Chinese do. This is explained by reason of the abundance of excellent timber in Japan, which is admirably adapted for constructive work; besides which, the industrial arts have attained in Japan a much higher degree of perfection than in many other places where the Bamboo is largely used. "Taken together, these facts will account for the absence in Japan of many applications of this material that are found elsewhere; at the same time also they account for many clever adaptations of the material which an intelligent people only could have devised. When used by them, although in some instances its cheapness is its main recommendation, it is generally because the material is the very best that could be secured for the purpose."

As might be expected, in the collection now at Kew, baskets in their very numerous forms are specially apparent, and in this connection Mr. Holme says there is probably no finer basket-work made in the world than the Bamboo-work of Japan, and he suggests that English basket-makers might study with advantage some of the ancient examples of Japanese-work. Among baskets represented in the collection may be mentioned a fish-seller's basket with a hollowed lid, upon which the fish is dressed. A basket used by shopkeepers for holding copper coins, a basket for carrying dirty pots to the kitchen, market baskets, charcoal basket, which answers the purpose of a coal-scuttle; baskets in which gifts of flowers, fish, and other articles of food, are sent.

Amongst the most interesting of other objects may be mentioned a bundle of tally-sticks, which are used in the following manner:—When a number of packages of goods are being delivered at a warehouse, a man stands at the door, and gives a stick to the coolies for every package they carry in. The coolies hand these sticks to another man in the warehouse. This man has a box before him having ten compartments, each of which holds ten of the tally-sticks. When the box is full of sticks, he knows that 100 packages have been delivered.

An ingenious contrivance is a scarecrow, which consists of a piece of flat wood, about 8 inches long, and 6 inches wide, upon which pieces of hollow bamboo are loosely strung. A post is placed firmly in the ground, and a cord is tied to the top of it; the cord is fastened at intervals to other posts, which are not fixed in the ground but only stand upon it. Upon the cord between the posts the scarecrow is hung; the other end of the cord is held by a boy who pulls it at intervals, which sets the cord swaying to and fro, and the Bamboos rattling against the boards effectually alarm the birds.

Besides these more practical applications, are many illustrations of a more artistic nature, including a beautiful piece of workmanship in the shape of a small medicine-box, veneered with a very thin coating of bamboo, and finished off with remarkable accuracy of detail. These are but a few items of a very varied and interesting collection.

Another collection of a different character, but withal of an instructive nature, consists of a set of implements, &c., such as are used at Singapore in the preparation of Gambier or Terra japonica from the twigs of *Uncaria Gambir*. The implements are those that are in actual use, such as a knife for cutting the Gambier plant in the field, a chopper for chopping up twigs and leaves of the plant before putting them into the boiler, a basket for carrying the freshly-cut Gambier leaves to the factory, a rubbish basket for taking away the spent leaves to the pepper plantations or Gambier fields for manure. One of the most remarkable instruments in the collection is a long wooden five-pronged fork, the prongs being arranged in a cylindrical fashion, and not laterally as in an ordinary fork. This unwieldy instrument is cut out of a solid piece of the hard wood of *Hoteia sideroxylon*. During the process of boiling, the Gambier leaves are incessantly prodded and stirred with this heavy instrument, the wielding of which is said to be the heaviest work in connection with Gambier manufacture. Another interesting implement, is a long thin-pronged curved fork, made of the same hard wood, and used to remove the spent leaves from the boiling Gambier, when it becomes thick or syrupy, when it is poured into a tub and stirred or rather churned with a piece of wood of the Mahang (*Macaranga hypoleuca*). In this tub (one of which is in the collection at Kew) the Gambier sets, after which it is cut into cubes or squares, and carefully dried, when it is ready for exportation.

A model of a Gambier factory completes the set in the Kew Museum, which fully illustrates the crude manner of the manufacture of this important tanning substance. *John R. Jackson, Kew.*

A MORPHOPHALLUS CAMPANULATUS.

SOME plants of this singular East Indian Aroid are now in flower at the Edgbaston Botanic Gardens, Birmingham, and are objects of much curiosity with their quaint spathe of an inverted bell shape, with the clapper-like spadix rising from the centre, and rising about 6 inches high from the roots. The flowers, only one upon each plant, is about 6 inches in diameter, and of a deep chocolate colour, and giving out at times an unpleasant odour which is apparent throughout the house. Another striking Aroid, *Godwinia gigas*, is growing in the tank-house, with a strong thick stem fully 6 feet in height, and beautifully marked, and is just now forming new foliage at the top.

In the same house a not often seen stove climber, *Stigmaphyllon ciliatum*, with its bright yellow flowers is now in bloom. A large specimen of *Anthurium Brownii*, a tall-growing kind with long footstalks and large bold foliage, is now in bloom, but the flowers are very uninteresting.

Some fine specimens of the night-blooming Cactus trained to the roof of an intermediate house, have also been objects of interest whilst blooming, from the peculiarity of the blooms opening in the evening. Two kinds have flowered, viz.:—*Cereus grandiflorus*, and *C. McDonaldæ*. In one of the conservatories, several plants of the very pretty double *Azalea rosæ-flora* are in full bloom, yet how seldom it is seen. Probably this arises from the fact of its being a small-growing kind, and does not soon make good plants from cuttings, but as seen at the Edgbaston Gardens it is a charming decorative plant, abundantly laden with light salmon-red flowers; and blooms so late, after all the other kinds are out of flower.

Out-of-doors, in what is the herbaceous nursery, two large beds of *Mimulus cupreus* are masses of bright brownish-scarlet flowers, and very lovely

they are, having stood out all the winter, and the position is rather a low one in the gardens, and not far from a large pool. *W. D.*

COLONIAL NOTES.

THE BOTANIC GARDENS, HONG KONG.

THE following letter was addressed by the writer to an old colleague in the Royal Gardens, Kew, and obligingly handed to us for publication:—

"Having been more than three months in Hong Kong, I am sending you my first impressions, and some few particulars about the place. Although the island is within the tropics, the vegetation is anything but luxuriant. This is to be accounted for by the poorness and shallowness of the soil, which in many places is not more than 1 foot or so thick, resting on solid granite. Tree planting has been carried on very extensively, and considering the conditions under which they have to grow, the trees have done remarkably well. The island must at one time have had a very barren appearance. Of course there are no trees here now which can compare with the Oaks and Beeches at home, a tree 50 feet high is considered to be a big one. *Ficus retusa* is principally grown for planting along roadsides, and *Pinus sinensis* [the original *P. Massoniana*, Ed.] for planting on the hills. When rambling over the hills in February, I came across *Spathoglottis Fortunei* and *Phaius grandifolius*. The former was without leaves but in flower, and was growing where it would be saturated with water in the summer time. The latter was growing beside a stream, and was throwing up some immense spikes of flowers, although the leaves were in a most ragged condition.

"*Drosera Loureiri* is very common in bogs, and it is a very pretty plant, much resembling *spatulata*. *Gleichenia dichotoma* is found all over the island, sometimes in the full sun, and at other times growing where nothing else will grow in dense shade. Those plants that get partial shade do by far the best. *Gleichenia excelsa*, much less common than the preceding species, has a most imposing appearance when seen clothing some steep hillside with its long pendulous fronds.

I ought to say a word or two about some of the plants in the Botanic Gardens. *Renanthera coccinea*, that stubborn thing to flower at home, flowers here with the greatest freedom. We have a lot in pots, and every piece that is 2 feet long is sending out a strong, healthy panicle of flowers. They are grown in the full sun, and during the winter get no water whatever, except an occasional shower or two. *Phalænopsis grandiflora* does remarkably well on the aerial roots of a large *Ficus retusa*. There are several plants in flower now, but unlike those at Kew in flower at the same time, they will be unaffected with the fog. *Vanda concolor*, with blossoms of a dirty brown colour, grows and flowers freely with us, on various trees in the gardens. I remember there was a small plant at Kew, but I never saw it in flower there. The collection of Orchids is not large, the principal genera being *Dendrobium*, *Vanda*, and *Eria*. There are only six South American species in the garden, and five of those I brought out from Kew. *Aristolochia Westlandii* is now flowering, but although it produced hundreds of buds, it has only brought six to maturity, notwithstanding that the plant is in robust health. English vegetables are grown from October to March; after the latter month it is too warm for them. It is very amusing at first to see the Chinese coolies digging with bare feet. Of course, the skin of the sole is quite leathery, as they never wear foot-gear of any kind. The climate is not at all bad so far—very much like that of an English summer, but without the rain. There are numbers of people who have been out here for ten and twelve years, and are as well as ever. From what I have heard, whiskey will do more harm in one year than the climate will do in ten. The place is well drained, and we have the electric light in the principal streets, so that it does not look altogether

uncivilised, and, judged by my experience during the last three months, Hong Kong is a very decent place to live in." *W. J. Tutchet.*

NEW ZEALAND.—IPOMOPSIS ELEGANS PICTA.

This is a gem I had from Benary, of Erfurt, and although marked as a biennial it flowered with me the first year from seed. Its deeply-cut, Fennel-like foliage is very striking, with its pink *Bouvardia*-like flowers. But why the specific name *picta* is added, I could not tell, until I examined it with a somewhat powerful glass; then, like all flowers, its additional charms came out. Indeed, all true lovers of flowers should avail themselves of one of these instruments. I have also succeeded, after many attempts from English seed, which proved futile, in getting seed to germinate from the same firm, of that spring gem, *Adonis vernalis*. A dwarf variety of this *Ipomopsis* would be a great acquisition. Will any of your correspondents kindly inform me where I could get a little seed of *Primula imperialis* and *Ramondia pyrenaica*? *T. Smith, Seedsman, &c., Timaru, N.Z.*

SINGAPORE.—PARA RUBBER.

Mr. Ridley remarks in the annual report of the Singapore Botanic Garden, 1891, that no fewer than 8 acres of this tree, *Hevea brasiliensis*, have been planted at Sumbawang, that the trees are thriving, and the produce so good in quality as to render it desirable to plant it very extensively. More seed is, therefore, urgently required. Fast as the tree grows, it will be ten years before it is at best stage for tapping.

JAMAICA.

The last number of the *Bulletin* of the Botanical Department contains articles on diseases in Bananas caused by fungi, eel-worms, &c. A disease in Coconuts has been stayed by the simple expedient of burning the foliage.

CEYLON.

Dr. Trimen reports in his last report on the Botanic Gardens of that island, an increase in the export of tea for the year 1891, amounting to no less than 21½ million of pounds! Coffee cultivation has, Dr. Trimen thinks, been too hastily abandoned. The export of Cinchona fell to the extent of over three million pounds. "The history of Cinchona culture in Ceylon—a most interesting and instructive one—is drawing to its close; the future of the industry belongs to Java, which has followed wiser counsels and knows how to wait." The export of Cacao is increasing. Progress is being made with the propagation and distribution of the various Indian rubber trees. Dr. Trimen's report is unusually interesting, and bears striking testimony to the utility of botanical establishments in our several colonies.

THE ROYAL SCOTTISH ARBORICULTURAL SOCIETY.

THIS Society represents an art and industry of great significance, viz., the proper planting and management of timber trees, and ornamental plants and shrubs.

I need not state that the judicious and scientific knowledge of such industry embraces important details. This Society has been in active operation for twenty years, and continues to be supported with much energy and talent. No effort is spared to visit annually some of the largest tracts of forest plantations in Scotland, in addition to the most famed collections of rare and ornamental Conifers and shrubs. These inspections are great object lessons, and conduce to improve and enlarge our thoughts as to the character of our more recently-introduced varieties, and to form conclusions as to the class of plants best adapted for profit and adornment.

But while our foresters are thereby acquiring a higher culture, are they finding a corresponding outlet for their improved knowledge and abilities? Are our proprietors engaged in planting to such an extent as to occupy them fully, and give scope for their acquirements in actual practice? Forestry is not only a theoretical study, but more particularly a practical pursuit.

It is to be lamented that, while arboriculture is diligently studied, there is a growing indifference year by year to extend our woods. In every county there are thousands of acres unfit for cultivation, and miles of naked hills and mountains so prevalent in Scotland, and which might be converted into purposes of utility. In this county more than one-half is unsuited for crops and pasture, viz., 150,000 acres, and yet there are only about 5000 acres of woods, including coppice. It is a well-ascertained fact that the extent of young plantations is yearly falling off. During a period of sixty years there was a falling off of 179,000 acres in Scotland, while the total forest area is 730,000 acres.

It is essential to have an abundant supply of home-grown timber. Our demands are largely increasing, with the reflection that the area being planted is yearly getting less. We have serious prospects to encounter—the increased demand for native timber, with the diminution in its supply. Let me do the justice of stating that such falling off is not because our proprietors are unwilling to engage in forest-planting. The ordinary drawbacks arise prominently to the mind of every proprietor when contemplating the undertaking of extensive plantations. Fences are expensive, conveyance of men and trees are difficult; the heavy outlays become an investment of years, with the remote prospect [of the planter] ever receiving any returns. However public-spirited, wealthy, and desirous many of our proprietors may be to embark upon extensive schemes of afforesting, yet the serious difficulties of the first outlays block the way. It is apparent if the obstacle of the original expenditure could be overcome, a much greater breadth of land would be planted. The maintenance of an abundant supply of home-grown timber is not of personal but national importance. This is not simply a proprietor's question, but is surrounded with considerations of weighty and national moment, and must demand immediate and special legislation. The legislation of the present day has outgrown the stereotyped limits of statutes and enactments, and whenever a condition of circumstances arise in any district or among a large section of the community which was unforeseen and unavoidable, and which private efforts or outlays cannot overtake, the Government is ready to combat these public emergencies. For instance, the Highland crofters are offered harbours, railways, roads, boats, &c., to meet their present requirements, and during six months from 8,000 to 14,000 hands had constant employment in Ireland on the recent Irish Relief Works, and the Construction of Railway Works at Government Cost and Inspection. In the case of the distress of 1880, a loan of two millions at 1 per cent. was granted to Ireland. These means of assistance, while tiding over present emergencies, conferred general and lasting benefits to all classes. Recently £2000 was granted to the three counties, Dumfries, Kircudbright, and Wigtonshire, to instruct their farmers as to the best modes of making their cheese and butter.

The financial position of the imperial exchequer has become so good, they can scarcely determine how to allocate the huge surpluses that yearly accumulate, from which surplus a free education is granted to every family in England and Scotland, and with large balances remaining, it is proposed to pay one-half of all the parochial and other local rates in Scotland, so that what were strictly private duties have been recognised as national burdens and responsibilities.

I maintain that the ambition and function of our Scottish Arboricultural Society is not strictly to acquire a sound knowledge of the art of forestry, but more particularly to hasten on and develop the raising up of greater quantities of home timber. This I consider can only be accomplished upon the now universally recognised principle that it will satisfy public requirements by granting Government advances to all landed proprietors to improve their waste lands, and cover our bare hills and unproductive land with trees for use and ornament, and which if neglected will result in national misfortune. I

think an influential movement in this direction should be originated by the Royal Arboricultural Society. *Garlies Mitchell, Stranraer, Wigtownshire.*

SCOTLAND.

EDINBURGH CITY GARDENS.

It is generally admitted that no city in Britain has finer gardens than Edinburgh (of course this does not mean parks, which are generally large suburban gardens), and we think they are never so beautiful as during the "leafy month of June." Princes Street and Queen Street Gardens are just clothed in their richest verdure. The trees of various shades have not as yet become disfigured with soot, and the spacious lawns are at their best; and though the late showery weather has created extra labour in keeping the grass sward, yet such is in favour of appearances? The flowering season, although so short for ordinary bedding plants, is giving complete satisfaction, still I should be much



REV. H. H. D'OMBRAIN.
Hon. Secretary, National Rose Society.

better pleased, were I a citizen of Edinburgh, to see the beds in the low grounds dispensed with, only turf taking their places, which has a beauty of its own which no bedding can out-rival. We have been always accustomed to admire the grass when not interrupted by patches of mould, or shrubs and trees placed about on it like sentinels; and it must be admitted that the gardens indicated are vastly superior in this respect (by the surface disfigurements being absent) to most other city gardens; and no one has a keener sense of this than the talented and popular superintendent, Mr. McLeod. It is often stated that this tree and the other should be introduced; but of course those who would improve matters in this direction have a very remote idea of the difference of trees in the fresh country air and those struggling in smoke and dust. So it is that the city planters have a limited choice of trees and shrubs. In London we have had the making of and superintendence of numerous squares (or rather the gardens enclosed in them), and know no town so difficult to deal with. Yet the Planes and a few other species have developed remarkably, and the everlast-

ing Privet struggles on under the use of the shears for a long time. Those who have charge of such places under these untoward circumstances, learn by experience what to plant and how to treat them afterwards. We have seen in Chelsea some of the finest Apples ever grown in this country, and young trees remain always vigorous and healthy. On the south side of a large house off St. Paul's Churchyard, we have seen the best outdoor Vines, which grew with vigour. It is proved that trees with smooth glistening bark and foliage of bright glossy-like surface stand the smoke and dust best. There is one shrub which seems to thrive everywhere, and grown very extensively in the Princes Street gardens (the Golden Elder), and does good service with its fine golden foliage when well interspersed with dark foliaged shrubs or trees. This shrub grows to great size in one season when soil is deep and rich; but then, under these conditions, its colour is very imperfect. It can be cut down annually, and kept always about the same size, and may be kept dwarf by lifting, cutting off strong roots, and replanting in poor but firm soil in the full sun; on soil sharp, but not rich, it becomes as yellow a golden feather, like the most useful and hardy *Aucuba maculata* (old *A. japonica* of gardens). The Golden Elder may be over-planted (and I sometimes think we have erred more than once in this way), but a town gardener is glad to get plants of this class; and no doubt the useful and free-growing Elder has come in as a useful adjunct to help the Shrubberies in Princes Street Gardens. The long bank of Ivy in the west end division of these gardens, is a beautiful feature, growing where one would have much difficulty in keeping grass alive. At this season the great breadth of Ivy is a picture of itself, the delicate young foliage contrasting beautifully with the trees dotted in it. Perhaps, if there were fewer trees in the line at top of Ivy border, the beauty of the space beyond would be greatly enhanced. I have had much to do with Ivies, but mostly on old walls or ruins; and I have always managed to keep it close by an annual clipping. Ivy does not only fall from walls when let alone, but when not clipped it forms a complete harbour for rats, birds, and other vermin. *M. T.*

GOLDEN ACRES NURSERIES, EDINBURGH.

These nurseries have justly been famed for some years, and it would appear that Mr. Thomson, the proprietor of them, seems to leave nothing undone to maintain their good name by moving with the times, and growing in great abundance such plants as are in great request, and making selections of the best, and increasing their numbers as rapidly as possible, so that there may be no shortcoming. Mere collections having had their day, plants of hardy constitution, with good general appearance, meet the wishes of those who purchase them. For example, long beds of *Dracæna terminalis amabilis*, and *D. terminalis alba*, or others raised from these hardy and beautiful species, may be seen in the best of health, and as near to perfection in colour as I ever saw *Dracænas*. Many others are very fine in appearance, viz., *Miss Glendenning*, which is a variety that is conspicuous for fine colour, and all are in great variety. Crotons, too, are of extra fine colour, and grown by the houseful. Crotons Prince of Wales, Countess, Aigburthensis, and Warrenii, seemed to be the varieties most distinct in colour, among large numbers of the best-known sorts. *Aspidistras* are grown by the thousand. This is the plant above all others which is highly valued for rooms; it is difficult to kill it, and is sometimes used in large numbers to decorate coasting and passenger steam-vessels, and I am assured that no plant stands the salt spray like it. The foliage is thinned out in quantity for mixing with cut flowers.

Eucharis in boxes, pans, and pots, on shelves, under stages, and in every nook where they could be stored, give indication of the immense demand for these popular plants. *Caladiums* were a very attractive group, and the new forms, which we admired greatly, were conspicuous for their beautiful bronzy foliage, which is very luxuriant. *La Lorraine* seemed to receive special favour, so did Mrs.

Harry Veitch, a bronze crimson; Madame Mitjana, bronze; Princess Teck, Duchess de Montema, Gerard Dods, Léon Say, Madame Imbert Kaddline, Ibis rose, Madame Alfred Maure, all mostly of a bronze and golden hue, and very striking; these were set apart as some of the cream of the stock. Raymond Lemonnier, not yet very plentiful, is a very choice variety. Begonia Arthur Malet was one of the finest in the foliage class. Myriads of Ferns and Palms are grown—whole housefuls may be seen; panfuls of young Ferns in every available space were ready to be potted, which shows no decrease in the demand for these valuable classes of plants. Azaleas of the early forcing class were to be seen in housefuls. There are now many fine double whites of this class, but Duchesse de Perle still holds its own; many varieties of rose and crimson-coloured sorts are now grown in immense numbers for winter use, and are most valuable between the months of November and April. India-rubbers, green and variegated, are as popular as ever—indeed, the immense demand for the variegated form renders it yet somewhat scarce. We have used it for room decoration for some years, and look upon it as one of the best plants for this purpose which has been introduced of late years; they are also receiving much attention at Golden Acres. These are a few of the specialties at this nursery, and we never saw the plants there cleaner and in better health. One other item in this plant emporium is the excellent collection of Vines in pots, strong fruiters, fully developed, short-jointed wood, very strong, and immense healthy foliage, constitutes a well-grown Vine, either for fruiting in pots, or for planting out. The canes referred to are already stopped to the length they are to be kept at, thus plumping up the buds from top to bottom. The long rest these Vines will have, and the abundance of time they have to ripen and retain their fine foliage, is the perfection of Vine-growing. *M. T.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

LAYERING STRAWBERRIES.—If intended for fruiting next year, the runners should be layered as early as possible this season, and when they are sufficiently rooted to take care of themselves, sever them from the old plants, transplant them firmly in the open, and cut off all runners. Under this treatment the plants will make good strong crowns, that will bear fine crops of large fruit next year. I always layer a given number for early fruits, fruiting the plants once, then destroying them. Noble is good for this work, but the flavour is wanting. [Grow something better. Ed.] Layer the runners in 3-inch pots, three-parts filled with good soil; stand the pots level around the plants, and peg from each from six to nine, according to strength, and water when necessary; and in about a month the runners will be in a good condition for transferring to their allotted quarters. If planted at 18 inches apart on a south border, and treated in the above manner, a first-rate supply of early fruits will be obtained, which will be ripe a few days before those on older plants. The ground for this early crop does not need the same amount of preparation as permanent beds, which should always be trenched and heavily manured some good time before planting, so that the soil may settle, the plants delighting in a deep firm soil in a good heart.

EARLY-RIPENING PEACHES AND NECTARINES.—The fruits of these should receive their final thinning and the sublateral and useless shoot-wood be cut out, and the foliage cleaned with the syringe or engine. The varieties Waterloo, Alexander, and Amsden will be the first to ripen, being followed by Hale's Early, Early York, and Early Louise. If fine fruit is looked for, the trees must not be heavily cropped, or the roots lack water. It will be found advisable to afford them two good soakings of manure-water. All leaves which overhang any of the fruits must be put aside, and if the trees are robust some of these may be shortened or cut off so as to expose the fruit. These early varieties should always be gathered a

few days before they are ripe, taking care not to bruise them, and place them in an airy fruit-room, and resting on a layer of cotton wool over which a piece of tissue-paper should be laid. If the fruits of the above-mentioned Peaches are left on the trees till they are ripe, it is not an uncommon occurrence for fruits to crack open at the apex, making the pulp dry and of poor flavour. All the later ripening varieties will require to have their shoots regulated, and the sublaterals stopped, the foliage being kept quite clean by washings with the garden-engine. Should mildew put in appearance, dust the shoots and leaves when damp with flowers-of-sulphur, and mark the trees so attacked, and at the proper time lift the roots, and in the case of old trees, grub them out and plant others.

APRICOTS.—In the case of trees which have not been summer pruned, all the foreright and side shoots may now be shortened back to within four eyes of the base; and if this operation was previously performed, the still soft secondary shoots should be pinched back, the shoots laid in thinly. Keep a sharp outlook for shelled snails, or much of the fruit may get spoiled. After the trees have been put in order, clean them thoroughly with the engine. Keep the borders moist and on light dry soils; do not be chary with the use of manure water. The main branches of the Apricot should be somewhat shaded from the sun by means of young leaves and shoots over them, or if these are not numerous enough, some artificial means must be found for covering them.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

CLERODENDRON BALFOURIANUM.—Specimens which have ceased flowering should have their shoots cut well in, afterwards placing those which are in pots in a structure where a genial humid atmosphere is maintained, and where there is sufficient head-room, so that the young growths may be trained to their full length. After the plants have made shoots about 2 inches in length, turn them out of their pots, removing a portion of the old soil, and any straggling or long roots. Having done this, re-pot them in a compost consisting of three parts fibrous loam, taken from a rich pasture, and one of rotted stable manure, with sharp sand in quantity to keep the compost open. The pots should be clean, and contain a depth of 4 inches of drainage materials. Make the soil moderately firm around the old ball, and leave sufficient depth below the rim for efficient watering of the plants. After potting, the plants should be placed in such a position that strings can be placed above them and under the roof, to train the new shoots to. The length of these strings may be from 15 to 20 feet, as in the case of strong specimens, they will make growth of quite that length. When roof-space is limited, and space does not exist to train each shoot separately, two or three may be twined round the same string. From the period of cutting back the plants, the syringe should be in regular use to encourage growth, and keep insect enemies in check.

SHRUBBY VARIETIES OF CLERODENDRON.—Clerodendrons fallax and Kæmperi may be induced to flower a second or third time by removing the corymb as soon as it is past its best, the eyes just below the point of severance commencing to push into growth at once. These cutbacks, if well supplied with manure-water, will flower at the end of August and during September; whereas plants hard cut back after blooming, seldom have sufficient time to make flowering growths ere the season is too far advanced for fine heads of bloom to develop.

ERANTHEMUM PULCHELLUM.—Plants struck from cuttings this year, and grown on quickly with due attention paid to stopping the shoots, should be stout and bushy, occupying 5 or 6-inch pots, and when the pots are fairly well filled with roots, they should be shifted into pots two or three sizes larger. Cut back plants which did good service last year, if in vigorous health, may be afforded 12-inch pots. I find that these are the plants which are most suitable for early flowering. A compost consisting of three parts of rich fibrous loam, and one each of decayed manure and leaf-soil, with sand in proportion, will be found suitable for them. The plants should be grown in a low house, and where the temperature is not allowed to fall below 60° at night, with a corresponding rise by day.

STEPHANOTIS FLORIBUNDA.—Young plants which have become well rooted in their pots should now be moved into others two or three sizes larger, as, should they be allowed to get pot-bound whilst young, the growth of the plants would be greatly retarded. Large specimens which have done blooming should have the necessary pruning and thinning carried out as soon as possible, keeping them rather dry at the roots for a time. Those in beds, or tubs, or large pots, naturally grow more robust than those that are more limited for root-space, and will, in consequence, require to be cut harder back. If the drainage of the pots and tubs is good, the Stephanotis will thrive without needing to be disturbed for a number of years, and I find that when the pots are once filled with roots, and some weak stimulus is afforded them during the growing season, the plants flower with great profusion. Should mealy-bug infest the plants, examine the latter frequently, and use every effort to rid the plants of the insects.

CALLICARPA PURPUREA.—To have these plants in a forward state by the autumn, the young stock raised from cuttings or seed in the spring should be pushed on as soon as they are ready, stopping the leading shoots two or three times, so as to get them to throw out a number of side-shoots, as in general the plant is naturally thin in habit, and if it be allowed to grow on without stopping the leaders and laterals, it has a straggling appearance. Pots 7 or 8 inches in diameter, will be large enough for the final shift, affording the plants a compost consisting of two parts loam and one each of leaf-soil and decayed manure, with sufficient sharp sand. Grow the plants near the glass in the intermediate-house, throwing a light shade over them when the sun is bright. Old plants which have been cut back and made new growth, if vigorous, may be repotted in pots of two sizes larger, pinching back any shoots that may be taking an undue lead. Syringe the plants overhead every afternoon, and assist them with weak manure-water when the roots have filled the pots.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

SUMMER BEDDERS: CARPET BEDS.—Owing to the late tropical weather, which compelled us to water the beds copiously, the plants, notwithstanding the generally backward character of the season, promise to be as well-furnished at the end of the present month as in previous years. The work on the beds will consist of pegging-down the shoots, pinching and training into shape the various carpeting plants employed. The flowers of Sedums, Echeverias, golden Chickweed, Stellaria graminea aurea, Saxifrages, and plants of like habit of growth, should be picked off, and the centres of these species of plants pressed into the soil with the hand. Cut off with shears all growths that spoil the regularity of dividing lines of plants, as well as from the plants with which divisions are planted. Herniaria glabra, Antennaria tomentosa, Stellaria, and Cerasiums tomentosum and arvense are the plants most quickly trimmed into shape. Carpet-beds from this date to the middle or end of September should, however, be put into good order at least twice in about three weeks; and when they are well kept, these mosaic patterns, formed exclusively of dwarf foliage plants of bright, soft, and pleasing colours, contrast very effectively where the other beds consist of masses of scarlet, pink, white, yellow, and blue flowers.

THE LAWN.—The present is a good season for the destruction of large-leaved weeds on the turf, the grass growing quickly, and obliterating all trace of the bare spots where they grew. No better implement exists than Wilke's Dock and Daisy Eradicator; and although a calendar is scarcely the place for a recommendation of any implement, the usefulness of this one must be my excuse. It was described in these pages at p. 532, on April 23 last. Where verges of turf were not trimmed with the edging-iron at an earlier date, it is not too late to see to this matter at the present season, if it does not involve any laying of turf.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

DENDROBES.—Dendrobium Cambridgeanum is rather an unsatisfactory Dendrobe to flower, and it should now be resting, which is best done by suspending it in the Mexican-house, affording it but little moisture at the roots. It flowers from the young pseudobulbs as soon as these are formed, in

early spring, but to get it to flower well, it appears to be necessary to starve the plant, even whilst it is growing, that is after the flowering is past. However, water should be freely supplied until the pseudobulbs are quite mature. Other Dendrobies are growing at this season, and should be afforded sufficient heat, light, and moisture, drought at the roots, or a dry atmosphere, being undesirable, and continue to make use of weak liquid manures, as recommended in former calendars. *Compasiretia macroplectron* is an Orchid which should be grown in a small pan or basket, hung up in the Cattleya-house. *Masdevallias* may now be repotted; at least, all such as have finished flowering. The kind of peat employed for these plants need not be very fibrous, but it should be broken up into small pieces, and well mixed with chopped sphagnum moss, and some sharp sand and a small quantity of half-decayed leaf soil that has been rubbed through a fine sieve.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

LATE VINES.—Where the thinning was not sufficiently severe, some few more berries may be removed, as well as all superfluous growths, the latter by pinching with the finger and thumb. Feed the Vines according to their needs and the weight of the crop, but being more liberal with the use of manure in any form to those Vines that are planted in light airy houses having a command of artificial heat. When the Vines are weak or bearing a heavy crop, a humid atmosphere should be aimed at during sunny weather, frequently sprinkling the borders with diluted manure. A minimum temperature of 60° to 65° should be adhered to.

MELONS.—The latest succession of Melon plants may be planted about this time, after having cleaned Melon-houses or pits inside and out, not forgetting to limewash the inner walls. For late cropping, only the best-keeping varieties of Melons, and those which are not liable to split, should be planted. When the new plantation is intended to replace another in the same house, the old soil must be thrown out. The fresh soil will be the better for the plants in proportion to the amount of superphosphate it contains, as the production of flowers is thereby fostered. In planting and watering, previous instructions should be followed. Melons now in flower should be kept, as regards the soil, rather on the dry side till a sufficient number of fruits have set, and then liquid manure should be afforded the plants, and additional rich compost put on the borders and mounds. Do not water with cold water, but always with that which has been well-warmed. Ripening Melons may be afforded a dryer atmosphere than those in a less forward stage, and a small amount of air admitted by the top ventilators day and night, which will improve the flavour of the fruit, and prevent it cracking, to a certain extent. The soil around the roots of the plants should not be allowed to get into a dry state, or the fruits will lack juiciness and tenderness. Thrips often make their appearance in Melon-houses during the summer months, and, if left unchecked, they make havoc with the foliage. No better means for its extermination has come under my notice than that of fumigating with medicated tobacco-paper. Red-spider can be kept in check by syringing the plants for several consecutive nights with tepid water containing a small portion of soft-soap, and ventilating early the following mornings; in fact, if the weather is favourable, air may be left on the whole night.

STRAWBERRIES.—Runners for pot-work ought now to be pegged down in pots or on ridges of prepared soil. In this way, well-rooted plants will be obtained by the end of the present month. The runners must not want for water in dry weather; and they should be potted up as soon as ready.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

CELERY.—The planting of the main-crop plants should not be delayed any longer. For the earliest and main crops of Celery more manure may be used, whilst late crops should not be afforded much manure, or the plants will suffer greatly from frost; indeed, I question if an excess of manures is not the cause of Celery running and decaying generally. It would appear that it is safest to assist growth with farmyard liquid, fish manure, and common salt, if the soil be light. Plenty of water is necessary during the summer for the plants in all stages. In lifting the plants for planting them out, get a ball of earth,

with all the roots that belong to the plant; trim off the lowest leaves and offsets, and make the holes sufficiently large to take the ball without crushing it. Make the soil firm about it, and afford a thorough watering at the finish. For late and main crops, the seed should be sown thinly in cold frames, and the plants transplanted to the trenches direct, thereby in great measure averting bolting.

CABBAGES.—For securing heads next April and May the present is a suitable time, for late or cold districts, to sow for the earliest cuttings; but it is not advisable to fix one date for all parts of the country. If seed be sown from July 15 to 20, on a border not exposed to the sun the whole day, and sown thinly, it will be sufficiently early. Seeds may be sown again ten days or a fortnight later, so that, if doubt exists as to the first lot becoming too large to stand the rigours of winter without loss, this second lot will be of the right stamp. Pricked-out Cabbages, if there is time for this kind of work, bring good results, the plants growing sturdy and short-legged, and, in consequence, suffering less from frost, and do not bolt much. One of the best Cabbages for early spring consumption is Ellam's Dwarf Spring, a small-growing variety that may be planted at 18 inches from row to row, and half that distance in the row. To follow this, our Nonpareil is a capital Cabbage, very hardy, and a compact grower. A small quantity of seed of the Red Dutch should be sown, if pickling Cabbages are required.

BRUSSELS SPROUTS.—A later lot of this useful vegetable should be planted out from the open seed beds, and these will form a succession to the earlier planting, affording a supply of small hard Sprouts, and standing severe weather better than the earlier and better-developed plants.

BROCCOLI.—A sowing of Walcheren Broccoli, made at the same time as the Cabbage, will be found serviceable in the spring, these plants often standing a severe winter uninjured, and affording nice heads after the earlier-planted Broccoli is over; indeed, I prefer this variety to the Cauliflower for winter sowing.

GARLICS AND SHALLOTS, ETC.—The bulbs of these two plants should be taken up and dried, and stored in a cool shed. Pot herbs may now be cut and dried. The beds of spring-sown Onions should be gone over, and the necks of thick-growing ones bent over, and Tripolis taken up and stored in a cool place for present use.

FORESTRY.

By J. B. WEBSTER, Fairview, Stangmore, Dungenannon.

CLEANING YOUNG WOODLAND.—The recent and present genial weather has been and is favourable for tree and shrub growth, and weeds and surface scrub are not one whit behind those; consequently recently-planted young trees are becoming smothered with first-named and grasses. When such is the state of the ground, the vegetation must be cut down, to afford the plants breathing space, or fine growth can scarcely be expected. A careful man with a squad of boys may perform this task in a satisfactory manner at a cheap rate of pay. Young ornamental trees, planted sparingly in the young wood, should not only be kept free of weeds, but the hardened surface occasionally broken up with the hoe and the rake, an operation which is very beneficial to them in assisting healthy development. Examine the ties of all trees which are secured to stakes, and such as are getting tight should be loosened a little to save the bark from injury, and the flow of sap from being checked. All branches and twigs that may have been used to shade and shelter young ornamental stuff may be removed, there being no danger to be apprehended from frost at this season. Young ornamental plantations should be kept free of weeds by means of the hoe and rake; and young hedges of all kinds in particular kept clear of weeds, on no account letting weeds shed their seeds; and as some species of plants are capable of maturing and perfecting seed after being pulled up and left to lay on the surface, they should be gathered up and consigned to the rot-heap forthwith. As sheep and cattle are now at large in parks and fields, fences and tree-guards of all kinds should have particular attention at this season, to prevent them from entering and browsing on the branches and twigs. During dry weather, fences, tree-guards, and gates should be painted, also wooden sheds should be repaired where necessary, and the roofs and sides coated with tar. Barrows, wooden and other kinds of carts should be put into thorough repair.

This is the best season for repairing hill-roads, bridle-paths, bridges, and embankments that have been undermined and damaged by the winter floods, making them safe for pedestrians by the time they will be traversed by shooting parties in the month of August. For the binding of loose sand and similar material along the banks of mountain streams and roads, &c., sow the seed of some of the hardy grasses with creeping roots, such as soft grass, *Holcus mollis*, *H. lanatus*, Lyme-grass or Sand-grass, *Elymus arenarius*, Sea-reed or Mat-grass, *Ammophila arundinacea*, Couch-grass, *Triticum repens*, all of which are perennial and well furnished with deep creeping roots, and highly suitable for the purposes named. In parts of the country where tough sods can be had, these may be used here and there, for similar purposes, and to bind the loose material and prevent it from being washed away by rain until such time as the sown grasses become established. Fragments of wood that cannot be utilised to better account should be cut up for firewood, and the making of charcoal; the former should be cut into suitable lengths as may be required and built into stacks in an open airy place so that it may be thoroughly seasoned by winter. The stuff for making charcoal may be cut into lengths of about 2 feet long, and about 4 inches square, but branches of a much smaller size are also suitable.

THE APIARY.

By EXPERT.

REARING QUEENS.—About the middle of the month of July is the best time at which queens for the next year's work may be reared. There are usually one or two stocks in every apiary which get ahead of the others, although the conditions at the commencement of the season seemed about equal. These are the workers, which ought to be perpetuated, and much might be done by careful selection in improving our bees, so as to get a strain that could be depended on as being good honey-gatherers, non-swarmers, and quiet in disposition. The drones exercise a great influence on the progeny, and must be taken into account; but, although we cannot control mating, the continual weeding out of the worst queens advances our object, and, in time, exercises a good effect by creating a preponderance of the drones required. The most irascible bees are generally hybrids, Ligurian or Carniolan, and these are therefore to be avoided. Now that the tide has turned in favour of the once-despised "blacks," drones of foreign races are getting to be more uncommon than was formerly the case, thus lessening or removing a serious obstacle. The stock intended for queen raising should be deprived of its queen, eggs, and larvae, and a frame, containing the latter from the selected hives, inserted. On the twelfth day the queen cells will be ready to cut out, and they must then be put in a queen nursery, or separately in match boxes, and kept in a warm place until the inmates bite their way out, when they should be immediately introduced to the desired stocks.

TECHNICAL INSTRUCTION.—Quite a new and novel method of imparting instruction in bee-keeping is being carried out in Herefordshire, a grant of £50 having been made by the County Council. A one-horse travelling sleeping van has been built to go round to the villages, and is fitted up so that the back can be let down to form a platform for the lecturer who accompanies it. A magic lantern, with suitable slides, is also carried, for use after dark. The screen is fitted on a roller at the end of the van, and when drawn down forms a back to the platform, the lantern, placed in the front, throwing a five-foot picture on to it. It is hoped that by this means people would be reached whom it would be next to impossible to get at otherwise, and it is not too much to expect that an improvement in keeping and managing bees will result, with benefit to those concerned.

SUPER CLEARERS.—Beekeepers who used the "Flood" pattern super clearers last season seem very well satisfied with the working of them, as they certainly have achieved the results claimed. The principal difficulty at present seems to be that as section crates vary in size so must the clearer, thus necessitating a number, whereas otherwise one would suffice for a good-sized apiary. It is not very easy to get bees out of sections by the old methods before they have pierced the cell cappings, and a super clearer with all section crates of the same dimensions will no doubt be looked upon in the future as a necessity in every well-managed apiary.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, JULY 12—Royal Horticultural Society; all committees. Paper by Rev. E. Handley on "Orchids for a Cool Greenhouse."

WEDNESDAY, JULY 13—Royal Botanic Musical Promenade.

SHOWS.

TUESDAY, JULY 12—Wolverhampton Horticultural (3 days), in conjunction with the National Pink, Midland Section. Hereford Horticultural and Rose Show.

Royal Horticultural Society, Drill Hall, Westminster: Show of Hardy Herbaceous Perennials.

Ealing Horticultural. Bedford and Bedfordshire Horticultural.

WEDNESDAY, JULY 13—Tunbridge Wells Rose Show. Royal Caledonian Horticultural Society (2 days).

THURSDAY, JULY 14—Helenburgh Horticultural and Rose Show. Harlestone Rose.

SATURDAY, JULY 16—National Rose Society's Show at Chester.

SALE

FRIDAY, JULY 15—Unreserved Sale of well-established Orchids from Mr. H. James, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°·3.

EVERYTHING wears a rosy complexion this week, except, perhaps, to disappointed electioneers; but true rosarians will attach little significance to such ephemeral and thoroughly unscientific and illogical matters as a contested election. The Rose exhibitions have been very good, and full of interest, as our reports will show. It is to be regretted that at Earl's Court some attempts were not made to break away from a system of exhibiting which, however necessary for purposes of critical comparison, goes as far to make the Rose ugly and generally uninteresting as it is possible to do. It is a pity that so fine an opportunity should have been lost. We must refer to our reports for an account of the Exhibitions, but in this place we avail ourselves of the opportunity of publishing a portrait of the Rev. H. H. D'OMBRAIN, to whose energy and loyalty rosarians owe so much (see p. 39). The National Rose Society and the Horticultural Club are striking object lessons, showing what a country parson can do in the way of advancing horticulture, and not even those successful institutions can make us forgetful of similar labours in the case of the Gladiolus and other florists' flowers. Natural history and botany secured a large share of his attention long ago at Trinity College,

Dublin; and, if we mistake not, Mr. D'OMBRAIN was one of the founders, and remains one of the few survivors, among the originators of the Natural History Society in that city. Among the tercentenary festivities, this fact seems worthy of record. Mr. D'OMBRAIN has also been a constant contributor to the horticultural press for many years, and we, too, have and do profit by his valued co-operation.

Inexorable limitations force us to hard-prune our rosy inclinations, but we may as well mention among the events of the week the publication of yet another book on the literature of the Rose, *La Rose dans l'antiquité et au moyen âge, histoire légendes et symbolisme*, par CHARLES JORET. Paris, EMILE BOUILLON. There seems to be no end to the demand for this sort of literature. The book before us travels over well-beaten tracks, but for all that it will be read with interest by scholars, dilettanti and connoisseurs as well as by the general reader.

UNIVERSITY TERCENTENARY CELEBRATIONS AT DUBLIN.—Trinity College, Dublin, was founded by a charter from the "Lion Queen" in 1591, and has just now been celebrating its existence and gathering strength during the past three centuries. On the opening day the Provost's daughter, Miss F. M. SALMON, planted a Mulberry tree as a memorial in the Fellows' garden, and turned the last sod with a silver spade, presented by the Senior Proctor, Dr. S. HAUGHTON, F.R.S. The Mulberry tree was especially selected for its well-known longevity as a town-garden tree, and also to keep up the time-honoured traditions of the place, since there still exists in the Provost's garden a Mulberry believed to have been planted very soon after its introduction about the year 1548. There were in attendance delegates and guests from the principal British, European, American and Oriental universities, and our readers will be glad to hear that Professor MICHAEL FOSTER, of Cambridge, was not only a specially invited guest, but that he received a Doctor of Science degree, and there was an enthusiastic reception as he stood forward to receive the honour. Amongst the guests especially invited was Mr. DYER, the Director of Kew, who unfortunately was unable to be present. The great Examination Hall of Trinity College was *en fête*, and the enthusiasm of visitors, guests, and graduates, rose to its height when ALMA TADEMA, HENRY IRVING, and Sir F. LEIGHTON stepped to the dais to accept the degree of Doctor of Letters. Altogether about seventy-two Honorary Degrees were conferred on men of world-wide reputation; the popular favourite of the students being Dr. IRVING, who was carried to the steps of the dining-hall, where he made a speech amid the wildest enthusiasm. Trinity College, Dublin, emulates the English universities in the keeping up of a well-stocked botanical garden (see p. 33), the curator of which stands tenth on its roll of Honorary M.A. degrees. Many years ago the Royal Society of England elected a gardener, the celebrated PHILLIP MILLER, of the old Chelsea Physic Garden, into its ranks, but so far as we know, Dublin is the only university in Europe that has conferred its honours on a member of our gentle craft.

CHICAGO EXHIBITION.—From California is to be exhibited at the World's Fair one of the famed huge redwood trees, or *Sequoia sempervirens*. The one selected is 300 feet high, and more than 30 feet in diameter at the base. A specially constructed train will be necessary to carry the monster across the continent. It is the intention to hollow the base into booths in which will be sold Californian wines, fruits, and curiosities made of polished redwood.

THE HORTICULTURAL COLLEGE, SWANLEY.—The diplomas and prize, gained by the scholars of the Swanley Horticultural College during the past session were distributed on Saturday. Mr. J. C.

JOHNSON presided. The ceremony of presenting the awards was performed by Mr. G. M. ARNOLD, C.A., the Mayor of Rochester, and chairman of the Kent County Council Technical Education Committee, who remarked that the Kent County Council had a special interest in the College, as they had made arrangements whereby twenty students, having gained scholarships in local examinations, should be instructed there.

TWO NEW NATURAL ORDERS.—Herr NIEDENZU, of Berlin, proposes in the *Natürlichen Pflanzenfamilien* of ENGLER and PRANTH the establishment of two new orders called respectively Blattiaceæ and Panicacæ, the latter to include the Pomegranate, the former comprising Blatti, which is remotely allied to Napoleona and Crypteronia.

"ILLUSTRATIONES FLORÆ HISPANIÆ."—Among the plants figured and described by Dr. WILKOMM in the last number of his very accurate and trustworthy publication, are *Euphorbia imbricaria*, with deflexed overlapping leaves; *Erysimum linifolium*, with rose-coloured flowers; *Centaurea cephalariæfolia*, with rosy-lilac flower-heads, showy enough for the herbaceous border; as also is the dwarf yellow-flowered *Centaurea Toletiana*.

THE DICTIONARY OF GARDENING.—A French translation, effected by M. MOTTET with the aid of specialists in various departments, of NICHOLSON'S *Dictionary*, is in course of publication (Paris, Librairie Agricole, Rue Jacob 26). The preparation of this French edition will allow of the expansion of the original, and the remedying of certain omissions. The work is so useful that we could wish the publisher would see his way to the issue of an annual supplement, and eventually of a new edition.

BARON TODARO.—We learn that this gentleman, the Professor of Botany and Director of the Botanic Garden, Palermo, died on April 18, and has been succeeded by Dr. HERMANN RAST. Baron TODARO was not only a botanist, but a lawyer, and a politician. He was known among botanists for his publications on the species of Cotton, species of Agave, Aloe, and other interesting plants from the Palermo garden, and was an occasional correspondent of this journal.

NATIONAL CHRYSANTHEMUM SOCIETY.—A meeting of the committee of the above took place at Anderton's Hotel, Fleet Street, on Thursday, the 30th ult., Mr. R. BALLANTINE in the chair, and a large attendance of members and delegates from various affiliated societies. A letter was read from Sir EDWIN SAUNDERS accepting the office of president of the society, and the secretary reported that Sir EDWIN had contributed the sum of five guineas to the Holmes Memorial Challenge Cups Fund. The arrangements for the conference on the proposed increase in the size of show-boards for Japanese blooms was then considered, and eventually a small committee was appointed to arrange the details of the conference, consisting of Messrs. W. E. BOYCE, NORMAN DAVIS, GEORGE GORDON, H. J. JONES, and B. WYNNE, with the officers of the society *ex officio*. It being desirable that a supplement to the society's centenary edition of the *Chrysanthemum catalogue* should be prepared, the committee instructed the Catalogue Revision Committee to prepare the same, and, if possible, have it ready by the month of October. A communication was read from the Wellington Horticultural Society, New Zealand, referring for adjudication to this committee two matters which had arisen in connection with their recent Chrysanthemum show, and upon which they desired an authoritative declaration. The subjects were fully discussed, and the secretary instructed to reply in the terms agreed upon. A communication of more than ordinary interest was read from Mr. JOHN EARLAND, Wellington, New Zealand, informing the committee he had raised some seedling Chrysanthemums, the blooms of which he was desirous of sending to England for the opinion of that body;

and that he had made arrangements to have the blooms frozen in blocks of ice at the meat-freezing works in Wellington, and would forward the same to London by steamer carrying the frozen meat. On the arrival of the ship in London, the block of ice containing the flowers would be placed in the storage chamber until

country, and their arrival in London may shortly be looked for. A sub-committee was appointed to select designs for and purchase the Holmes' Memorial Challenge Cups offered, which are to be awarded at the large exhibition in November next. The Secretary announced that arrangements had been made for the annual outing of the members to

Eight new members were elected, and the Highbury Vale Chrysanthemum Society was admitted to affiliation. The proceedings closed with the usual vote of thanks to the Chairman.

MR. BERNARD DYER.—The new list of Doctors of Science of the University of London includes the name of Mr. BERNARD DYER, on whom the degree has been conferred for contributions to the chemistry of agriculture. The other names on the list are, in the department of chemistry; those of Mr. S. F. DUTTON and Mr. W. P. WYNNE; and, in the department of zoology, that of Mr. T. JEFFREY PARKER.

LAPAGERIAS.—M. SCHNEIDER is cited in the *Journal de la Société Nationale d'Horticulture de France* as saying that the fertilisation of the white variety of *Lapageria rosea* in Messrs. VEITCH'S nursery, by its own pollen, has always resulted in the production of seedlings which in due time bore rose-coloured flowers.

MANCHESTER ROSE SHOW.—The date of this Exhibition is fixed for Friday and Saturday, July 22 and 23.

STEVIA SERRATA VAR. ALBO-MARGINATIS.—A pretty novelty, with lanceolate white and green foliage, that will be, according to MÜLLER'S *Deutsche Gärtner Zeitung*, as indispensable in time as *Pyrethrum aureum* in bedding. Cultivation is extremely simple, and propagation is rapid and certain. From the figures given in the above journal, which show standard and dwarf forms of the plant, it would make an admirable plant for carpet beds, and edgings to other beds.

WATER SUPPLY TO MANSIONS.—We commend to the notice of country gentlemen and others an illustrated pamphlet by Messrs. MERRYWEATHER of Long Acre, showing the various methods of procuring and distributing a supply of this essential fluid. Save to professed engineers, these matters are often sheer mysteries, but the pamphlet in question conveys in a simple style information which every proprietor, and every steward, and gardener, or bailiff, would find it advantageous to possess.

E. D. SHUTTLEWORTH & CO. (LIMITED).—We notice in a trade list recently sent to us, that Messrs. SHUTTLEWORTH, of the Nurseries, Peckham Rye, have taken land at Fleet, Hants, and are engaged in the cultivation of Conifers, deciduous trees and shrubs, Roses, Clematis, &c.

MESSRS. SUTTONS' GLOXINIAS.—A few days ago we had the opportunity of seeing at Reading Messrs. SUTTONS' magnificent strain of Gloxinia. For substance and brilliancy of colour of the flowers, this strain is very remarkable, as is also the peculiar manner in which the leaves curl over to hide the pot. The netted varieties, in which the patches of colour are separated by a network of white or lighter ground colour, are very beautiful; but perhaps the gem of the whole collection was a superb pure white flower, named *Her Majesty*. We saw *Her Majesty* just as she was about to proceed to Richmond, and had no hesitation in predicting the success which, we learn, awaited her arrival at that exhibition.

ROSEMARY.—Mr. CROUCHER writes from Ochtertyre that he has lately removed an old Rosemary planted over 60 years, the stem of which girthed over 12 inches.

WEATHER FLUCTUATIONS.—Among the weather reports we have received lately was one we ought to have mentioned before, as it refers to the temperature of some days in the last month. At Ochtertyre, near Crieff, Mr. CROUCHER writes, the maximum shade temperature on June 9 was 82°. The next day it was no more than 49°. On the 14th there were 2° of frost, and the hills on the 11th and 12th were covered with snow.

ROYAL HORTICULTURAL SOCIETY.—On Tuesday, July 12, a meeting of the various Committees will take place in the Drill Hall, James Street,

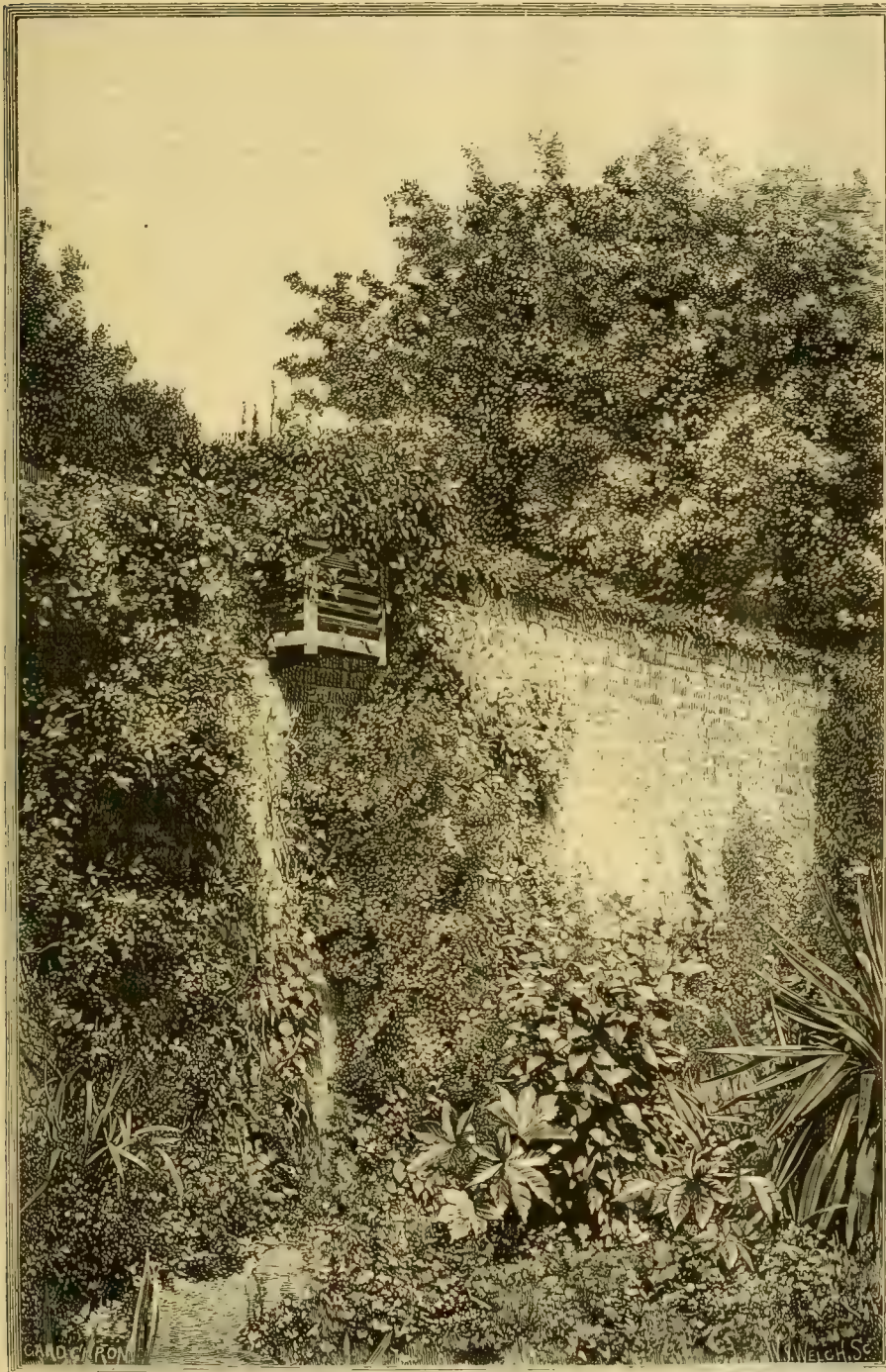


FIG. 8.—VIEW OF OLD WALL IN THE TRINITY COLLEGE GARDEN, DUBLIN. (SEE P. 33.)

arrangements could be made for placing them before the committee. The committee regarding this as an extremely interesting experiment, it was resolved that as soon as it is known the blocks of ice are received in London, a meeting of the General and Floral Committee should be called to examine the flowers and report upon them. A subsequent communication received from New Zealand informs the committee that the flowers are on their way to this

take place on Friday, July 22nd, when a visit would be made to Penshurst Place, Kent, by the kind permission of Lord DE LISLE; and permission had also been given by F. E. HILLS, Esq., for a visit to be made to Redleaf on the way from the station. One feature in the day's proceedings will be a cricket-match between an eleven selected from the members of the National Chrysanthemum Society, and one from the Sevenoaks Gardeners' Society.

Westminster, and prizes will be awarded to amateurs for hardy herbaceous perennials. The Rev. E. HANDLEY will read a paper at 3 P.M. on "Orchids for a Cool Greenhouse;" and the Mantell Silver Challenge Cup (value 25 guineas), will be offered in an open competition for twenty-four Roses, distinct, three blooms of each.

BEGONIAS.—Messrs. SUTTON have been working at a strain of fibrous-rooted Begonias of the semperflorens type. Of course these look well at Reading, but it is satisfactory to find that they give excellent promise as bedding plants at Chiswick.

THE DRY SEASON.—Numerous reports from various parts of the country have reached us, which, however, we cannot insert in detail. Mr. LOWE writes from Shirenewton as follows:—"The present drought, and the extremely dry air of the past fortnight, have been far more destructive to vegetable life than the winter frosts. A difference between the wet and dry bulb thermometer of more than 19° at a shade temperature under 70°, is an almost unknown amount. Added to this, there has scarcely been any cloud. Variegated Sage, all the St. John's Worts, Olearia stellulata, Thyme, every Cistus, Carpentaria californica, Heuchera sanguinea, Rosa camellifolia, Macartney Rose, Pansies, common Laurel, Lavender, Iberis, Ferula gigantea, Choisya ternata, &c. (if not all dead) have suffered most severely. There has been a deficiency of rain in each month this year. The average, up to April 15, is 10 inches, whilst the actual amount reached 4.9 inches, leaving a deficiency of 530 tons of water per acre. There seems no doubt this is the drought of 1890 repeating itself. At 7 P.M. on the 31st, and at the same time on April 1, there was 15.9° of terrestrial radiation; and at 8.45 P.M. on the 2nd, 15°.

FUNGUS ON WEYMOUTH PINE AND ON CURRANTS.—A short time since we received from a correspondent a shoot of the Weymouth Pine, *Pinus Strobus*, affected with a fungus which we took to be *Peridermium pini*, which is not very rare on Pines. On subsequently submitting the specimen, at his request, to Dr. KLEBAHN, of Bremen, that botanist at once declared it to be his *Peridermium Strobi*, a fungus which he states passes part of its existence under a very different appearance on leaves of various species of Ribes, and which is then known as *Cronartium ribicola*. This latter form, however, was not known to be a native of this country. A few days after Dr. FLOWRIGHT sent us the following letter, accompanied by a specimen of the *Cronartium* identical with what had been sent from Bremen. We shall shortly publish Dr. KLEBAHN's letter and illustrations, and in the meantime can only recommend planters to take care that Currant bushes are removed from the neighbourhood of *Pinus Strobus*, *P. Lambertiana*, and *P. Cembra*. The fungus in question attacks the bark (not the leaves) of the Pine in the form of *Peridermium strobi*, and the leaves of various species of Ribes in the shape of *Cronartium ribicola*:—

"*Cronartium ribicola*, Dietr.—Although this parasitic Uredine is very common on the continent of Europe, it has not yet to my knowledge been observed in this country. For some years past I have been on the look out for it, and was rewarded on Saturday last by finding it near King's Lynn. It occurred in black and white Currant bushes in the garden of Mr. G. C. BOYES, Oakwood House. The specimen showed both uredo and teleutospores. The former germinated very readily in water, emitting very slender germ-tubes. It is a heteroecious species, as has been shown by Dr. H. KLEBAHN, of Bremen, having its aecidio-pores in *Pinus Strobus* (= *Peridermium strobi*, Kleb.)—CHARLES B. FLOWRIGHT, M.D."

GARDENERS AND SURVEYORS.—An old gardener writes us a letter, much too long for publication, in which he indignantly contrasts the social position, education, and acquirements of a gardener with those of a surveyor, much to the advantage of the former. If the gardener does his work well, and the surveyor confines himself to his own department, we do not see the necessity for instituting comparisons. We do, however, think from the following statement that the gardener is underpaid, considering the forethought, experience, and skill demanded of him. In the present crowded

state of the labour market, such complaints as our correspondent makes are futile. An improved social position may, however, gradually be obtained by improved education, combined with hard work and high character. Artificial restrictions, such as the limitation of the number of apprentices, can have no permanent effect. "Will you allow me space to call the attention of my brother gardeners to the following indignity to gardeners. A few days ago I saw an advertisement asking experienced gardeners to offer themselves for appointment as gardener to a vestry committee, wages, 24s. per week, with uniform. As the advertisement made a strong point of wanting a thoroughly experienced gardener, and the wages low, I thought the duties would be almost nominal. Just the place for a man in the decline of life. In answer to my letter, judge my surprise to receive the following list of duties, not a word being said about the size of the garden:—To be in attendance daily during the hours the gardens are open to the public, and also on two Sundays in each month. To lay out all flower-beds, sow the seeds and put in the plants at the proper seasons; keep the grass well mown, trim and prune all the trees and shrubs, spread and dig in manure, do all necessary watering, dig up and weed the beds, thoroughly preserve the appearance of the gardens and paths, roll the grass and the paths, and keep them free from weeds, paper, and other refuse; keep the seats clean, and carry out all other duties which may be required by the surveyor; to preserve order in the garden, and see that the seats, flowers, trees, shrubs, &c., are not damaged. The following table shows the time of opening and closing the gardens:—

Months.	Time of Opening.		All Days Closing.
	Weekday.	Sunday.	
January, February ...	8 A.M.	9 A.M.	5 P.M.
November, December ...			
April and September ...	7 ..	9 ..	7 ..
March and October ...	7 ..	9 ..	6 ..
May and August ...	6 ..	7 ..	8 ..
June and July ...	6 ..	8 ..	9 ..

The gardener will not be allowed to leave the gardens for his breakfast, but a shelter will be provided with an oil-stove and apparatus for boiling water. He will be allowed to go away one hour for his dinner; and the following holidays will be allowed without any deduction from wages:—Christmas Day, Good Friday, all Bank holidays, and one week during summer. A pair of boots and uniform, consisting of hat, coat, vest, and trousers, every year, and an overcoat every two years. Note.—Candidates must have had experience in the management of a garden, and no person except those possessing a thorough knowledge of gardening need apply."

EMIGRATION.—We have received the following from the Emigrants' Information Office, 31, Broadway, Westminster, S.W., taking as much of it as applies to country folk:—"The July Circulars of the Emigrants' Information Office, and the annual editions of the penny and other Handbooks, with maps, show the present prospects of emigration. A new handbook is also issued, dealing with the Argentine Republic. Among the various Consular reports, all of which can be bought from this office, a most valuable report on the earnings of labour and cost of living in the consular district of Chicago, U.S., including the States of Illinois, Missouri, Iowa, Wisconsin, Minnesota, Nebraska, Kansas, and Colorado, has just been published, price 3d. In Canada there is likely to be a good demand during this quarter for farm labourers, general labourers, navvies, and for mechanics in the building trades. The Canadian Government is offering bonuses of 5 to 10 dols. a head to those who take up land in the North-west or British Columbia. In New South Wales mechanics are not wanted, but in some country districts there is a demand for experienced farm and general labourers. A large number of persons have applied for work at the Government Labour Bureau at Sydney. The depression in Vic-

toria still continues, especially in the building and kindred trades. In South Australia there are good openings for ploughmen and for married couples on stations, but the supply of labour has been quite equal to the demand. The Queensland Government withdrew their free passages last February, so that now all except nominated and indented emigrants have to pay full fares. There is no demand whatever for mechanics in Queensland at present. Western Australia still offers free and reduced passages to certain classes of emigrants; and there is a demand for a limited number of farm labourers, men in the building trades, miners, and labourers on railways and public works. In various districts of New Zealand, there is a demand for farm and station hands, and for miners; and prospects generally are good. The new Government Labour Bureau at Wellington is proving very useful, and new arrivals should apply there or at one of its 200 country branches. Cape Colony and Natal offer reduced passages to mechanics, female servants and others, for whom there is a limited demand. In all the above-mentioned colonies there is a demand for small capitalists, farmers, fruit growers, and female servants. As it is announced that a commission has been appointed by the Brazilian Government to encourage the introduction of European agricultural labourers into some of the northern provinces of Brazil, it becomes necessary to repeat again most strongly the warnings which have been frequently issued from this office against British emigration to that country. However great may be its natural resources, it has been abundantly shown that the conditions of life are wholly unsuited to the ordinary British workman, and intending emigrants are therefore most earnestly cautioned not to be induced by any offer of free or assisted passage or grant of land to go out to Brazil.

PROVISIONAL NAMES.—Reforms are not always carried out because their value is obvious and their nature simple. Take the case of provisional names. An exhibitor shows what he deems rightly or wrongly to be a new plant. The Society (we are speaking of the Royal Horticultural Society), declines to give an award to such a plant unless it is named. Accordingly the exhibitor, or some one for him, gives it a name. If, as is usually the case, there has been no opportunity of ascertaining what the plant really is—a provisional name is given, and when the Floral or the Orchid Committees are very virtuous they award a Certificate to the plant (provided they deem it worthy of it), subject to the confirmation of the name. So far good, but in nine cases out of ten the provisional name is cast in the same mould as an authorised name would be, and it generally sticks to the plant for ever and aye, even if a legitimate name be subsequently discovered or applied. We would therefore suggest, as we have often done before, that provisional names should be in the English language, and thus avoid all confusion with the technical name which must as, heretofore, be in cosmopolitan Latin. Names of garden varieties, and of slight variations from well known species, should also be in English.

SALICYLIC ACID AS A PRESERVATIVE FOR

PLANTS.—The use of spirits of wine, glycerine, or other substances, for the preservation of botanical specimens for museum purposes, or for the purpose of anatomical investigations, is, as every one knows who has tried them, more or less unsatisfactory. M. POISSON has therefore been led to try a solution of salicylic acid, of which he reports favourably in the Bulletin of the Botanical Society of France. The most serviceable proportions are 2 grammes of the acid to a litre of soft water, well stirring the mixture to ensure solution (a gramme equals 15.4 grains; a litre equals one pint and three-quarters; half a drachm of the acid to a quart will therefore be an approximate amount). M. Poisson recommends the solution on the ground that it acts as a perfect preservative, that it retains the colour of the object for a long period, that it is relatively cheap, that it can be used by travellers who might find a difficulty in procuring or carrying with them sufficient alcohol.

Our fruit preservers we believe avail themselves on a large scale of the preservative properties of salicylic acid.

MR. BULL'S ORCHIDS.—The rare *Bulbophyllum reticulatum* is now flowering among other choice things in Mr. WILLIAM BULL'S Orchid Exhibition. This species is one of the most attractive in this curious and remarkable genus.

HORTICULTURAL LITERATURE.—Mr. W. M. PAUL, of Waltham Cross, is about to publish a selection of articles written for gardening periodicals and papers read before various societies between the years 1843 and 1892. It will form an 8vo volume of about 600 pages, and will appear early in the autumn of the present year. The matured experience of such a practitioner as Mr. PAUL will be of very great value.

HORTICULTURAL SHOWS.—Among other reports which have reached us are those of the Croydon Horticultural, at which Roses, greenhouse and stove plants formed a principal feature. The Ancient Society of York Florists, in which cut flowers of various kinds, and herbaceous plants, shown by Messrs. BACKHOUSE were prominent. The Scottish Horticultural Association had Begonias, and other collections. To some of these we may refer later on, if space permit.

"PHENOLOGICAL OBSERVATIONS FOR 1891."—Mr. MAWLEY has issued an off-print from the Quarterly Journal of the Royal Meteorological Society, summarising the results of the observations made in various parts of the country on the vegetation as connected with season, &c. The methods of observation have been simplified, so as to secure uniformity, but with every care to secure uniform observations, it is evident that much variation must inevitably accrue. The only ways to "correct" this error, are to insist on the highest attainable accuracy, and to largely increase the number of observers and the area of observations. Much requires to be done in the latter direction, for whilst England furnishes nearly a hundred observers, Scotland has but seven, and Ireland six. The east of Scotland is entirely unrepresented, and many more observers are desired in north England as well as in all Scotch and Irish districts. The winter of 1890—91 was very severe in the south of England, but much less so in Scotland. It was also one of the driest winters on record, and the land was left in good condition for tillage. The spring of 1891 was also cold and dry, and vegetation very backward. Spring frosts destroyed much of the fruit blossom. Summer was deficient in bright sunshine; and July and August in the south, cold, wet, and sunless. This state of things improved in September, but speedily relapsed into cold and wet, so that harvest was late, and the autumn sowing of wheat delayed, and in some cases rendered impracticable. Reports of this character continued over a long series of years will be of the highest value, and we trust Mr. MAWLEY'S may receive every encouragement to persevere in this useful work.

BOTANICAL NOMENCLATURE.—An important manifesto, which derives additional interest from the circumstance that it was dictated by Dr. SERENO WATSON, in his last illness, has just been published in the *Botanical Gazette*. We are told that it was at his express wish that this should be made public. It is a protest, on the ground that botany is the science of plants, and not the science of names, against a too rigid adherence to the law of priority. Dr. WATSON advocates adherence to the practice of the Kew botanists, of Dr. ASA GRAY, and others, who, while generally adhering to the rule of priority, consider that convenience, or as Dr. WATSON puts it, "expediency," demands that the interests of science should in particular cases, override any merely technical claims of priority.

BRANCHING STRAWBERRIES.—Several inquiries have reached us as to the peculiar lobing of the fruit which seems to be common this year. The matter

admits of very simple explanation. The so-called fruit of the Strawberry is merely the extreme end of the stalk that gives off from its sides in succession the several parts of the flower, and ultimately the true fruits or seed-vessels (the pips), commonly but erroneously called the seeds. Now a stalk is nothing more than a portion of the stem, and it is the business of the stem to produce branches, and of the branches to form branchlets and so on according to the necessities of the case and the conditions under which the plant is growing. The lobed Strawberry is simply a branched Strawberry. In the Cockscomb varieties the branches begin to form, but they do not manage to free themselves, but remain in union, forming a flattish lobulated mass.

CAMBRIDGE.—In the annual report of the Botanic Garden Syndicate, dated June 9, 1892, it is noted:—The new range of plant houses, commenced in 1888, has been completed during the past year, with the exception of the Filmy Fern-house. The plants have been safely removed from the old houses to their new quarters, and promise to do well. Special efforts have been made to improve their condition by cleansing, potting, and pruning. The succulent plants in particular present an improved appearance. The labelling of plants continues to receive attention. An improvement has been made at the end of the bog-garden, where moisture-loving plants of various kinds are grown, by the substitution of stone for tree-stumps. These were objectionable on account of the fungi growing upon them, and are now removed to a more suitable position for the purpose of yielding supplies of fungi. The bed of peat in which the *Ericaceæ* are grown has been enlarged, and in its altered condition has proved to be satisfactory. The material necessary for this extension has been obtained by several years' accumulation, but the area under cultivation is still too small for the needs of the garden. About 1168 plants and 1336 packets of seeds have been received. As showing the progress of the garden, it may be mentioned that in summer, when annuals were in growth, no fewer than a fourth of the genera of the vegetable kingdom, according to the standard of the *Genera Plantarum*, were represented. Many specimens have been added to the Botanical Museum from the garden.

THE COLOUR OF CARROTS.—Where does the red colour come from? The roots of the wild Carrot are, so far as we know, not red, and we have lately examined several roots of the maritime variety, *Daucus maritima*, and they are not red. Still, there is a tendency in the plant to produce a red colour, as occasionally the central flower of the umbel is of a deep purple colour, whilst all around are whitish—why? The Carrot has been known from the earliest times, and its origin from either of the two forms above mentioned is only a matter of assumption. There are other species from which it might have descended.

ABACACHI PINES.—M. ANDRÉ describes, in a recent number of the *Revue Horticole*, a Pine-apple similar to those which we have frequently figured in our columns, in which the central or terminal leaf-tuft is relatively small, but where, by compensatory development, a whole crop of side buds is produced at the base, these side-buds developing into fruit in the usual way. The Abacachi or Abacachi Pine seems to be a fixed race in Brazil, and to be greatly esteemed by the inhabitants of that country for its fine flavour.

HYBRID RHODODENDRONS.—In the *Illustration Horticole*, M. RODIGAS describes, under the general name of *Azaleodendron*, a series of forms raised by M. GUSTAV VANDER MEULEN between some hardy Rhododendrons and *Azalea mollis*, the former being the pollen-parent. The styles in all the hybrids are so long that they project beyond the unopened bud. The inverse cross, where the pollen of *Azalea* was used on the stigma of the Rhododendron, produced flowers in which the styles were, on the contrary, very short. The plants are rather tender, but if placed in a cool-house on the approach of frost, they will flower freely in four or five weeks, which renders them valuable for early-flowering. They bear hard-

pruning, the young shoots subsequently produced flowering freely. M. VANDER MEULEN finds they do best grafted on *Rhododendron ponticum*.

UNION HORTICOLE FRANÇAISE ET ÉTRANGÈRE.—We are glad to receive the annual report of this young Society, which has its seat in Paris, Avenue Victoria 16, and whose object it is to bring about good relations between the young French gardeners and their colleagues of other nationalities, to furnish useful information on all matters scientific, practical, and social, connected with horticulture. Fortnightly meetings are held, at which papers are read and other business transacted. M. MAX CORNU is the honorary President, and M. ERNEST BERGMANN, honorary Secretary, the acting President being M. H. MARTINET, with M. TIXIER as Secretary.

CROSS-BREEDING AND HYBRIDISING.—Professor BAILEY has published in convenient and inexpensive form his lecture on this subject. [New York: Rural Publishing Company.] Professor BAILEY gives a summary of what is known on the matter, narrates some of the results of his own personal experiments, and sums up thus:—"Encourage in every way crosses within the limits of the variety and in connection with change of stock, expecting increase in vigour and productiveness; hybridise if you wish to experiment, but do it carefully, honestly, and thoroughly, and do not expect too much! Extend DARWIN'S famous remark to read—Nature abhors both perpetual self-fertilisation and hybridisation." The bibliography, in which Professor BAILEY gives a list of publications, memoirs, &c., devoted to cross-breeding and hybridising, though obviously incomplete, will be very useful, and is not the least service Professor BAILEY has rendered to progressive horticulture.

EXHIBITION OF NATIVE AND GARDEN FLOWERS AT DUNDEE.—An exhibition of native and garden flowers, the second of its kind held in Dundee, was opened on Friday, July 1, in the City Assembly Rooms, in presence of a large company of ladies and gentlemen. Compared with that of last year, the display was superior both in point of numbers and quality; and in variety, richness of bloom, and brilliance of colour, little was left to be desired.

ROYAL BOTANIC SOCIETY.—The evening *fête* of the Society was held on Wednesday evening last, when, although the weather remained fine, and Messrs. L. D. BERRY & SONS had carried out the illuminations of the grounds as prettily as usual, the general effect was marred by the strong winds which continually blew out the lights. The attendance, too, was rather below the average, doubtless on account of the weather, and perhaps partly by reason of the General Election. Notwithstanding these things, however, a very enjoyable evening was spent.

THE DELEGATE CONFERENCE OF GARDENERS' ASSOCIATIONS, called by the members of the Tunbridge Wells Gardeners' Association, and to which notice has already been directed, was held on Wednesday last. About fifty persons interested in gardening were present, among them being Mr. Bond, of Swanley College; several of the secretaries of various local societies; Mr. BARRON, of the *Gardeners' Chronicle*; Mr. R. DEAN, who contributed a paper on Gardeners' Societies; Mr. FROST, of Maidstone, and others. At the dinner in the evening the MAYOR presided. Mr. Cornwall said that the existence of so many Gardeners' Associations throughout the country showed plainly that the members desired to co-operate in some direction for mutual benefit. At present, each body acted in an independent way; there was an absence of organisation and centralisation. Mr. Cornwall then spoke of the many advantages that would accrue by co-operation among gardeners, who would then be able as a body, and should endeavour, to get themselves represented by a State department, which it deserved as much as did agriculture. He advocated the scheme on general grounds, not for the personal benefit of individuals. He had visited the fruit show

held at the Guildhall, and been struck with the possible developments of fruit growing, but he felt that the promoters of that exhibition were not in touch with those whose interests were to be considered. He did not suggest a trade union, and had no desire to come between employer and employed, but he urged that gardeners should be an organised body, and until they were so, they would be in the background. There could be a system of examinations, and certificates might be granted, and the profession thus protected. Mr. Bond, of the Horticultural College, Swanley, spoke very forcibly on the strength of union, but asked for a more definite scheme. They had no foundation to work upon. Was the Association to look to the science and art of horticulture? If so, he would point out that there already existed a body doing its utmost to promote those interests, viz., the Royal Horticultural Society; he could not advise them to enter into competition with it, and they should not endeavour to supplant it until they knew that they had something considerably better. Perhaps a trades union could do much service to the gardener, but such unions were often defective, because of the governing body not fully understanding the local colour of a particular matter on which they were at work. He agreed with the principle of profit-sharing. Mr. Cornwall said the influence of the Royal Horticultural Society on local associations was practically nil. They wanted that body to come to them—not for them to go up to its meetings in London. The majority of members spoke very strongly against any approach to trades unionism. A delegate (from Cranbrook) pointed out that the question of certificates for gardeners was not new, as it had been taken in hand years ago by the Royal Horticultural Society, when he obtained one. Mr. Balchin (Brighton) wanted to know how the local societies were to benefit. After considerable discussion, it was decided to form an Association of Delegates, and a provisional committee was appointed to draw up a scheme, but at the present time no one can say the lines on which the new Association is to be built.

EARL'S COURT HORTICULTURAL EXHIBITION.

—Very complete arrangements have been made to protect the buildings from fire. Large high-pressure mains run through the principal galleries, theatre, concert-hall, &c., to which are connected twenty-five stations with stand-post hydrants, hose, hand-pumps, and buckets. Small fire-engines are also distributed through the buildings. These arrangements, as in previous exhibitions, have been made by Messrs. SHAND, MASON & Co., who also exhibit steam and manual fire-engines and other appliances. Superintendent DUCK is in charge of an efficient brigade, composed of men who have been through the Metropolitan Fire Brigade.

AUTOMATIC DAMPER.—A means of regulating the draught of garden furnaces has for a long time been a desideratum with those whose occupations interfere with a regular attendance to the fire during the day, and with all who must have the heating apparatus in action at night. The inventor claims for the damper the following advantages: The damper being worked by the temperature of the water in the pipes of greenhouses, will maintain it about the same temperature as long as the fire gives out heat. The damper being closed, or nearly so, when the maximum temperature of water is attained, the fire then only consumes sufficient fuel to keep up that temperature, and there is no fear of the temperature getting so hot as to force water out of the boiler. The necessity of constant attention is done away with as the damper closes as the heat increases, and at a certain point, to which it can be adjusted, it will remain almost without variation whilst the fire remains with a body of fuel to burn, so that if the boiler is charged with fuel at night, it will continue burning until exhausted. The increase of the bulk in water allows the patentee to utilise a rise and fall of the float in the supply-cistern, varying from 2 to 8 inches,

according to the length of piping heated, and the size of the cistern. They can be applied to nearly all the boilers now used for heating purposes, with little trouble or expense. We have examined the invention, which seems to be an extremely simple one, and which, if the water in the supply cistern be regulated according to the amount of piping, and the expansion pipe, if any, be of small diameter, can scarcely fail to act efficiently.

BOOKS AND PUBLICATIONS RECEIVED.—*Bees for Pleasure and Profit*, by G. GORDON SAMSON. (CROSBY LOCKWOOD & SON, London.) *Fruit Culture*, by W. E. STRONG (New York Publishing Co.).

PLANT PORTRAITS.

- ASCYRUM CRUX ANDREE, *Garden and Forest*, June 1.
 BEGONIA HAAGEANA, *Garden*, June 4.
 BOLTONIA LATICQUAMA, *Garden and Forest*, June 8.
 CALCEOLARIA PLUIE D'OR [Golden Rain], *Revue Horticole*, June 16.
 CALLISTEMON RIGIDUS, *Garden*, June 18.
 CATTLEYA ALEXANDRE, *Gardeners' Magazine*, June 18.
 CYPRIPEDIUM CALLOSUM, *Wiener Illustrierte Garten Zeitung*, 1892, t. ii.
 DENDROBIUM LAMELLATUM, *Lindley, Illustration Horticole*, t. 157.
 KNIPHOFIA CAULESCENS, *Garden*, June 11.
 LUCULLIA GRATISSIMA, *Garden*, May 21.
 ONCIDIUM PHALANOPSIS, *Garden*, May 28.
 PAPAYER ALPINUM FIMBRIATUM, *Westnik*, t. 59A.
 PHAIUS TUBERCULOSUS, *Revue de l'Horticulture Belge*, July 1.
 PHYLLOCACTUS FRANZII X and P. POMMER ESCHET, *Garten Flora*, t. 1370.
 PRIMULA FLORIBUNDA, *Garden*, June 25.
 PRUNELLA GRANDIFLORA, *Westnik*, t. 59B.
 RHODODENDRON RACEMOSUM, *Gardeners' Magazine*, June 4.
 SMILAX ARGYREA, *Linden et Rodigas, Illustration Horticole*, t. 158. A creeper with leaves lanceolate, acuminate, deep green, blotched with white. It obtained a certificate at the late Temple show.
 SWAINSONIA CORONILLÆFOLIA, *Revue de l'Horticulture Belge*, July.
 VIBURNUM COTINIFOLIUM, *Garden and Forest*, May 25.

HOME CORRESPONDENCE.

TO PRUNE OR NOT TO PRUNE NEWLY-PLANTED FRUIT TREES.—That is the question raised by "Pomum" at pp. 730, 731 of the last volume of the *Gardeners' Chronicle*. Not a few of us had hoped that the senseless process of growing fruit trees for faggot wood had come to an end, through the reign of law and the light of common sense. But no, according to "Pomum," if you want growing vigour and fertile force you must lay the foundation of both by cutting back your already well formed fully-equipped fruit-bearing trees to the smallest dimensions. True the modern methods of hastening and heightening fertility have furnished us with a fruit-bearing baby tree ready to hand. But this finished material is to be cut away, and a fresh start made, not to improve or intensify the fertility of the top, but to the waking up the roots. According to Mr. Mer's theory, it seems the roots lag behind the tops a fortnight or more in their start for life and growth in the spring-tide. Granting for the nonce that this may be so to some extent, it is difficult to see how unharnessing the leaders—that is, slashing off any, or ever so much, of the tops—should pull the roots up abreast with them, either in regard to their time or measure of growth. The writers and practitioners who counsel the letting of their fruit trees severely alone after planting, are less solicitous about encouraging greater root-action than the preservation and extension of their fruit-bearing material. Through the development of skill and the investment of capital, baby trees are now fully equipped for their life-long business of fruit-bearing, and much stronger reasons than any advanced by "Pomum" will be needed to show cause why they should not be allowed to do so at once, instead of being cut to pieces with a view of balancing the growing forces between root and top growth, or laying the foundations of fertility or sterility

afresh. Now, why this waste of time and force; and of valuable fruit in embryo? Because, according to "Pomum," the greater root-action, "which was not the object aimed at, does not take place." What does take place, however, is something widely different from this writer's doleful picture of failure, which is all shadow. Here are a few of its deeper shadows. Roots strained, tops starved, opportunities of shaping being lost never to return, debility, indurated glossy olive-brown bark exchanged for a tawny mixture of hazel and saffron; hide or bark-bound. And yet when "Pomum" alights from this flight of strong adjectives, what does he find on the trees themselves? This, as duly written on p. 730, col. c., paragraph 3 from top of page, "Why, that almost the whole of the wood-buds, through the want of proper root nourishment, have been formed into flower-buds, and the advocates of the system neglect to tell us to which of these we are to cut to in the following autumn." This testimony of the complete transformation of wood-buds into fruit-buds through the simplest of all processes, that of leaving the trees severely alone, is invaluable as a fact of supreme importance attested by an unwilling witness. Why, this hastened fertility is the very object and aim of all who prune their young trees lightly, or not at all. Neither is the object of leaving the tops intact to stimulate root-growth, but rather to check it, and turn it into fertile channels. And, as to the form of trees, what are nurseries for, but to mould trees into shape from their infancy. Train up a tree in the way it should go, and when it is old, or transplanted into a new home, there will be no need nor desire to force it to depart from it, or begin living or shaping itself afresh at the point of the knife; and this applies to the habits, the character of the tree, as well as to its shape. Early fertility, properly and wisely managed and adjusted, reproduces itself, and is the keystone of continuous fruit-bearing. For that "like produces like" is as true of fertility as of other features of life and growth. "Pomum's" imaginary difficulty of finding wood-buds to cut back to, only proves the extreme success of the non- or little-pruner's theories and practice. His theories of root-growth and rest are equally unreal. The roots of fruit trees never rest from their labours unless they themselves, or the outlets from their products, are shrivelled with drought, or frozen hard through cold. And has "Pomum" ever tried to measure up the awakening quickening force of disturbance on the growth of roots? If not, let him hasten to master this problem by lifting fruit trees any time during winter, and replanting or laying them in by the heels, and noting their root-growth from time to time. If he has not already done this, the activity and prodigality of root growth quickened into abnormal activity through disturbance will astonish him, and enable him to bury quickly out of sight most of his theories about the roots lagging behind in a state of dormancy, while the tops forge their way upwards into the mellowing warmth of the atmosphere. If the roots may seem less active at first in the race of new life in the spring, does not this arise from the fact that they have been more active all the winter, and have stuffed every bud so full of good things that the next and first steps to active growth must be one of emptying or depletion. But what does this return to the ancient hashings and slashings of our fruit trees mean? These things among others, either that our nurserymen fail to properly train their trees for fruit bearing, or that horticultural skill, in this year 1892, is not equal to the task of removing fruit trees safely from the nursery to their fruiting homes without marring, destroying, or reducing their size through excessive pruning of the finished machine, that is, the fertile tree they expect to be furnished with. The time is near at hand, if it has not already come, when the horticulturist will no more dream of cutting his fruit trees to pieces after planting than the farmer would his new ploughs or reapers, to make them do their work properly. The extra strain on the roots, incident to the support of an entire or slightly reduced top, is probably more than met through the greatly-accelerated root growth arising through disturbance. The moment healthy roots are detached from the soil they manifest an almost feverish anxiety to develop new fibres, and get a fresh grip of the earth. No one who has not noted this abnormal activity of root growth on the heels of disturbance, can be qualified to pronounce, *ex cathedra*, on the precedence of growth as between roots and tops, or the effects of non- or little top-pruning on the permanent health and perpetual fertility of fruit trees. D. T. F.

THE RECENT JUNE FROSTS.—It is hoped that observant gardeners, most of whom have ample opportunity for obtaining exact information, have not failed to secure registers of the extent of frost which did such exceeding harm on the morning of June 15 last. Information as to harm done to tender vegetables and bedding plants, whilst roughly indicative of the severity of the frost for the time of year, yet affords no actual data, and if in place thereof or with it, there can be furnished exact record of the degrees of frost experienced on that cold morning, then will there be something of a meteorological character presented worthy of being handed down to posterity. Some twenty years hence it will not satisfy gardening youth, it is hoped, to give us mere detail information as to the mischief wrought in gardens by frost, so near as within nine days of Midsummer-day. The question will be asked, "How many degrees were recorded in those places where injury seems to have been the worst?" And if none be afforded, the observing faculties of the gardeners of this generation, and neglect to obtain facts of a scientific kind, will come in for severe criticism. So far as the year has gone, and we are now just half-way through it, I do not know of any weather aspect or feature which calls for such marked notice as do the keen harmful frosts and cold wave which came upon us in the middle of June. As to the effects of that wave of cold upon myriads of tender plants, evidence will be afforded, in many cases, all the summer, for from the injuries inflicted some things never can recover. It is true that we can do nothing to prevent these cold waves coming, but at least it is well to have their area and density exactly recorded. *A. D.*

SINGLE-FLOWERED DIANTHUS.—I enclose you samples of a single-flowered Dianthus, which I think you will agree with me in regarding as an acquisition to hardy border plants of much interest. It is supposed to be a hybrid between a Carnation and a Pink, presumably single ones, and the large size of the flower favours this theory, the dark zone being doubtless derived from the latter. The plants I possess appear to have an excellent constitution, and very prolific of flowers. They were raised two years since from seed received under the name of *D. plumarius hybridus*, and are probably synonymous with the variety offered by a Paris firm under the designation of *D. Cyclops*, a preferable one, from its brevity, but my seedlings of this are not yet in flower. The specimens sent include, as you will observe, several distinct shades, varying from nearly pure white to rosy-crimson, all but one being marked with a broad zone of deep purple. Perhaps you will kindly give your opinion of their value. *W. Thompson, Ipswich.* [Varieties of *D. caryophyllus*, as we suppose, but deficient in bright colour. *Ed.*]

THE TOO EARLY REMOVAL OF EXHIBITS AT THE ROYAL HORTICULTURAL SOCIETY MEETING.—At the last meeting at the Drill Hall, I was told there were some splendid cut blooms of different varieties of *Cattleya*, exhibited by Baron Schroder, my informant taking me to where he had seen them. I then learned that they had been removed by a well-known firm long before the usual time for clearing the plants, &c., away. I certainly think that all exhibits brought before the different committees should remain in the hall until the end of meeting. *J. Carvill.*

LARCH FUNGUS.—Mr. Webster says: "The cause of the Larch dying is that the roots of the trees have come in contact with the chalky subsoil, and that he has always warned planters against planting in such soils or on the limestone formation." In this I disagree with him. In the first instance, the roots of Larch are not penetrating ones to any considerable depth, and as Mr. Rogers says, "There are various depths of soil throughout the plantations," and the age at which these trees died precludes that theory, as the roots could not have come in contact with the chalk. I have had the opportunity of seeing large areas of splendid Larch plantations growing up in a healthy state, and producing timber of the very best quality, and know of trees containing 200 cubic feet of timber, sound and in a healthy growing state, growing on the limestone. Mr. Rogers says, "It is his opinion that it is not the soil alone that is accountable for such disastrous results, but a most virulent attack of some particular fungus, which has been assisted by the last two seasons' drought" (?). (The italics are mine). In this statement I likewise disagree, as only last week I had the opportunity of calling attention—in a large public nursery—to Sycamores, Maples, Elms, &c., dying precisely in the same manner as Mr.

Wilson's Larch, as described by Mr. Rogers. The trees made an average growth of from 3 to 4 feet last year, and this season they expanded their leaves, and made from 2 to 3 inches growth, and then died. On making some inquiries, I was told that "they go like that every year," and they grew on a loamy soil on the red sandstone. In this case it was an easy matter to see what was the cause of death—which was not fungus—and to give a remedy against such an occurrence in future. *R. C. McGregor, June 23, 1892.*

SOCIETIES.

NATIONAL ROSE.

JULY 2.—The annual gathering of the National Rose Society took place, as in several previous seasons, at the Crystal Palace, on Saturday, in extremely favourable weather. Some earlier observations had led us to expect a falling off in the size, but not in the quality of the blooms, and Saturday's exhibition confirmed these expectations; and also the fact, sometimes lost sight of by exhibitors and beholders alike, that lack of size does not always mean loss of beauty. This was especially noticeable in some blooms of *Her Majesty*, which were just of the right size. The day was warm and fine, and the palace was extensively patronised by the admirers of the national flower.

NURSERYMENS' CLASSES.

The Challenge Trophy and 1st prize in the leading class for seventy-two distinct varieties, was won by Mr. Frank Cant, of Colchester, who, previous to last year, when his uncle carried off this coveted prize, held it during two years in succession. Upon this occasion, the collection was much better than might have been anticipated, seeing the adverse conditions under which Rose growers have had to tend and cherish their favourites; and although, perhaps, there have been better collections exhibited than this one, it contained many excellent and well-grown specimens. Here, as in the exhibits generally, the Tea-scented varieties appeared in best form. The following were some of the best, *Victor Hugo*, *Reynolds Hole*, *Caroline Kuster*, *Her Majesty*, *Madame de Watteville*, *Madame Gabrielle Luizet*, *The Bride*, *Star of Waltham*, *Chas. Lefebvre*, *Queen of Queens*, *Mrs. John Laing*, *Marie Verdier*, *Etienne Levet*, *Merveille de Lyon*, *Comtesse of Oxford*, *Pride of Waltham*, *La France*, *Souvenir d'Un Ami*, *Madame Eugénie Verdier*, *E. Y. Teas*, *Dupuy Jamain*, *Crown Prince*, *La France de '89*, *Marie Baumann*, *Annie Wood*, the striped *Pride of Reigate*, *Horace Vernet*, *Jeannie Dickson*, *Souvenir de la Malmaison*, *Emily Laxton*, and *Gustave Piganeau*. Mr. E. R. Cant, of Colchester, occupied the 2nd position worthily, and staged amongst others excellent examples of *Marie Finger*, *Her Majesty*, *Mrs. John Laing*, *Maréchal Niel*, *Crown Prince*, *Chas. Lefebvre*, *Madame Bravy*, *Mrs. Paul*, *Catherine Mermet*, *Duke of Teck*, *Magna Charta*, *Lady Mary Fitzwilliam*, *Marchioness of Dufferin*, *Lady Ellen Stewart*, *Cleopatra*, *Madame Lacharme*, and *Ulrich Brunner*. 3rd, Messrs. Paul & Son, The Old Nurseries, Cheshunt, and here were many very good blooms, including *Princess Beatrice*, *Captain Christy*, *Etienne Levet*, *Marguerite de St. Amand*, *A. K. Williams*, *Prince Camille de Rohan*, and *Comtesse de Blacas*.

In the class for forty-eight distinct, single trusses, Messrs. G. Cooling & Sons, Bath, obtained the 1st prize. The varieties were as follows:—*The Bride*, *Magna Charta*, *Madame S. Rodocanachi*, *Madame Gabrielle Luizet*, *A. Dumesnil*, *Honourable Edith Gifford*, *La France*, *Victor Verdier*, *Duke of Connaught*, *Mrs. Jno. Laing*, *Senateur Vaisse*, *Marguerite de St. Amand*, *Dr. Andry*, *Madame Cusin*, *Maréchal Niel*, *Mons. Noman*, *Ernest Pritz*, *Dupuy Jamain*, *Prince Arthur*, *Mrs. Watson*, *Madame I. Pereire*, *Anna Olivier*, *Madame M. Verdier*, *Comte de Raimbaud*, *Duchess de Morny*, *Senateur Vaisse*, *F. W. Girdlestone*, *Victor Hugo*, *Violette Bowyer*, *Le Havre*, *Merveille de Lyon*, *Victor Lemoine*, *Duchess de Vallombrosa*, *Horace Vernet*, *Marie Cointet*, *Baron Haussmann*, *Lady Mary Keith*, *Robert Marneock*, *Pride of Waltham*, *A. K. Williams*, *Etoile de Lyon*, *Comtesse d'Oxford*, *Princess Beatrice*, *Bartholemy Joubert*, *Baroness Rothschild*, *Heinrich Schultheiss*, *Madame C. Kuster*, and *Ulrich Brunner*.

Messrs. G. & W. H. Burch, Peterborough, were 2nd; their collection contained good specimens of *La France*, *Star of Waltham*, *John Stuart Mill*, *The Bride*, *Silver Queen*, *Alfred Colomb*, *Madame Joseph Desbois*, *Her Majesty*, *Louis Van Houtte*, *François*

Michelon, and *Ferdinand de Lesseps*. The 3rd prize was obtained by the English Fruit and Rose Company, Limited, King's Acre, Hereford.

In the class for forty-eight varieties, distinct, three trusses each, Mr. Frank Cant was 1st; Mr. Benjamin R. Cant, 2nd; and Mr. Charles Turner, The Royal Nurseries, Slough, 3rd.

For twenty-four, distinct, single trusses, the highest honour was obtained by Mr. W. Taylor, Osborn Nursery, Hampton, Middlesex, who had a capital collection, consisting of the following:—*Ulrich Brunner*, *Mrs. G. Dickson*, *Duke of Edinburgh*, *Catherine Mermet*, *Dupuy Jamain*, *John Laing*, *Victor Verdier*, *Madame Gabrielle Luizet*, *Prince Camille de Rohan*, *La France*, *E. Y. Teas*, *Comtesse of Pembroke*, *Louis Van Houtte*, *Hon. Edith Gifford*, *Star of Waltham*, *Her Majesty*, *Heinrich Schultheiss*, *Souvenir d'Un Ami*, *Cheshunt Hybrid*, *Gloire Lyonnaise*, *Le Havre*, *Marie Baumann*, *Marquise de Castellane*, and *Baroness Rothschild*. Mr. J. Mattock, The Market, Oxford, was a good 2nd, and showed good *Comtesse de Nadaillac*, *Souvenir d'Un Ami*, *Maréchal Niel*, and *Princess Mary of Cambridge*, &c. The 3rd position was taken by Mr. G. W. Piper, Uckfield, Sussex, the best of his collection being *Madame Gabrielle Luizet*, *Catherine Mermet*, and *Dupuy Jamain*.

In the class for twenty-four distinct varieties, three trusses of each, Messrs. B. Prior & Sons, Myland Nurseries, Colchester, were 1st, who showed much the same varieties that have already been mentioned, but included the good old *General Jacqueminot*, *Jean Ducher*, *Prince Arthur*, *Souvenir d'Elise Vardon*, *Viscountess Folkestone*, and *Fisher Holmes*.

Messrs. G. and W. H. Burch were 2nd, with a nice clean collection; and Mr. George Mount, Exotic and Rose Nurseries, Canterbury, were 3rd, in which latter there were several very good blooms.

AMATEURS.

In the principal class for amateurs, for forty-eight distinct varieties, single trusses, Mr. E. B. Lindsell, the successful exhibitor of last year, again secured the 1st prize, and included excellent blooms of *Duchess of Vallombrosa*, *Marie Van Houtte*, *Louis Van Houtte*, *Marie Rady*, *Maurice Bernardin*, *The Bride*, *Chas. Lefebvre*, *Mons. Noman*, *Captain Christy*, *Dupuy Jamain*, *Comtesse de Nadaillac*, *Chas. Lefebvre*, *Innocente Pirola*, *Gustave Piganeau*, *Lady Mary Fitzwilliam*, *Star of Waltham*, *Her Majesty*, *Madame G. Luizet*, *Princess of Wales*, *Francis Kruger*, *S.-M. Rodocanachi*, *Reynolds Hole*, &c.; 2nd, Mr. S. P. Budd; and 3rd, the Rev. J. H. Pemberton, Haveringe-atte-Bower, Essex.

Mr. Walter Drew, Uplands, Leabury, was 1st in the class for twenty-four distinct single trusses, his best were *Marquise de Castellane*, *E. D. Brie*, *Earl of Dufferin*, *Niphetos*, *Dupuy Jamain*, *Ulrich Brunner*, *Madame G. Luizet*, *Her Majesty*, *Lord Bacon*, *Merveille de Lyon*, *François Michelon*, and *La France*. A. Hill Gray, Esq., Beaulieu, Newbridge Hill, Bath, was 2nd, with good *Maréchal Niel*, *La France*, *Duke of Wellington*, *Devoniensis*, *The Bride*, *Lady M. Fitzwilliam*, *Madame G. Luizet*, *Catherine Mermet*, &c. 3rd, Mr. J. Gurney Fowler, Glebelands, Woodford, Essex.

For sixteen distinct varieties, three trusses of each, the 1st position was taken by Mr. E. B. Lindsell again, with *Souvenir de Elise Vardon*, *Prince Arthur*, *La France*, *Caroline Kuster*, *Ulrich Brunner*, *Madame Cusin*, *Dupuy Jamain*, *Madame G. Luizet*, *Exposition de Brie*, *Chas. Lefebvre*, *Niphetos*, *Dr. Sewell*, *Mrs. Jno. Laing*, *E. Y. Teas*, *Innocente Pirola*, and *François Michelon*; 2nd, Mr. S. P. Budd; 3rd, Mr. A. Slaughter, Jarvis Villa, Steyning.

Mr. Walter Drew, Uplands, Ledbury, was 1st for twelve distinct, three trusses each, with *Duke of Edinburgh*, *Comte Raimbaud*, *Jennie Dickson*, *Madame G. Luizet*, *Duke of Teck*, *Ulrich Brunner*, *La France*, &c.; *Mrs. Waterlow*, *Great Doods*, *Reigate* (gr. James Brown), was 2nd; and the Rev. H. Berners, Harkstead Rectory, Ipswich, 3rd.

For twelve single trusses of any hybrid perpetual, *Mrs. Waterlow* was 1st with very full good blooms of *Mrs. J. Laing*; A. Hill Gray, Esq., was 2nd, with *La France*; and Mr. S. P. Budd, 3rd, with large blooms of *Ulrich Brunner*.

The following five classes were open only to amateurs who grow less than 2000 plants, including Teas and Noisettes:—

For twenty-four distinct single trusses, the Rev. W. J. Romaine, The Priory, Old Windsor, was 1st, the best of whose exhibit were *Comtesse d'Oxford*, *Mrs. Jno. Laing*, *Madame Welche*, *Maréchal Niel*, *Her Majesty*, *Etienne Levet*, *Heinrich Schultheiss*,

Earl of Dufferin, Viscount Folkestone, and Louis van Houtte; 2nd, Mr. J. C. Taker, Middleton Hall, Brentwood.

For eighteen distinct single trusses, Mr. E. M. Bethune, Denne Park, Horsham, was 1st, with very good blooms of La France, Chas. Darwin, Dupuy Jamain, Madame Gabrielle Luizet, Madame Isaac Pereire, Marie Finger, Mrs. Jno. Laing, A. K. Williams, Duchesse of Bedford, &c.; 2nd, Mr. F. T. Baker, Holmfield, Reigate, in which was noticed good examples of Madame G. Luizet, Alfred Colomb, E. Y. Teas, Horace Vernet, General Jacqueminot, Etienne Levé, and Mrs. Jno. Laing; Mr. Ed. Mawley, Rosebank, Berkhamstead, was 3rd.

Mr. W. H. Fowler, Claremont, Taunton, was 1st in the competition for twelve distinct single trusses, showing best Ernest Metz, Innocente Pirola, Niphotos, Prince of Wales, and Souvenir de Elise Vardon; 2nd, Mr. Fred Warde, Aldon, Addington, West Malling; 3rd, Mr. E. Wilkins, Monksdene, Sutton.

For eight distinct triplets, Mr. E. Wilkins was 1st with Maurice Bernardin, La France, A. K. Williams, Earl of Dufferin, Ulrich Brunner, Madame Gabrielle Luizet, Charles Lefebvre, and Le Havre; 2nd, Mr. P. C. G. Burnard, Reigate; and 3rd, the Rev. W. J. Romaine.

Any H.P. Rose, nine blooms.—Madame Gabrielle Luizet, shown by Mr. E. M. Bethune, secured highest honour; and the same variety secured the 2nd place for Mr. E. Wilkins, Monksdene; and the 3rd position for the Rev. W. J. Romaine.

The following four classes, open only to growers of fewer than 1000 plants:—

The best twelve distinct single trusses came from Dr. Tucker, Swanley Junction, who had Her Majesty, Abel Carrière, Duke of Edinburgh, La France, Mrs. John Laing, Dr. Hogg, Captain Christy, Ulrich Brunner, Marquise de Castellane, A. K. Williams, and Charles Darwin; 2nd, Mr. E. J. Grahame, Coombe Road, Croydon; 3rd, Mr. R. L. Knight, Bobbing, Sittingbourne.

Nine distinct, single trusses.—In this class, the Rev. H. B. Biron, Hythe, was 1st with Le Havre, Madame G. Luizet, Marie Finger, Etienne Levé, Ulrich Brunner, Duke of Wellington, Innocente Pirola, A. K. Williams, and Charles Lefebvre; 2nd, Rev. S. F. Taylor, Littleton Vicarage, Evesham; 3rd, Mr. C. E. Cuthell, Chapel Croft, Dorking.

Six distinct, single trusses.—1st, Dr. Tucker, Swanley Junction; 2nd, Mr. O. G. Orpen, West Bergholt, near Colchester; and 3rd, Mr. C. E. Cuthell.

Any H.P., nine blooms.—Dr. Tucker was again 1st, with large blooms of Her Majesty; Mr. James Parker, Old Headington, Oxon, 2nd, with Madame Gabrielle Luizet; and Mr. C. J. Grahame, 3rd, with Marie Baumann.

The following three classes, open only to growers of fewer than 500 plants:—

Nine distinct single trusses.—In this class Mr. Henry Foster, North Street, Ashford, Kent, was 1st, Mr. G. Moules 2nd, and Mr. E. Rutter, Halliford-on-Thames, Shepperton, 3rd.

Six single trusses.—1st, Mr. Edward Horne, Park House, Reigate, with Ulrich Brunner, Marquise de Castillane, Chas. Lefebvre, François Michelin, Madame Gabrielle Luizet, and Madame I. Pereire; 2nd, Mr. H. P. Landon, Shenfield, Brentwood, Essex; 3rd, Mr. Hugh White, Woodside Cottage, Highgate, N.

In the class for six distinct single trusses, open only to amateurs who have not before won any prize at an exhibition of the National Rose Society, Mr. W. H. Fowler, Claremont, Taunton, was 1st; Mr. W. Hooper, Glens Mount, Sutton, Surrey, 2nd; and Mr. F. S. Francis, Crofton Hall, Orpington, Kent, 3rd.

Six distinct trusses, grown within 8 miles of Charing Cross.—1st, Mr. R. H. Langton, Raymead, Hendon; 2nd, Mr. Walter Northones, 22, Wolsley Road, Crouch End, N.; 3rd, Mr. Jno. Bateman, Rosevale, Archway Road, N.

Six new Roses, distinct.—The Rev. J. H. Pemberton was 1st.

TEAS AND NOISETTE ROSES (NURSERYMEN).

For twenty-four Roses to be shown in single trusses, 1st, Mr. G. Prince, Oxford, who showed (as he always does) a nice lot of fresh-looking blooms, the finest of which were, Comtesse de Nadailac, Souvenir d'Elise Vardon, Madame de Watteville, Niphotos, La Boule d'Or, Amazon, a bright primrose; and Maréchal Niel, Mons. Furtado, very similar in colour to Amazon; and Madame Kuster. The yellow Roses were very good. In pink Roses, Souvenir d'un Ami, Adam and Ernest Metz, a light pink; and Madame Cusin, a purplish pink, a fairly full Rose. The whites included Edith Gifford, Rubens, Cornelius Koch, The Bride, and Innocente Pirola.

Mr. F. Cant took the 2nd place with blooms generally good, but lacking evenness; M. Niel, Souvenir d'Elise Vardon, Princess, Jean Ducher, and Madame Angèle Lacquier were amongst his finer blooms. Mr. B. R. Cant, who was 3rd, had some unapproachable blooms in his box.

For eighteen Roses, single trusses, distinct.—1st, Mr. J. Mattock, Oxford, with blooms, fresh and cut just at the right moment, Maréchal Niel, Amazon, Marie Van Houtte, Jean Ducher, among Roses of yellow shades; Miss Ethel Brownlow, Souvenir d'un Ami, and Madame de Watteville among pink varieties. 2nd, Messrs. D. Prior & Son, Colchester, Marie Van Houtte, Souvenir d'Elise Vardon, The Bride, and Madame Hoste were his best varieties; Messrs. Burrell & Co., Cambridge, who took the 3rd place, had some fair-sized blooms.

For twelve Roses, single trusses, Maréchal Niel excepted.—1st, Mr. F. Cant with beautiful blooms of Madame de Watteville, than which, none could be finer; 2nd, G. & W. H. Burch, Peterborough, with Niphotos, a perfect lot of this favourite variety; 3rd, Mr. B. R. Cant, with Madame de Watteville. There were eight entries in this class, and Caroline Kuster, Princess of Wales, Comtesse de Nadailac, were well shown by the Oxford men.

For eighteen varieties, three trusses of each, Mr. G. Prince showed blooms of the same varieties he had shown in a previous class, and was placed 1st for a particularly fine boxful; Mr. J. Mattock taking the 2nd place, and Mr. F. Cant the 3rd. Seven entries in all.

AMATEURS.

For eighteen Roses, single trusses, distinct.—1st, Mr. A. Hill Gray, Beaulieu, Bath, his stand gaining for him the National Rose Society's Champion Challenge Trophy; the varieties were Amazon, Niphotos, Marie Van Houtte, Cleopatra, Triomphe de Rennes, Souvenir de Paul Neyron, Maréchal Niel, Madame Bravy, Etoile de Lyon, Madame Cusin, &c. 3rd, Rev. H. Berners, Harkstead Rectory, Ipswich, who had some very excellent blooms. Seven entries in this class.

For twelve single trusses, distinct.—In this competition there were five entries, but the blooms of most of these were not very good. A 3rd prize was awarded to T. B. Haywood, Esq. (gr., Mr. C. J. Salter), Woodhatch, Reigate, for a stand of flowers that would have been fine ones had they not been a little too forward. Anna Olivier, The Bride, Alba Rosea, Jean Ducher were the best.

For twelve distinct varieties, three trusses of each, 1st, Mr. A. Hill Gray, who took with this stand the Townsend-Boscawen Memorial Cup. It was an excellent boxful, and consisted of, amongst others, C. Mermet, Jean Ducher, Edith Gifford, Souvenir de Thérèse Levé, Souvenir d'Elise Vardon, The Bride, and Princess of Wales; 2nd, Rev. F. R. Burnside, Birch Vicarage, Hereford, with Madame Bravy, Madame Cusin, Ernest Metz, and Catherine Mermet—very nice blooms; 3rd, Rev. H. Berners. The large number of ten entries were obtained in this class.

For nine single trusses, there was a strong competition, as many as twelve competitors entering for the contest. 1st, Rev. H. Berners, with blooms perfectly formed and of medium size, of Innocente Pirola; 2nd, E. M. Bethune, Esq., Denne Park, Horsham, with The Bride, rather small blooms; 3rd, Mr. E. B. Lindsell, Bearton, Hitchin, with Catherine Mermet.

Under Subdivision II. of the Tea and Noisette classes, there were four classes set apart for those who are growers of fewer than 500 plants of these varieties in the National Rose Society's catalogue. The first of these is for twelve single trusses, distinct, and here Mr. O. G. Orpe, West Bergholt, Colchester, obtained the Silver Medal of the *Gardeners' Magazine* with some nice blooms, the best of which were Francesca Kruger, Madame Cusin, Ethel Brownlow, and C. Mermet; 2nd, C. J. Grahame, Esq., Coombe Road, Croydon, with some good Roses for that light, gravelly district, viz., Marie Van Houtte, Souvenir d'Elise Vardon, and Madame Hoste; Rev. F. P. Roberts, Scole Rectory, coming 3rd. The competition was weak.

For nine distinct single trusses.—1st, Mr. E. Wilkins, Monksdene, Sutton, Surrey, small, regular, and fair blooms; 2nd, Mr. W. Drew, Uplands, Ledbury. Amongst his flowers there was to be observed the largest one of Niphotos exhibited that day; 3rd, Mr. W. G. Romaine, Priory, Old Windsor. The entries in this last class numbered eight, but the competition was feeble.

For six distinct varieties, three trusses each, 1st, P. G. C. Burnard, Esq., Reigate—a mediocre lot of

blooms; the winners of the 2nd and 3rd were respectively Rev. F. Page Roberts, and Mr. D. G. Orpen.

For six single trusses of any variety, Tea or Noisette, 1st, C. J. Grahame, Esq., with Madame Cusin; 2nd, A. Tate, Esq., Downside, Leatherhead, with Souvenir d'Elise Vardon; 3rd, Rev. J. H. Pemberton, Havering-atte-Bower, with C. Kuster. Competitors numbered eight.

Classes for Growers of fewer than 200 Teas and Noisettes.—For nine distinct, single trusses, 1st, Ed. Mawley, Esq., Rosebank, Berkhamstead, whose flowers were excellent, if small; The Bride, Waban, C. Kuster, Madame Cusin, and Madame Willarmoz were the finer. Dr. Tucker, Swanley Junction, was 2nd, and W. D. Freshfield 3rd.

For six distinct varieties, single trusses, the entries numbered ten, and the 1st prize went to Mrs. C. Cuthbert, Strickstenning Birch, Hereford, whose excellent lot contained fine blooms of The Bride, Marie Van Houtte, Princess of Wales, and Madame Cusin, a very large bloom; 2nd, Rev. F. S. Taylor, Littleton Vicarage, Evesham, with fine Maréchal Niel, Madame Cusin, and Souvenir A. Olivier; 3rd, C. E. Cuthell, Chapel Croft, Dorking.

OPEN CLASSES.

For twelve single trusses of any yellow Rose, 1st, Mr. G. Prince, Oxford, with perfect blooms of Comtesse de Nadailac; Amazon, which is a bloom that looks well in the mass, obtained the 2nd place for Mr. J. Mattock, Oxford; Mr. F. Cant taking the 3rd with Caroline Kuster.

In the any white Rose class, the winner was Mr. F. Cant, with medium-sized blooms of the Bride; 2nd, Rev. R. F. Burnside with Innocente Pirola, whose blooms ranged from fairly large to quite small ones. Mr. J. Mattock was 3rd, with Rubens. There were eleven entries.

The any crimson, excepting A. K. Williams, Rose class was less-numerously filled, but, to our thinking, the most perfect Rose shown on this occasion took the 1st prize, Dupuy Jamain, shown by Mr. B. R. Cant; 2nd, Mr. G. Mount, Canterbury, with Ulrich Brunner; 3rd, Messrs. G. Cooling & Sons, Bath, with Fisher Holmes.

For twelve single trusses of any dark velvety crimson Rose. A weak contest. 1st, Mr. G. Mount, with Fisher Holmes; 2nd, Messrs. Cooling & Sons, with Abbé Regnière, a smallish Rose, of a very dark crimson shade, the back of the petals being of slaty hue. Mr. B. R. Cant came 3rd, with Duke of Edinburgh.

For twelve single trusses of Maréchal Niel, A. Hill Gray, Esq., was 1st, Mr. F. Cant 2nd, and Mr. G. Mount 3rd. On the whole, these blooms were under the normal size.

For twelve Marie Baumann, Mr. G. Mount, 1st, with fine examples; Mr. B. R. Cant, 2nd; and Messrs. Hugh Low & Co, 3rd. None of these could be said to be up to the standard in size.

For twelve single trusses of Mrs. John Laing, Mr. F. Cant who was 1st, showed a very choice box of large even blooms in great perfection; 2nd, Mr. B. R. Cant, with good blooms. Mr. B. R. Cant was 1st for twelve single trusses of A. K. Williams; Messrs. Paul & Son, Cheshunt, 2nd; and the English Fruit and Rose Co., King's Acre, 3rd.

For twelve single trusses of Niphotos there were twelve entries, the winners being—1st, Messrs. Keynes, Williams & Co., Salisbury, with every bloom in perfection; 2nd, Messrs. G. & W. H. Burch; 3rd, Mr. Frank Cant.

For twelve single trusses of Her Majesty, Mr. F. Cant was the sole exhibitor, and his blooms were the perfection of size and form.

For twelve single trusses of any Rose not named above, 1st, Mr. B. R. Cant, with Gabrielle Luizet, a good box, some very fine blooms amongst them; 2nd, Mr. C. Turner, Royal Nurseries, Slough, with Gabrielle Luizet, and Lady M. Fitzwilliam, the latter being of especial excellence.

For six single trusses, C. Mermet, Mr. G. Prince took the 1st place, and Messrs. Paul & Son 2nd.

The prizes for twelve single trusses of any new Rose were taken by Mr. B. R. Cant, 1st, for Gustave Piganeau, a fine large crimson Rose of good quality; Mr. F. Cant and Messrs. W. Paul & Son being equal 2nd for Mrs. Paul; and Mr. F. Cant 3rd, with G. Piganeau.

BEST FLOWER IN THE SHOW.

Nurserymen's.—The medal for the best in the show was won by Mr. Benj. R. Cant, of Colchester, with a bloom of Souvenir d'Elise Vardon.

Best H.P.—This honour went also to Mr. Benj. R. Cant, for his Gustave Piganeau; and, in the

amateur's division, Mr. E. B. Lindell had shown the best H.P., which, in this case, was Dupuy Jamain.

The same distinction amongst amateurs was gained by Mr. Alfred Tate, Downside, Leatherhead, also with Souvenir d'Elise Vardon.

MISCELLANEOUS.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, showed many boxes of excellent Roses. Messrs. P. Barr & Sons, King Street, Covent Garden, showed hardy perennials in bloom. Mr. W. Ramsey, boxes of Roses; Messrs. H. Cannell & Son, Swanley, numerous varieties of tuberous Begonias, in trusses of three or four flowers; Messrs. J. Peed & Son, Roupell Park Nurseries, Caladiums, large and small; and Messrs. J. Laing & Son, Stanstead Park Nurseries, Forest Hill, had a showy bank, consisting of plants of hardy perennials, Caladiums, Cannas, Begonias, Orchids, Gloxinias, &c.

Among this class of non-competitive exhibits was an immense stand of plants and cut blooms from Messrs. Paul & Son, Waltham Cross. Roses were here shown in rich variety. Particularly noticeable were White Lady, shown in excellent form, a pretty moss variety called White Pet, Madame Falcot, which looked delicately beautiful; Princess May, a lovely pink, sweet scented, and good form; Louis Van Houtte, fairly well coloured; Madame Hoste, that pretty lemon yellow Tea; and Capucine, a distinct bronze.

Messrs. Carter & Co., High Holborn, had a collection of succulent plants in small specimens of the more popular kinds.

Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, exhibited a pleasing collection of hardy flowers, as well as a collection of Violas, and some four dozen varieties of Roses.

Garden Roses were profusely shown as cut blooms by Messrs. Paul & Son the Old Nursery, Cheshunt, Messrs. Cooling & Sons, Bath, and E. F. Such, Maidenhead.

A Silver Medal was awarded Lord Penzance, for seedling Roses, mostly Sweet Briars. His lordship showed also a box of double and semi-double-flowered seedlings, Dick Hatterick, Dandy Dinmont, Wamba, Dugald Dalgetty, Edie Ochiltree, &c.

A. Hill Gray, Esq., showed a fawn-coloured seedling Rose, Alister Stella Gray, flowers small and double, leaves glistening and small.

INTERNATIONAL HORTICULTURAL EXHIBITION, EARL'S COURT.

JULY 5.—The show of Roses at Earl's Court was a decided success, both in the quantity and quality of the exhibits. In the leading classes, which were much the same as those of the National Rose Society at the Crystal Palace on Saturday last, the Roses, both H.P.'s and Teas, were much finer. This perhaps may be explained by the lateness of the season, and the fact that exhibitors on the latter occasion had a few more days in which to perfect their blooms.

NURSEYMEN.

In the leading division for seventy-two varieties, Mr. F. Cant, of Colchester, took the same position as he obtained at the Crystal Palace on July 2, with a collection that much surpassed those he exhibited on that date. It consisted of the following varieties:—Madame George Paul, Captain Christy, Comtesse d'Oxford, The Bride, Madame Victor Verdier, Marie Van Houtte, Catherine Mermet, Gustave Piganeau, A. Colomb, Marchioness of Dufferin, Mrs. Baker, Comtesse de Nadaillac, Charles Darwin, Etoile d'Yvon, Lady Ellen Stewart, Souvenir d'un Ami, Le Havre, Devoniensis, Prince Camille de Rohan, Mdll. Gabrielle Luizet, Jean Souper, Anna Olivier, Dr. Andrieu, Hon. Edith Gifford, Suzanne-Marie Rodocanachi, Innocente Pirola, General Jacqueminot, Pride of Waltham, Duke of Teck, Madame de Watteville, Duke of Connaught, Her Majesty, Cleopatra, Fisher Holmes, Maréchal Niel, Prince Arthur Jennie Dickson, Earl of Dufferin, Mary Bennett, Exposition de Brie, Annie Laxton, Duchess of Bedford, Mrs. H. Turner, Madame Hippolyte Jamain, Comte de Raimbaud, Countess of Pembroke, Mons. Noman, Countess of Rosebery, Marie Rady, Mrs. John Laing, E. Y. Teas, Madame Hoste, Madame Cosin, Sir Rowland Hill, Duke of Edinburgh, Ernest Metz, Marie Verdier, Comtesse de Panisse, Horace Vernet, Germaine Caillot, Heinrich Schultheiss, Niphotos, Victor Hugo, Souvenir d'Elise Vardon, A. K. Williams, Baroness Rothschild, Harrison Weir, Jean

Ducher, Etienne Levett, Dupuy Jamain, Lady Mary Fitzwilliam, and Chas. Lefebvre; Mr. Benjamin R. Cant, of Colchester, was a good 2nd; and Messrs. Paul & Son, Old Nurseries, Cheshunt, were 3rd.

In the class for thirty-six single varieties, Mr. B. R. Cant secured premier position, with a very fine lot, most of the varieties were shown in the seventy-two. Mr. F. Cant was 2nd, and Mr. G. Prince, Market Street, Oxford, 3rd. In the class for twenty-four varieties, Mr. Chas. Turner, The Royal Nurseries, Slough, was 1st; Messrs. G. and W. H. Burch, Peterborough, 2nd; and Messrs. Keynes, Williams & Co., The Nurseries, Salisbury 3rd.

For forty-eight distinct varieties, three trusses of each, Mr. B. R. Cant was again 1st, and Messrs. Paul & Son, Cheshunt, 2nd.

For twenty-four varieties, three trusses of each, Mr. Frank Cant obtained premier position; Mr. Chas. Turner, The Royal Nurseries, Slough, 2nd; and Mr. Geo. Prince, Market Street, Oxford, 3rd. The quality that characterised the H.P.'s was well maintained in the Teas, and in the class for twenty-four Tea and Noisette, distinct, single trusses, Mr. Benjamin R. Cant secured the 1st prize, with a very creditable collection, including particularly good specimens of Souvenir d'un Ami, Niphotos, Ernest Metz, Ethel Brownlow, &c. Mr. Frank Cant was 2nd, and Mr. George Prince 3rd.

In the competition for eighteen Tea or Noisette, Mr. George Mount, Canterbury, was 1st. He had excellent Catherine Mermet, The Bride, Anna Olivier, Hon. E. Gifford, Ethel Brownlow, &c.; 2nd, Messrs. G. W. Piper & Son, Uckfield, Sussex; and 3rd, Messrs. Paul & Son, Cheshunt.

Messrs. Keynes, Williams & Co., The Nurseries, Salisbury, were 1st in the class for twelve single trusses of any Tea or Noisette, distinct, showing good blooms of climbing Devoniensis, but which showed a few marks of the rough weather we have had. Mr. Benjamin R. Cant was 2nd, with Madame de Watteville; and Mr. George Prince 3rd, with Comtesse de Nadaillac.

OPEN CLASSES.

For twelve hybrid perpetuals of any one sort, Messrs. Perkins & Son, Coventry, were 1st, with excellent blooms of Lady Mary Fitzwilliam, Mr. Chas. Turner, A. K. Williams, 2nd; and Gustave Piganeau, shown by Mr. Benjamin R. Cant, 3rd.

For twelve Teas, of any sort, Mr. Benjamin R. Cant showed well-coloured blooms of Innocente Pirola; and Mr. F. Cant, who was 2nd, had good Madame de Watteville; whilst Mr. G. Prince was 3rd. In the competition for nine Tea or Noisette, single trusses of any new variety introduced since 1889, Mr. G. Prince fared best with a nice sample of Souvenir de S. A. Prince; and Messrs. Paul & Son, Cheshunt, 2nd, with Ernest Metz. Messrs. Lambert & Reiter, Treves, Germany, had a hybrid Tea, called Auguste Victoria.

For three single trusses of any new seedling Rose or distinct sport, either not in commerce, or not distributed earlier than November, 1891, Messrs. Wm. Paul & Son, Waltham Cross, showed their new and pretty Corunna, which has been often described lately; and Messrs. Paul & Son, Cheshunt, were 2nd with Paul's Early Blush, H.P. Messrs. Paul & Son, Cheshunt, were 1st for thirty-six bunches of garden Roses, distinct varieties, not less than three trusses to a bunch; and Mr. E. F. Such, Maidenhead, was 2nd.

AMATEURS.

In the leading class for forty-eight Roses, distinct, single trusses, the 1st prize went to Mr. E. B. Lindell, Bearton, Hitchin, who included in his collection really fine examples of Earl Dufferin, Etienne Levett, Etoile de Lyon, A. K. Williams, Ulrich Brunner, E. Y. Teas, Captain Christy, Maurice Bernardin, Marie Baumann, The Bride, Beauty of Waltham, Louis Van Houtte, Duke of Connaught, Francis Michelin, and Her Majesty; the Rev. J. H. Pemberton, Havering-atte-Bower, Essex, was 2nd, and Mr. H. V. Machin, Gateford Hill, Workop, 3rd.

For eighteen Roses, distinct, three trusses of each, each of the exhibitors in the above class took their respective places in this one also. Mr. R. Knight, Bobbing, Sittingbourne, secured the highest award for eighteen Roses, distinct, single trusses, J. C. Tasker, Esq., Middleton Hall, Brentwood (gr., P. Perry), 2nd; and Mr. J. Bateman, Rosevale, Archway Road, N., 3rd.

For eighteen Tea and Noisette, distinct, single trusses, Mr. E. B. Lindell was again successful; the Rev. J. H. Pemberton, 2nd; and Mr. Henry V. Machin, Gateford Hill, Workop, 3rd; Mr. R. Knight,

Bobbing, Sittingbourne, was 1st for twelve Tea and Noisette, distinct, single trusses.

TABLE DECORATIONS, &c.

There were numerous competitors for the prizes for table decoration. Dinner-table completely laid out for twelve persons (open). Most of these were tastefully executed, and the judges must have had a difficult task in giving the awards. Mr. Sydney T. Spalding, Avenue House, South Darenth, Kent, was placed 1st, and Mrs. Helen Butt, 16, Gwendwr Road, West Kensington, 2nd.

For three stands or vases of flowers and foliage suitable for dinner table (open), Mr. J. R. Chard, Brunswick Nursery, Stoke Newington, was placed 1st, with the now familiar floral arches; Mr. A. Larke, 14, Kensington High Street, was 2nd; and Mr. Walter Mole, 22, High Street, Hemel Hempstead, 3rd.

Miss Foden, Martower, Hemel Hempstead, was 1st for a single stand of flowers for the same purpose; Mr. W. Brown, St. Mary's Grove Nursery, Richmond, 2nd; and 3rd, Mr. A. Larke, Kensington High Street.

For a single stand of wild flowers, Miss Nellie Owen, High Street, Basingstoke, took the palm, with an arrangement consisting for the most part of grasses; Miss Lilian Hudson, Gunnersbury House, Acton, 2nd; and Mr. Dick Radclyffe, 129, High Holborn, 3rd, with blue Cornflowers and grasses only. There was extensive competition in all the classes of this section, but in each class the same exhibitors were mostly successful. For three bouquets, one bride's and two bridesmaid's, Messrs. Perkins & Son, Coventry, were 1st, and showed a very charming bouquet of Eucharis, Odontoglossums, Roses, Stephanotis, Pancratiums, &c., as the bride's; and the two for the maids, being composed wholly of pink Carnations; Mr. St. Leger, 16, Brook Street, New Bond Street, 2nd; and Mr. A. Larke, 14, Kensington High Street, 3rd.

Messrs. Perkins & Son were again 1st for one bouquet, and also for three bouquets (for a ball); with Mr. W. Brown, St. Mary's Grove Nurseries, Richmond, 2nd.

For six buttonhole bouquets, Messrs. Perkins again secured premier position; Messrs. Lilian Hudson 2nd; and Mr. Geo. Mount, Canterbury, 3rd. The same firm were again 1st for three ladies sprays, Messrs. Baines, South Kensington, 2nd, and Mr. Geo. Mount, 3rd. For the best-arranged basket of cut flowers, Messrs. Perkins & Son carried the palm; Miss Foden, Hemel Hempstead, came 2nd, and Mr. St. Leger, 3rd. In this class there were eleven competitors.

Mr. W. Brown, Richmond, was 1st for a bouquet of natural grasses and Ferns; Messrs. Perkins & Son, 2nd, and Miss Foden, 3rd. For six plants suitable for table decoration in 6-inch pots, amateurs, E. H. Coates, Esq., Burtwood, Caterham (gr., C. Lane), was 1st; W. N. Froy, Esq., Ripon House, Putney Heath, 2nd; and the Earl of Dysart, 3rd. Mrs. Margaret Hodgkin, 5, Beaufort Avenue, Bidsbury, Manchester, received a Gold Medal for a collection of skeletonised leaves, &c.; and Miss Ada Stanley, Epworth, Lincoln, a Bronze Medal.

MISCELLANEOUS.

In the class for a group of Begonias (double and single), arranged with suitable foliage plants for effect, space not to exceed 150 square feet, the 1st prize was awarded to Mr. Thos. Ware, Hale Farm Nurseries, Tottenham, for a tastefully-arranged collection; whilst Messrs. Laing & Son, Forest Hill, were 2nd, with a group of magnificently grown plants, which had the disadvantage of being staged in a less favourable position than that of the more successful exhibitor.

Messrs. Laing & Sons were 1st for a group of foliage Begonias (open), and Mr. Thos. Ware was 1st for a collection of hardy herbaceous and bulbous perennials arranged in bunches (nurserymen), who staged a very beautiful collection of Lilies in variety, Delphiniums, Iceland Poppies, &c., and a very fine spike of the pretty Eremurus Bergii. Messrs. Barr & Son, Covent Garden, were 2nd with a lot also possessing much merit.

For eighteen bunches of hardy herbaceous and bulbous perennials, distinct (amateurs), the Earl of Dysart, Ham House, Richmond (gr., Mr. Sage), was 1st; and H. Berkeley James, Esq., The Oaks, Carshalton (gr., Jas. Gibson), was 1st for twelve bunches; and John Watson, Esq., Reigate, Surrey, was 2nd.

NON-COMPETITIVE.

Amongst the non-competing exhibits was an immense group of Roses, both plants and cut blooms in great variety from Messrs. Wm. Paul & Sons,

Waltham Cross, which will be continued until the 16th inst., and which received a Gold Medal.

Messrs. Sander & Co., St. Albans, had a very charming collection of rare and valuable Orchids, including a large number of excellent varieties of *Odontoglossum vexillarium*, many of which received First-class Certificates; also a plant bearing a good spike of *Oncidium Döbneri*, *Vanda Hookeriana*, and *V. Sanderiana*; *Cattleya Leopoldi* var. *Lauchiana* (First-class Certificate), *Aërides Sanderianum*, a number of *Masdevallias*, and the pretty *Odontoglossum hastilabium*, beside a number of cut spikes of *Epidendrum vitellinum majus*. (Gold Medal.)

Messrs. Wills & Seegar showed a group of large Palms, similar to those shown at the last exhibition, and occupying the further ends of both annexes. These added much to the general effect of the exhibition.

Messrs. Cannell & Sons had a stand of *Begonias* (double), including the pink *Rosebud*; Mr. L. Castle, that very fine *Camellia*-like variety; and many others. They were shown in bunches among *Adiantum* Fern, and had a very pleasing effect. (Silver-gilt Medal.)

Messrs. John Laing & Son had a collection of *Roses*, also a group of cut flowers (hardy). (Silver-gilt Medal.)

Messrs. E. Shuttleworth and Co., Albert Nurseries, Peckham Rye, had a group of tastefully arranged stove and greenhouse plants in the centre of the annexe between the various tables in the decorative competition. (A Silver Medal.)

A Silver-gilt Medal was awarded to Mr. Ed. Pynaert van Geert, Ghent, Belgium, for a very fine and healthy specimen of *Sobralia macrantha nana*, some 6 feet in diameter, and just commencing to flower.

Mr. Alfred Smith, Downley, near High Wycombe, had cut *Roses*, *Pansies*, *Violas*, and *Pinks*. (Bronze Medal.) Messrs. Wm. Cutbush & Son had a stand of foliage plants, *Bertolonias*, *Sarracenias*, &c., for which they received a Bronze Medal.

Messrs. Kelway & Son, Langport, Somersetshire, showed a very fine collection of *Delphiniums*, containing many new varieties; James Kelway is a large double flower, of purplish-blue, with a centre nearly white. (First-class Certificate.) *Utah*, another very large purple flower, was also similarly recognised. This same firm had a group of hardy cut flowers in rich variety. (Silver-gilt Medal.)

Messrs. B. S. Williams continue their show in the insectivorous-house, where they have a number of very interesting plants, including groups of *Orchids*, *Nepenthes*, *Sarracenias*, *Ouvirandra faestralis* (the Madagascar lattice-leaved plant), *Dionæa Muscipala* (Venus' Fly-trap), some *Bertolonias*, and many other such-like rarities.

FRUIT.

Very probably the general election, the which has everywhere filled country houses and kept gardeners actively engaged, tended to limit the supply of fruit on exhibition. In the two classes for collections, there was but one competitor in each. The one for twelve dishes was however very worthily a 1st prize, for Mr. Robins, gr. to Col. Lee, Aylesbury, who had very nice black *Hamburgh* and *Buckland Sweetwater Grapes*, *Violette Hative* and *Diamond Peaches*, *Rivers' Early Orange*, and *Spencer Nectarines*, *Melon*, *Cherries*, &c. In the class for six dishes, Mr. Ocock, gr. to Mrs. Mackintosh, Romford, had fairly good black and white *Grapes*, *Bellegarde Peaches*, *Pineapple*, *Nectarines*, *Melon*, and *Jas. Veitch Strawberries*.

Grapes.—The best three bunches of blacks came from Mr. Thompson, gr. to Messrs. W. & E. Wells, Hounslow, and were really fine examples of *Madresfield Court*. Mr. Jas. Taverner (gr. to Sir A. Macdonald, Liphook), was 2nd with *Hamburghs*; and Mr. Bowerman (gr. to C. Hoare, Esq.), Hackwood Park, was 3rd with same variety.

In the class for three whites, Mr. Bowerman was 1st with excellent *Buckland Sweetwater*, finely berried and coloured. Mr. Osman (gr. to J. L. Baker, Esq., Chertsey) was 2nd with fine but unripe *Muscats*; and Mr. Thompson was 3rd.

Mr. Bowerman was again 1st in the single bunch class for whites, with a very fine sample of *Buckland Sweetwater*; and in the class for blacks, Mr. Thompson was a good 1st, with a superb bunch of *Madresfield Court*.

Peaches were good, especially the superb pair of dishes from Mr. Divers, Ketton Hall Gardens, who had beautifully coloured and large fruits of *Royal George* and *Stirling Castle*; Mr. Ocock came 2nd

with the former and *Bellegarde*. Mr. Robins had the best pair of dishes of *Nectarines*, in wonderfully-fine and richly coloured fruits of *Spencer* and *Stanwick Elruge*; Mr. Blair, of *Trentham Gardens*, being 2nd.

There were two classes for *Strawberries*. In the first, for three dishes, distinct, Mr. Gibson, gr. to Burnaby Atkins, Esq., Halstead, was 1st, with fine *Sir J. Paxton*, *Noble*, and *Auguste Nicaise*. Mr. Sage, Ham House Gardens, was 2nd, with very good *Sir C. Napier*, *Dr. Hogg*, and *Premier*.

In the single-dish class, Mr. Divers was placed 1st, with a very large sample of *Lateat of All*; Dr. Hogg and *Jas. Veitch*, both fine samples, followed.

Melons were not largely shown, but a rather small fruit of *Countess*, from Mr. Divers, was a good 1st, as it was delicious. Mr. Coomber, The Hendre, Monmouth, came 2nd, with *Blenheim Orange*; and Mr. Bowerman, 3rd, with *Countess* again.

Mr. Coomber was a good 1st for single *Pine*, a superb *Queen*; and Mr. Slade, The Gardens, Clumber, Notts, was 2nd, with a very fair fruit.

Miscellaneous.—A Silver Medal was awarded to Mr. Allan, gr. to Lord Suffield, Gunton Park, for seven boxes of fine *Strawberries*, including his new varieties, *Empress of India*, *Lord Suffield*, and *Gunton Park*, the latter a huge finely-coloured tallish variety, of capital flavour, which on this occasion received an Award of Merit. A Silver Medal also was awarded to Messrs. Wm. E. Wells, for a basket of very fine *Madresfield Court Grapes*; and a Bronze Medal to Mr. Sharpe, Virginia Water, for some fifty punnets of fine *Strawberry Sir C. Napier*.

There were two sets of three dishes of *Tomatos* shown, the finest being *Perfection*, *Conference*, and *Ham Green Favourite*, from Mr. Sage; and Mr. Poidevia, Guernsey, had *Perfection*, and two coarse-cultured varieties.

A 1st prize was awarded to three monster bunches of *Bananas*, shown by Messrs. Parsons & Bourgaire, Covent Garden, who in the class for collections of British or Channel Islands fruit, to show excellence in packing for transit, were also 1st. They had a Gold Medal awarded. The collection comprised twenty-seven cross-handle baskets of fine *Melons*, *Black Hamburgh*, *Alicante*, and *Muscat of Alexandria Grapes*, *Peaches*, *Figs*, *Tomatos*, &c. Mr. Poidevia was 2nd, with a smaller collection, obtaining a Silver-gilt Medal. Messrs. Parsons & Bourgaire had the best "shallow" of *Grapes*, fine *Muscats* admirably packed with red tissue-paper. A good basket of *Madresfield Court* was placed 3rd only, as the packing was not meritorious. The market classes, which were an after-thought, were indifferently filled, probably because not sufficiently known.

IPSWICH AND EAST OF ENGLAND HORTICULTURAL.

JUNE 29.—The annual summer show of the above was held in Christchurch Park, and the date of the show being somewhat earlier than usual, there was a considerable falling off in the number of entries, although in point of excellence nothing better could be desired.

The exhibits were arranged in two marquees—cut flowers and pot plants in one, fruit and vegetables in the other. A novel form of advertising the event, the decoration of "sandwich-boys" with large *Roses*, which were supplied by Mr. Prince, of Oxford.

There was a fair number of entries in nearly all the sixty-seven classes, only one or two producing no competition. In the sixteen classes of pot plants there was a spirited contest, many magnificent specimens being shown. Here Mr. C. Whitfield King, Morpeth House, Lacey Street, Ipswich, carried off premier honours, winning no fewer than eight prizes. His collection all round was fine. His four *Orchids* which took a prize were *Dendrobium thysiflorum*, *Epidendrum vitellinum majus*, *Cattleya Harrisonæ*, and *Odontoglossum cordatum*. Mr. King's specimen *Orchid* was an *Aërides odoratum*; and his *Orchids* in the group included *Dendrobium thysiflorum*, *D. densiflorum*, *D. chrysotoxum superbum*, and *D. Dalhousianum*; *Lælia purpurata*, *Cattleya labiata* Warneri, *C. Mossiæ*, *Odontoglossum Alexandræ*, *O. maculatum*, *O. pulchellum*, and *O. Pescatorei*; *Oncidium ampliatum majus*, and *Aërides odoratum*.

The competition for the best group of plants arranged for effect was keen, and some excellent collections were shown. The cut flowers were by far the most attractive feature of the show. There was a splendid array of *Roses*, considering the unfavourable weather. In the open classes, Mr. F.

Cant, Colchester, came to the front with some fine specimens; and in the amateur classes, Rev. H. A. Berners was very successful. He won the Silver Medal of the National Rose Society for the best *Tea Rose* with *Cleopatra*; while the Medal offered by the same Society for the best hybrid was taken by Mr. O. G. Orpen with an *A. K. Williams*. There was a large entry in the classes for herbaceous flowers. Mr. Gilbert, Messrs. Paul & Son, and Mr. R. C. Notcutt's collections were remarkable alike for number and variety of colour.

A special prize for the best table decoration was won by the Misses Wrinch and Steines, of Hill Crest, Ipswich, with a pretty exhibit of *Roses* and *Maidenhair Ferns*.

There was a fair show of fruit, including some fine *Grapes*. *Strawberries* formed by far the most numerous exhibit.

The vegetable classes did not seem to be up to their usual standard, either in quality or number. The following was the prize list:—

Pot Plants.—Four foliage plants, Mr. George Gilbert, Floral Nurseries, Ipswich. Group of plants arranged for effect, Mr. C. W. King. Specimen foliage plant (amateurs), Mr. C. W. King. Six single tuberous *Begonias*, Mr. R. C. Notcutt, Broughton Road Nursery, Ipswich. Six double *Begonias*, Rev. H. A. Berners, Harkstead Rectory (gr., G. Jordan). Six *Gloxinias*, Mr. R. C. Notcutt. Four *Coleus*, Mrs. A. F. Nicholson. Six plants for table decoration, Mr. W. Beer, 31, Spring Road, Ipswich. Four *Orchids*, Mr. C. W. King. Specimen *Orchid*, Mr. C. W. King. Pot of *Lilium*, Mr. C. W. King. Hanging basket of plants, Mr. C. W. King. Hanging basket of *Ferns*, Mrs. A. F. Nicholson. Group of plants, arranged for effect (market gardeners and allotment holders only), Mr. W. Beer.

Cut Flowers.—Forty-eight *Roses*, single trusses, distinct (open), Mr. F. Cant, Braiswick Nursery, Colchester; 2nd, Mr. B. R. Cant, Colchester.

Thirty-six ditto (open), Messrs. D. Prior & Sons, Myland Nursery, Colchester; 2nd, Messrs. J. Burrell & Co., Howe Nursery, Cambridge. Twelve *Roses*, distinct, three trusses of each (open), Mr. F. Cant; 2nd, Mr. B. R. Cant. Eighteen *Roses*, *Tra* and *Noisette*, distinct (open), Mr. F. Cant; 2nd, Mr. G. Prince. Thirty-six *Roses*, distinct, single trusses (amateurs), Rev. H. A. Berners; twenty-four *Roses*, single trusses (amateurs), Mr. J. Gurney Fowler, Woodford (gr., J. Davis); 2nd, Mr. O. G. Orpen, West Bergholt. Twelve *Roses*, distinct, single trusses (amateurs), Mr. J. Gurney Fowler; 2nd, Mr. O. G. Orpen. Eighteen *Roses*, *Tra* and *Noisette*, distinct, single trusses (amateurs), Rev. F. Burnside, Birch Vicarage, Hereford; 2nd, Rev. H. A. Berners. Twelve ditto, *Tra* and *Noisette*, distinct, three trusses of each (amateurs), Rev. H. A. Berners; 2nd, Rev. F. R. Burnside. Twelve *Roses* of any variety (amateurs), Rev. A. Foster Melliar; 2nd, Mr. J. Gurney Fowler. Collection of herbaceous flowers in bunches, Mr. George Gilbert; 2nd, Messrs. Paul & Son, the Old Nurseries, Cheshunt. Twenty-four herbaceous flowers, Messrs. J. Burrell & Co.; 2nd, Mr. C. Jacobi, Henley Road, Ipswich. Six herbaceous flowers (amateurs), Mr. O. G. Orpen. Twelve zonal *Geraniums*, Mr. F. Buckingham; 2nd, Mr. R. Austin, sen. Twelve *Roses* (market gardeners and allotment holders), Mr. C. Jacobi. Six zonal *Geraniums* (market gardeners and allotment holders only), Mr. R. Austin, sen.

Fruit.—Collections of fruit (six distinct varieties), Hon. W. Lowther; three bunches of black *Grapes* (open), Hon. W. Lowther; three ditto, white (open), Mr. C. W. King. Six *Peaches* (open), Hon. W. Lowther. Six *Nectarines* (open), Hon. W. Lowther. One *Melon*, Lord Rendlesham; 2nd, Hon. W. Lowther. Dish of black *Cherries* (open), Mr. R. Austin, sen., St. John's, Ipswich; ditto, white (open) no 1st; 2nd, Mr. F. Buckingham. Forty *Strawberries* for flavour (open), Mr. R. Austin, sen. Best collection of *Strawberries*, six varieties (open), Mr. J. Woods, The Nurseries, Woodbridge (gr., W. Morse).

Vegetables.—Collection of vegetables, six distinct varieties, the produce of seed supplied by Messrs. Sutton & Sons, Hon. W. Lowther. Collection of vegetables, six distinct kinds, including two of Messrs. Webb's varieties from seed supplied direct by them in 1892, Hon. W. Lowther. Brace of *Cucumbers* (amateurs), Mr. G. W. Charters. Nine round *Potatos* (open), Hon. W. Lowther. Nine kidney ditto (open), Major Howey. Three *Cauliflowers*, Major Howey.

MARKETS.

COVENT GARDEN, July 7.

MARKET still heavy, with prices falling. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Heliotrope, per doz. 3 0-6 0
Arum, per dozen 6 0-9 0	Hydrangea, per doz. 9 0-18 0
Aspidistras, per doz. 18 0-63 0	Ivy Geraniums, doz. 4 0-6 0
Begonias, per doz. 6 0-12 0	Lilium Harrisii, 12, 18-0 30 0
Calceolarias, per doz. 3 0-6 0	Lobelia, per doz. 3 0-6 0
Coleus, per doz. 4 0-6 0	Marguerites, per doz. 6 0-12 0
Cyperus, per dozen 4 0-10 0	Mignonette, doz. pots 4 0-8 0
Dracenas, each 1 0-5 0	Musk, per doz. 2 0-4 0
Echeveria pyramidalis, per doz. 12 0-24 0	Palms, various, each 2 0-10 0
Ericas, various, doz. 12 0-18 0	— specimens, each 10 6-84 0
Ferns, various, doz. 4 0-9 0	Pelargoniums, p. doz. 8 0-12 0
— per 100 8 0-15 0	— scarlet, p. doz. 2 0-4 0
Ficus elastica, each 1 6-7 0	Roses, Fairy, p. doz. 5 0-8 0
Fuchsia, per doz. 4 0-9 0	Spiraeas, per doz. 6 0-12 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Tasmanian, per case 4 0-8 0	Melons, each 1 0-3 0
Cherries, ½-sieve 3 0-7 6	Peaches, per doz. 3 0-10 0
Grapes, per lb. 1 0-2 6	Pine-apples, St. Michael, each 2 0-6 0
Lemons, per case 12 0-25 0	Strawberries, per lb. 0 3-1 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. 2 0-4 0	Myosotis, or Forget-me-not, 12 bunches 1 6-4 0
Canterbury Bells, doz. bunches 2 0-4 0	Pansies 1 0 2 0
Carnations, 12 blms. 0 9-1 6	Pionies, doz. bun. 9 0-18 0
— 12 bunches 3 0-6 0	Pelargoniums, scarlet, 12 bunches 4 0-6 0
Cornflower, 12 bun. 1 6-3 0	— 12 sprays 0 6-1 0
Eucharis, per dozen 2 6-4 0	Poppies, 12 bunches 2 0-6 0
Gardenias, per dozen 1 6-3 0	Primula, double 4 0-6 0
Heliotrope, 12 sprays 0 5-6 0	Pyrethrum 2 0-4 0
Iris 12 bunches 0 6 12 0	Roses, Tea, per dozen 0 9-2 0
Lilium candidum, 12 blooms 0 6-0 9	— yellow (Maréchal), per doz. 1 0-1 6
— 12 bunches 18 0 24 0	— chals, per doz. 1 0-2 0
— Harrisii, doz. 2 6-4 0	— red, per dozen 1 0-2 0
Maiden Hair Fern, 12 bunches 4 0-6 0	— Moss (French) 12 bunches 6 0-12 0
Marguerites, per doz. bunches 3 0-4 0	— outdoor, 12 bun. 2 0-6 0
Mignonette, 12 bun. 2 0-6 0	Spiraeas, 12 bunches 4 0-6 0
Orchids:—	Stocks, doz. bunches 3 0-6 0
Cattleya, 12 blms. 4 0-8 0	Sweet Peas, doz. bun. 4 0-6 0
Odontoglossum crispum, 12 blms. 1 0-4 0	— Sultan, 12 bun. 2 0-4 0
	Tuberose, 12 blms. 0 4-0 9

ORCHID-BLOOM IN VARIETY.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Lettuces, per doz. 1 6-2 0
Asparagus, per bund. 1 6-8 0	Mushrooms, punnet 2 0-...
Beans, French, lb. 2 6-3 0	Mustard and Cress, punnet 0 4-...
Beet, red, per dozen 2 0-3 0	Parsley per bunch... 0 3-0 6
Carrots, per bunch... 0 4-0 6	Shallots, per lb. 0 6-...
Cauliflowers, each 0 3-0 6	Spinach, per bushel 3 6-...
Cucumbers, each 0 6-0 9	Tomatoes, per lb. 0 9-1 3
Endive, per dozen 2 0-3 0	Turnips, per bunch... 0 4-0 0
Herbs, per bunch 0 9-1 0	

POTATOS.

NEW POTATOS.—Kidneys, 5s. to 6s. 6d.; Rounds, 4s. 6d. to 5s. Market dull.

OLD POTATOS.—Season virtually over. Best samples command 100s. to 120s. per ton. *J. B. Thomas.*

SEEDS.

LONDON: July 6.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that to-day's market presented quite an idle appearance. Actual sowing requirements are just now at a minimum, and no speculation whatever has sprung up. Some American Red Clover seed lying in London has been taken for reshipment to New York. The new French Trifolium comes good and cheap. White Mustard seed hardens in value; choice qualities are now in narrow compass. Rape-seed keeps strong. For Haricot Beans there is a rather better request. Canadian Blue Peas are being bought to be sent back to America. In Canary seed the tendency continues upwards. Hempseed sells slowly. There is no alteration in either Buckwheat, Dari, or Millet.

FRUITS AND VEGETABLES.

SPITALFIELDS, July 5.—Quotations:—Cabbages, 2s. 9d. to 5s. 6d. per tally; Greens, 1s. 6d. to 2s.; Turnips, 2s. 6d. to 3s.; Carrots, 2s. to 2s. 8d.; Spring Onions, 3s. to 4s.; Parsley, 1s. to 2s. per dozen bunches; Cauliflowers, 1s. 6d. to 2s.; Cabbage Lettuce, 4d. to 6d.; frame Cucumbers, 1s. 6d. to 2s. 6d.; natural do., 1s. to 1s. 3d. per doz.; Peas, 3s. to 5s. per bushel; Cos Lettuce, 4d. to 6d. per score; Mustard and Cress, 1s. 6d. to 2s. per dozen bunches; Horseradish, 1s. to 1s. 1d. per bundle; New Zealand Apples, 5s. to 8s. per box; foreign Tomatoes, 1s. to 1s. 6d. per box; Gooseberries, 2s. 6d. to 3s. 3d.; Black Currants, 8s. 6d. to 10s. per half-sieve; Strawberries, 2s. to 4s. per peck.

BOROUGH: July 5.—Quotations:—Cauliflowers, 2s. 6d. to 4s. per dozen; Cabbages, 4s. to 5s. per tally; Peas, 2s. 6d. to 3s. per bushel; Spinach, 1s. 3d. to 2s. 6d. per bushel; Greens, 2s.; new Carrots, 3s. 6d. to 4s.; Spring Onions, 4s. to 6s. per dozen bunches; Egyptian do., 4s. to 5s. per cwt.; English Apples, 5s. to 10s. per bushel; Canadian do., 12s. to 20s. per barrel.

STRATFORD, July 5.—There has been a good supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned quotations:—Cabbages, 2s. 6d. to 6s. per tally; Greens, 1s. 6d. to 2s. per bag; Turnips, 2s. to 3s. per dozen bunches; Carrots, household, 1s. to 3s. do.; Mangolds, 16s. to 22s. per ton; Green Peas, 5s. 6d. to 7s. 6d. per bag; Onions, Egyptian, 80s. to 100s. per ton; Apples, Tasmanian, 6s. to 7s. 6d. per case; Cucumbers, 2s. to 4s. per dozen; do., Dutch field, 1s. 6d. to 2s. 3d.

do.; Strawberries, 2s. 3d. to 3s. 2d. per peck; Gooseberries, 2s. to 3s. per half-sieve; do., 4s. to 5s. per flat; Tomatoes, 10s. to 12s. per case.

FARRINGTON: July 7.—Quotations:—Peas, 5s. to 6s. per bag; Cherries, 4s. to 6s. per half-sieve; Currants, 6s. to 7s. do.; Gooseberries, 5s. to 6s. per half-bushel; yellow do. (ripe), 2s. 9d. to 3s. 3d. per half-sieve; Flemish Cherries, 4s. 6d. per half-sieve; Strawberries, 2s. 9d. per peck; foreign Tomatoes, 9d. per box of 18 lb.; Cabbages, 4s. to 6s. per tally; spring Onions, 4s. to 5s. per dozen bunches; Cos Lettuce, 8d. to 1s. per score; Egyptian Onions, 90s. to 100s. per ton.

POTATOS.

SPITALFIELDS: July 5.—Quotations:—New: Jersey Kidneys, 6s. to 6s. 6d.; do. Flukes, 6s. 6d. to 7s.; Cherbourg Rounds, 5s. 9d. to 6s.; do. Kidneys, 6s. to 6s. 9d.; do. Flukes, 6s. 6d. to 7s.; St. Malo Rounds, 5s. 6d. to 5s. 9d.; do. Kidneys, 6s. to 6s. 6d.; Lisbon Rounds, 6s. to 6s. 6d. per cwt. Old:—Magnums, 55s. to 75s. per ton.

BOROUGH, July 5.—Quotations:—New: St. Malos, 4s. 9d. to 5s.; Jerseys, 6s.; Cherbourg, 5s. to 6s. per cwt. Old: Bruce Magnums, 90s. to 100s.; Fenland, 75s. to 80s. per ton.

STRATFORD: July 5.—Quotations:—Old: Magnums, 80s. to 100s. per ton. New: Jersey Flukes, 6s. to 7s.; do. Kidneys, 6s. to 6s. 8d.; St. Malo Flukes, 6s. to 6s. 6d.; Rounds, 5s. to 5s. 6d.; Cherbourg, Kidneys, 5s. to 5s. 6d.; Flukes, 6s. to 6s. 6d. per cwt.

FARRINGTON: July 7.—Quotations: New:—Jersey Flukes, £6 to £6 10s.; do., Kidneys, £5 10s. to £6; do., Rounds, 90s. to 100s. per ton.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.	BRIGHT SUN.			
	ACCUMULATED.								
	Above (+) or below (−) the Mean for the week ending July 2.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.			Below 42° difference from Mean since Jan. 3, 1892.	More (+) or less (−) than Mean for the Week.	
	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.					
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.				
0 2 —	72	0	0	aver + 212	2 +	122	20.4	32	30
1 1 —	92	0	—	74 + 241	3 —	97	11.8	40	34
2 1 +	116	0	0	aver + 186	5 +	98	11.6	28	33
3 1 +	130	0	—	11 + 210	4 +	91	10.0	48	38
4 0	aver 121	0	—	32 + 246	3 +	82	9.7	39	37
5 1 +	130	0	—	32 + 138	2 —	69	7.4	56	42
6 2 —	90	0	—	33 + 193	2 +	96	18.1	34	35
7 0	aver 108	0	—	13 + 165	6 +	96	14.7	30	37
8 0	aver 116	0	0	aver + 117	3 —	84	10.9	33	42
9 0	aver 104	0	—	32 + 122	3 +	102	15.8	36	33
10 0	aver 113	0	—	16 + 132	4 +	91	15.5	34	37
* 2 +	136	0	+	28 + 42	4 —	89	12.0	62	47

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—0, Scotland, N.; 1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.

Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 2, is furnished from the Meteorological Office:—

"The weather during this week was very changeable. At first it was fair except in the extreme west and north, but late on Tuesday a severe thunderstorm was experienced in many parts of England, and the rainfall accompanying it was very heavy in the north-east and north-west. Fair conditions subsequently prevailed over the greater part of England, but in Ireland and Scotland, the weather became unsettled, and rainy, especially on Saturday.

"The temperature did not differ materially from the mean over England and Ireland, but was a little below it in Scotland. The highest of the maxima were recorded on the 27th, and ranged from 83° in 'England, S.' and the 'Channel Islands,' and from 81° in 'England, E.' to 70° in 'Scotland, E.' and 67° in 'Scotland, N. and W.' The lowest of the

minima, which occurred on the 29th at the Scotch stations, and on the following day elsewhere, varied from 36° in 'Scotland, N.,' 37° in 'Scotland, E.' and the 'Midland Counties,' and 38° in 'England, E. and S.W.,' to 45° in 'England, N.E.,' and 51° in the 'Channel Islands.' After the thunderstorm on Tuesday evening the fall of temperature over England was very rapid.

"The rainfall differed very considerably in the various parts of the Kingdom. In most of the English districts, in 'Scotland, N. and W.,' and over 'Ireland' it exceeded the mean, but in 'England, S. and S.W.,' the 'Channel Islands,' and 'Scotland, E.,' it was less than the normal. At some of the northern English stations the amounts measured on the morning of the 29th ranged from 1.5 inches to 2.0 inches.

"The bright sunshine exceeded the normal in most places, but showed a deficit in the north-western and south-western districts. The percentage of the possible duration ranged from 30 in 'England, N.W.,' and 32 in 'Scotland, N.,' to 48 in 'England, E.,' 56 in 'England, S.,' and to 62 in the 'Channel Islands.'"

NOTICES TO CORRESPONDENTS.

* PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We have been pleased to receive from our correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

BLIGHT ON ROSE: *J. N. L.* The Orange Rust, *Coleosporium pingue*, figured in the *Gardeners' Chronicle*, July 17, 1886.

BOOK: *J. S.* *How Crops Grow*, McMillan.

CARNATION: *X. Y. Z.* The Carnation Rust, often figured and described in these columns. Burn the affected plants.

DISEASED GRAPES: *K. J.* The berries are affected with the so-called spot, which is caused by a fungus, *Glaesporium laticolor* (see *Gardeners' Chronicle* for December 6, 1890, for figures and description). The application of some of the recommended fungicides at an early date after the berries are formed would probably arrest its spreading; but once it has made its appearance, there remains nothing but the removal of the spotted berries, which should be burnt at once.

GARDENERS' BOOKS: *T. Simpson.* *Handy Book of the Flower Garden*, D. Thomson, 4th edition (Blackwood & Son); *Choice Stove and Greenhouse Plants*, 3rd edition (B. S. Williams); *Select Ferns and Lycopods*, 2nd edition (B. S. Williams); *Domestic Floriculture*, 2nd edition (by F. W. Burbidge); *Manual of Conifers* (J. H. Veitch, Royal Exotic Nursery, Chelsea); *Artificial Manures* (M. Ville), translated by Crookes, Longman & Co.; *Dictionary of Gardening* (Nicholson), Upcott Gill, 70, Strand, London; *Vines and Vine Culture* (A. F. Barron, Chiswick); *British Flora* (Bentham & Hooker); *Manual of Orchidaceous Plants* (H. J. Veitch, Exotic Nursery); *The Forester* (Jas. Brown), Blackwood & Sons; *Thompson's Gardeners' Assistant* (Blackie & Sons); *Apple Conference Report*, Royal Horticultural Society, Chiswick; *Manual of Injurious Insects and Methods of Prevention* (E. A. Ormerod), 2nd edition, Simpkin, Marshall, Hamilton, Kent, & Co., London; *The Vegetable Garden* (Vilmorin), English edition, John Murray, Albemarle Street, London.

GARDEN LABOUR: *D. D.* The staff seems to be much under the requirements of the place; it just sufficing for the efficient cultivation of the 3½ acres of walled-in kitchen garden.

HORTICULTURAL AND OTHER JOURNALS: *H. A.* *Illustrierte Wiener Gartenflora*. Editor, Ritter Beck von Managhetta. Published in Vienna. In St. Petersburg the following are published:—*The Weekly Messenger for Gardening, Fruit and Vegetable Culture*: Organ of the Russian Horticultural Society. Subscription, post-free, 30s. *Journal of Agriculture and Forestry* (monthly). Subscription, post-free, 16s. It is one of the publications of the Russian Board of Agriculture.

INSECTS ON ABIES NORDMANNIANA: *Jas. H. W. F.* Your young shoots of *Picea Nordmanniana*, sent on June 13, are infested by a minute aphid (all dead and shrivelled up). The plants should have been syringed with gas tar water, and soap-suds—if not too late it would be well to cut off and burn the infested twigs. *I. O. W.*

INSECTS: *I. J. F.* The small aphid covered with white powder on your *Picea Nordmanniana* may be syringed with gas-tar water and soft-soap suds, or with other fluid as directed in our recent article on syringing, its material, and mode of application. Quassia and tobacco-water, are also beneficial. It is curious that the insect does not touch *A. nobilis*, *A. grandis*, or *A. lasiocarpa*. *I. O. W.*

MALFORMED ASPARAGUS: *W. O.* This fasciation of the stem is a very common occurrence in highly manured beds, but in your case the stem has been bent by its coming in contact with an underground obstruction, or from an injury to the skin on one side, which did not grow so fast afterwards—and therefore it had pulled as it were the stem on that side, and caused the curve noticed.

NAMES OF PLANTS: *Vagabond.* Orchis conopsea, paler, sweet-scented flowers; Orchis pyramidalis, with darker scentless flowers, arranged in a conical spike; Lotus corniculatus, depauperate variety.—*T. M., Plympton.* Melilotus officinalis.—*J. G.* The one-leaved variety of the common Ash, Fraxinus europæa var. monophylla.—*H. E. 1.* Dianthus caryophyllus; 2, Veronica prostrata.—*Byfield.* 1, Veronica chamaedrys.—*R. Smith.* Gladiolus Byzantinus; a poor specimen.—*A. A.* Saccolabium guttatum.—*F. A. G. 1.* Agrostemma coronaria; 2, Pellionia pulcher.—*F. Miller & Co.* Iris ochroleuca.—*T. C.* Ligustrum; cannot name from such imperfect material. Send good fresh material in damp moss (in flower).

NEW EUPHRAIS: *G. C.* Some of the nurserymen would probably be glad to give you a good price for it.

NOTICE TO QUIT: *Birmingham.* In the absence of any agreement, the tenancy is regarded as annual, and can only be terminated by the tenant giving a six-months' notice to the landlord, expiring on the same day the tenancy commenced.

PHYLOXERA: *Exeter.* Yes, certainly; lose no time in extirpating the Vines, remove all the soil, burn it with sulphur, and burn sulphur in the house.

POTATO INSECT: *T. M.* An aphid, not the Colorado beetle.

PROLIFEROUS ROSE: *R. W. A. W.* Not uncommon in some seasons. The growth after the formation of the flower, &c., should be arrested; but for some reason we cannot tell in your case, it has started again.

PYRETHRUM: *Mrs. C.* A "hen and chicken" sport, not very unusual to those who look out for such sports. Possibly it might come again from seed, if you think it worth while to try.

ROSE PERFUME: *Joseph Ellison.* The following method is that practised by the London perfumers when preserving the Mitcham-grown Roses for future use. According to Mr. Piesse in his book *The Art of Perfumery*, the leaves are separated from the stalks, and to every bushel of flowers, equal to about 6 lb. weight, 1 lb. of common salt is thoroughly rubbed in. The salt absorbs the water existing in the petals, and rapidly becomes brine, reducing the whole to a pasty mass, which is finally stowed away in casks. In this way they will keep almost any length of time without the fragrance being seriously injured. We should think this would be the best course you could pursue.

STRAWBERRY RUNNERS: *British Queen.* The first and second runners are, of course, the best, and the weaker ones may, or may not, be blind; at any rate, blindness is to be feared, and such runners should not be employed for forced Strawberries, or for planting beds that are required to bear fruit within the first year after planting.

VINES IN SPANISH HONDURAS: *Henry the Norman* is not likely to do any good with the Vine; but, tropical products such as Caoutchouc, Vanilla, Cocoa, Cocoa-nuts, Coffee, Pine-apples, &c., might be tried. Without knowing the local circumstances and requirements, the available markets, &c., no information we can give would be of much avail.

VINES WITH WARTY LEAVES: *An Amateur, Erdington.* We should like to see some more leaves, and a handful of the roots from the worst-looking Vine, before answering your inquiries.

COMMUNICATIONS RECEIVED.—*H. E. Milner.*—*H. B. S.*—*S. G. F.*—*A. D. R. P.*—*E. J. L.*—*H. W. W.*—*H. G.*—*H. E. M.*—*T. H. Evershed.*—*Dr. F. K.*—*C. D. O.* (with thanks).—*Sir A. M.*—*C. B. L. S.*—*Prof. G.*—*Jacob.*—*T. E. H.*—*F. V. D.*—*G. H.*—*Sir G. B.*—*F.*—*H. Ellis.*—*G. F.*—*P. W.*—*John Hopper & T. B.* next week.

SPECIMENS RECEIVED.—*De Kweekerij, Tottenham (Lilies).*—*Sir A. M.*

PHOTOGRAPHS RECEIVED.—Horse Chestnut, from *A. E. M. E.* Onslow.

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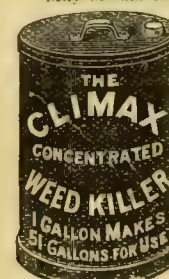
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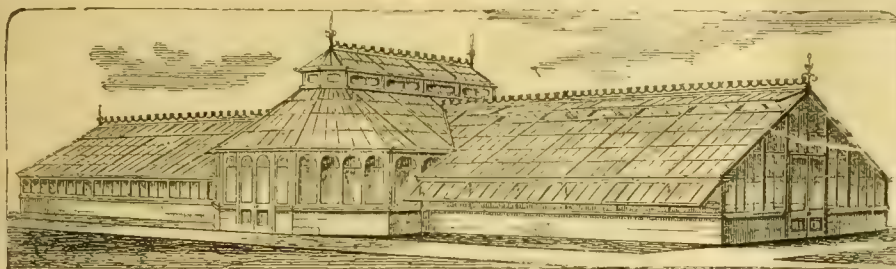
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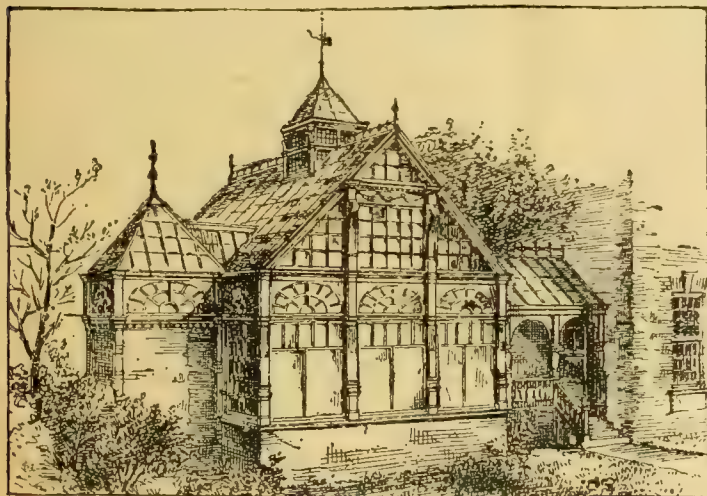
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Wife good dairy woman, and to take charge of house during
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Nursery containing about 10,000 square feet of Glass,
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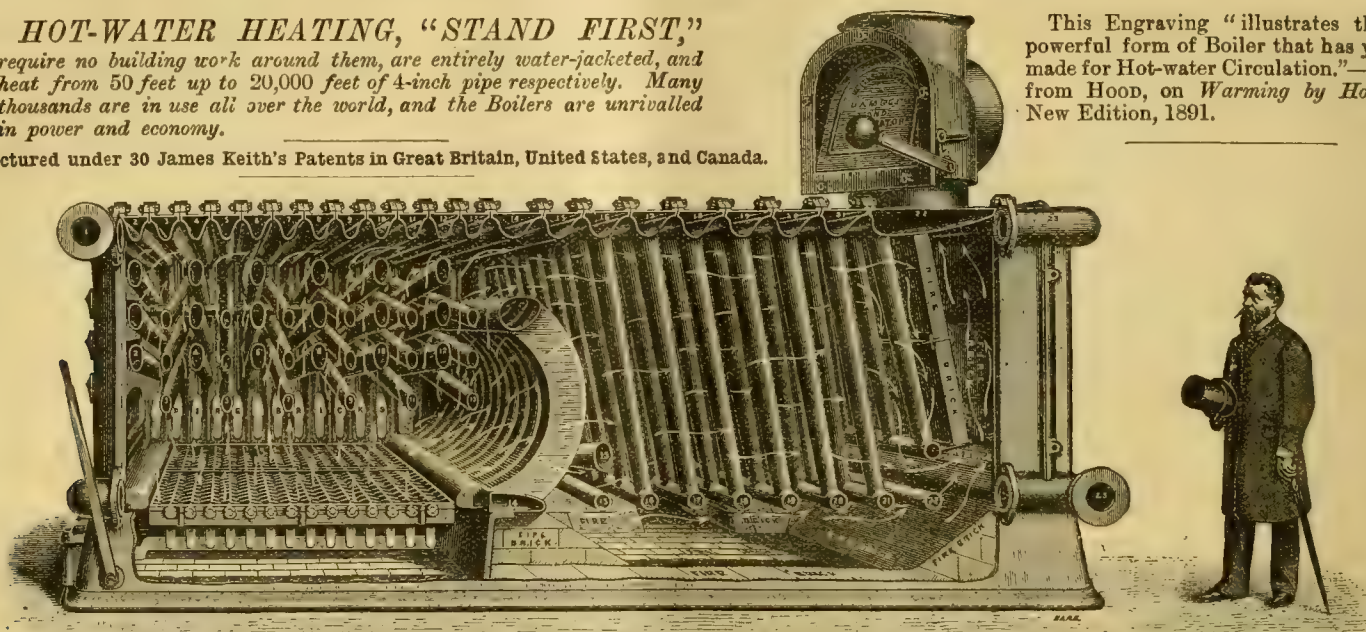
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The Best Cabbage for Present Sowing. SUTTON'S FLOWER OF SPRING. — Remarkably early, compact habit, having few outer leaves, firm hearts of excellent quality. One of the very best for spring use. ALFRED OATES, Esq., 128, N. Marine Road, Scarborough, says,—"Your Flower of Spring Cabbages have been by far the best and earliest seen in this neighbourhood." Price of seed, 1s. per ounce, post-free.

SUTTON'S SEEDS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

HUMEA ELEGANS. Good plants can now be supplied by B. S. WILLIAMS AND SON, Victoria and Paradise Nurseries, Upper Holloway, London, N.

AGAVE AMERICANA VARIEGATA.—Large Specimen to be disposed of, in perfect health and shape. COATES, Friars Street, Sudbury, Suffolk.

JOHN COLLINGRIDGE is open to receive Consignments of Choice CUT FLOWERS for SALE, on COMMISSION. Highest references. New Flower Market, and 5, Russell Court, Strand, W.C.

CHOICE FRUIT!—CHOICE FRUIT! Highest market prices guaranteed. Prompt cash. HENRY RIDES, Centre Avenue, Covent Garden, W.C.

W. D. BUNDAY, of Covent Garden Market, and 37, Exeter Street, W.C., is open to SELL on COMMISSION, TOMATOS, GRAPES, &c. Good references.

MESSRS. SQUELCH AND WOOD, FRUIT SALESMEN, North Row, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS OF GRAPES, TOMATOS, CUCUMBERS, and all kinds of HOT-HOUSE PRODUCE. Our business connections being amongst the best houses in London, we are in a position to secure the highest prices for all choice goods. Account Sales forwarded daily and cheques weekly, or daily if required. Empties and labels supplied. Reference, London and County Bank, Covent Garden Branch.

The Best Present for a Gardener. VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published. Third Edition, just out. Price 5s., post-free, 5s. 6d. A. F. BARRON, Royal Horticultural Society, Chiswick.

Offered by a Wholesale Grower, 1,500,000 LILY CROWNS, true Berlin variety, from Sandy soil. Selected 3-yr.-old Crowns, large-flowered, for Early Forcing. 21s. per 1000. Free on board Hamburg, in baskets of 5000 each. Address—Z. 30, Postamt 39, Berlin, Germany.

SCARLET VAN THOL TULIPS, 2s. 6d. per 100; 23s. per 1000. EARLY WHITE ROMAN HYACINTHS, average bulbs, 1s. 4d. per dozen; 10s. per 100. The pick of the market, nearly 6 inches round, 2s. per dozen; 15s. per 100. NARCISSUS ORNATUS, 9d. per dozen; 5s. 6d. per 100. GOLDEN SPUR, the finest yellow for forcing, 3s. 6d. per dozen; 25s. per 100; FREESIA REFRACATA ALBA, 1s. per dozen; 5s. 6d. per 100; extra fine, 1s. 3d. per dozen; 9s. per 100. ROBERT SYDENHAM, Roseleigh, Birmingham.

Many Acres of Lilies of the Valley! T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year-old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

WANTED, strong CUTTINGS of LA FRANCE, GLOIRE DE DIJON, and MARÉCHAL NIEL ROSES.—T. W. WELLINGTON, Milton Nurseries, Milton, Lymington, Hants.

WANTED, 100 to 1000 PIPINGS of HER MAJESTY PINKS. For cash, or in EXCHANGE for plants of MRS. SINKINS. Apply to PETER SHERVIN, 122, Elswick Road, Newcastle-on-Tyne.

CARTERS'—THE BEST SEEDS. CARTERS' VICTORIA PRIZE CALCEOLARIA. CARTERS' BRILLIANT PRIZE CINERARIA. The finest strains in cultivation. Far in advance of all others. Price of seed in sealed packets, 2s. 6d. and 3s. 6d. per packet, post-free.

THE QUEEN'S SEEDSMEN, 237 and 238, HIGH HOLBORN, LONDON, W.C.

BRUSSELS SPROUTS (Sutton's).—10,000 strong Plants.—1s. per 100; 4s. per 1000. Dr. WOLFENDEN, Pangbourne.

40 LARGE BARRELS of PANCRATIUMS, as received, to be sold at a very low price. Apply to J. C. STEVENS, 38, King St., Covent Garden, W.C.

DAFFODILS FOR POTTING.—HARTLAND'S THIRTY-SIX VARIETIES for FORCING PURPOSES. A Card, giving names and prices per 100, post-free to all applicants. The Bulbs are now ready, and simply magnificent. WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

1,000,000 LILIES OF THE VALLEY. The best Berlin Crowns ever offered for Early Forcing. Any quantity will be delivered on Nov. 1, of unsurpassed quality. Price upon application. 5000 FICUS ELASTICA, well-grown plants, with seven to ten good leaves, delivered free, on or before September 15, at 45 per 100. R. GULZOW AND CO., Melbourne Nurseries, Bexley Heath, Kent.

Seeds for Present Sowing. DICKSON AND ROBINSON'S Superb Strains of the following are unsurpassed:—CALCEOLARIA, CINERARIA, GLOXINIA, and PRIMULA, Red, White, and Mixed Colours, each 1s. 6d. and 2s. 6d. per packet, post-free. EXHIBITION DWARF EVERGREEN LAWN GRASS, per lb. 1s., post-free, 1s. 3d.; per cwt., 100s., carriage paid. Descriptive Priced CATALOGUE, post-free, on application. Seed Warehouse, 12, Old Millgate, Manchester.

BARR'S SEEDS, BULBS AND PLANTS. VEGETABLE SEEDS.—The best sorts only. Much valuable information. CATALOGUE FREE ON APPLICATION. FLOWER SEEDS.—Upwards of 2000 species and varieties, all decorative kinds. CATALOGUE FREE ON APPLICATION. BULBS.—Gladioli, Lilies, Anemones, Ranunculus, Hyacinthus candicans, Tigridia, &c., for Spring Planting. LISTS ON APPLICATION. PLANTS.—Michaelmas Daisies, Perennial Sunflowers, Double and Single Paeonies, Irises, Oriental Hellebores, Carnations, &c. LISTS FREE ON APPLICATION. BARR AND SON, 12, King Street, Covent Garden, London.

NICOTINE SOAP.—An effectual and speedy Eradicator of Scale, Thrips, Green Fly, Mealy Bug, Red Spider, American Blight, and all Parasites affecting Plants, without injury to Foliage. Price 1s. 6d., 3s., and 5s. 6d.; 14lb., 15s. 6d.; 28lb., 15s.—CORY AND CO., Limited, 13, 15, and 16, Finsbury Street. To be obtained through all Seedsmen and Florists.

Boulton & Paul's Outdoor Requisites. BOULTON AND PAUL, MANUFACTURERS, NORWICH. Every Requisite for the Kennel and Poultry Yard, Aviaries, Pigeon Cotes, Pheasantries. Requisites for the Garden, Park, Pleasure Grounds. Wire Netting for Game and Sheep. Iron and Wire Fencing, Gates, &c. Send for Illustrated CATALOGUES, post-free, on application.

J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent: Mr. GEORGE, 10, Victoria Road, Putney. WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Friday Next.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. SANDER to **SELL BY AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT**, July 22, at half-past 12 o'clock, a fine lot of the new and exquisite

CATTLEYA VICTORIA REGINA.

Also a fine lot of

CATTLEYA ALEXANDRÆ.

A new and most distinct **CYRTOPODIUM**,
CYRTOPODIUM SUAVISSIMUM.

The New White Sobralia,

SOBRALIA IMPERATRIX,

A grand Lot of **DENDROBIUM NOBILE**, the Upper Burmah variety.

CYPRIPEDIUM HIMALAICUM.

A New and striking EPIDENDRUM.

PHAIUS TUBERCULOSUS and PHAIUS HUMBLOTTII; a small but good importation of these lovely plants.

CYPRIPEDIUM NIVEUM, a very fine lot, just to hand.

And many other choice and useful ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday Next.—Zamias.—Important Consignment.

MESSRS. PROTHEROE AND MORRIS desire to announce that they have received a consignment of 31 trunks of **MACROZAMIA SPIRALIS**, several being 6 feet in circumference, 121 **MACROZAMIA CARALLIPES**, 11 **XANTHAREA HASTILIS**, and 1570 seeds of **MACROZAMIA SPIRALIS**. The importation is the grandest ever received (the whole being in splendid condition), and will be **SOLD ON FRIDAY NEXT**, July 22.

Auction Rooms and Estate Offices, 67 and 68, Cheapside, E.C.

Lower Norwood.

IMPORTANT UNRESERVED SALE of the well-known and valuable collection of **EXHIBITION STOVE** and **GREENHOUSE PLANTS**, which have been so successfully shown for many years at the leading London and provincial shows by order of Mr. HENRY JAMES, who is giving up exhibiting.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, The Castle Nursery, Lower Norwood, on **THURSDAY NEXT**, July 21, at 12 o'clock, the valuable collection of **EXHIBITION STOVE** and **GREENHOUSE PLANTS**, comprising well-grown specimen **Kentias** and other Palms, **Stephanotis**, a fine lot of **Agapanthus albus**, coming into flower; splendid specimen **Heaths**, 6 to 8 feet through; **Allamandas Hendersonii**, **Cathartica**, grandiflora, and nobilis; **Ixoras**, Ferns, 50 magnificent specimen **Azaleas**, probably the best collection in the country; fine examples of **Crotons**, **Anthuriums** (a specialty at this nursery), **Chrysanthemums**, and other plants.

May be viewed three days prior to the Sale.

Catalogues may be had of Mr. H. JAMES on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Streatham Hill.

A few minutes' walk from the Tulse Hill Railway Station.

UNRESERVED SALE.

By order of the Owner, who is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION** on the premises, Hughenden, 19, Palace Road, Streatham Hill, S.W., on Tuesday, July 26, at one o'clock precisely, the whole of the **STOVE** and **GREENHOUSE PLANTS**, **CAMELLIAS**, and **AZALEAS**, **ASPIDISTRAS**, **PALMS** and **FERNS**, a few **ORCHIDS**, **CHRYSANTHEMUMS**; the erection of Three Greenhouses, Pits, Hot-water Piping, Boiler, Lawn Mower, Garden Tools, Pots, Ladders, Light Spring Bath Chair, and other effects.

On view day prior and morning of Sale. Catalogues may be obtained on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Stamford Hill. Without Reserve.

ABSOLUTE CLEARANCE SALE. By order of the Proprietor, who is going abroad, and relinquishing the Business.

IMPORTANT TO PALM GROWERS, DECORATIVE FLORISTS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION** on the Premises, The Palm Nursery, 106, Stamford Hill, N., a few yards from the Stoke Newington Station, G. E. R., on **WEDNESDAY** and **THURSDAY**, July 27 and 28, at 12 o'clock precisely each day, without reserve, by order of Mr. W. Owen, the whole of the **STOCK-IN-TRADE**, comprising thousands of well-grown Palms in various sizes, particularly worthy of the attention of the Furnishing Trade and Private Buyers, including 100 Specimen **Latania borbonica**, 500 fine plants of **Chamaerops excelsa**, 2½ feet to 5 feet; 100 **Cocos plumosa**, good plants; large quantities of **Seafortia elegans**, **Areca sapida**, A. Baueri, **Corypha australis**, **Phoenix reclinata** and **tenuis**, **Kentia Belmoreana** and **Fosteriana**, 1000 **Dracaena congesta discolor**, and **rubra**, in 48-pots; 200 **D. indivisa**, small plants; **Aspidistra lurida variegata**. The Erections of 6 Greenhouses, about 3600 feet of Hot-water Piping, mostly 4-inch; capital Steam Boiler, also 2 other Boilers, Flower-pots, Office, and other Effects.

May be viewed two days prior to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

N.B.—The Vendor has made arrangements for a large Marquee to be erected at the Nursery into which plants will be removed. The Sale will take place in this Marquee, which will afford ample accommodation for intending purchasers to view the plants, and avoid walking through the Greenhouses.

Arlesley, Bedfordshire.

On the main line of the Great Northern Railway, midway between Sheffield and Baldock, and close to the ARLESEY Station, THE "WATERLOO" FARM, a Freehold and Tithe-free Estate of valuable Garden Land, containing 330a. 0r. 0p., and having an extensive frontage to the road from Arlesley Station to Stotfold, let to Mr. Daniel at an annual rental of £875, to be **SOLD BY AUCTION**, at the "Sun Hotel," Hitchin, on **TUESDAY**, July 26, 1892, at 4.30 o'clock precisely, by

MR. J. R. EVE and Mr. GEORGE JACKSON, (who are jointly concerned).

The "WATERLOO" FARMHOUSE and HOMESTEAD and 250a. 0r. 0p. of GRASS and ARABLE LAND will be offered in One Lot, and the remainder in Eight Lots, to suit the convenience of purchasers.

Also, the "OLD OAK" PUBLICHOUSE, Garden and Paddock, within 200 yards of the Arlesley Station, and a Plot of BUILDING LAND adjoining, both now let to Mr. Page, of Ashwell Brewery, at the rental of £50 per annum.

The tenancies of the whole of the Estate will terminate at Michaelmas next.

Particulars and Plans can be obtained of Messrs. PRESS AND INSKIP, Solicitors, Bristol; of Mr. J. R. EVE, Bedford, Hitchin, and Luton; and of Mr. GEORGE JACKSON, Hitchin, Baldock, and Royston, Herts.

WANTED TO RENT, a PIECE OF GROUND with some GLASS, for Market Purposes. Apply, MATTHEWS, The Lodge, Aberdeen Park, N.

FLORIST and NURSERY BUSINESS for DISPOSAL.—For further particulars, apply to—Mr. G. PAYNE, Florist, Highgate Hill, Holloway, London, N.

FOR SALE, a FREEHOLD MARKET GARDEN PROPERTY, with Greenhouses and Dwelling-house. Private treaty; going concern. Well situated for business; adjoining thriving town. Small capital. Apply to—WILLIAMS and NICHOLSON, Salop House, Oswestry.

To Nurserymen, Florists, &c.

SUBSTANTIAL NURSERY PREMISES, constructed at great cost (Leasehold—over 60 years to run), to be **DISPOSED OF**, by Executors, at a small nominal premium. The premises are in working order, and comprise Greenhouses, Dwelling-house, Gardener's Cottage, Stabling, &c.; about 6 miles from Covent Garden, London.

Particulars will be furnished upon application to A. Z., 2, Wisteria Road, Lewisham, S.E.

SEED BUSINESS, for Disposal.—Well situated, and near station in a city in the north of England. Terms moderate.—Apply, B. J. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

TO NURSERYMEN and FLORISTS.—To be LET, at Edmonton, an ACRE of LAND, suitable for Nursery Purposes, adjoining Land Let to Florists. Rent moderate.—Particulars of Mr. ALFRED RICHARDS, Auctioneer, Lower Tottenham.

VERY CHOICE LILIUM HARRISII, 7 to 9 inches round, 6s. per doz.; 9 to 11 inches round, 10s. per doz. **Chionodoxa luciliae**, 3s. per 100; extra fine, 4s. 6d. per 100. **Elwes' Giant Snowdrop**, 4s. per 100; 35s. per 1000. Full List on application. ROBERT SYDENHAM, Roseleigh Birmingham.

STRAWBERRIES.

No place in the world equals Swanley or Eynsford, either for Fruit or Plants. Our 6 acres in 60 best kinds are now full of lovely Runners and Plants for immediate dispatch. Send for a CATALOGUE, giving the secrets how to have the finest possible crops at once.

Special Prices for large quantities.

Col. BROCKMAN, Dodsley, Midhurst, July 5.
"The Strawberryers supplied by you last year are giving splendid results. Col. B. will write again shortly for more plants."

H. CANNELL & SONS, SWANLEY.

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THE LIVERPOOL HORTICULTURAL CO.

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HAVE AN

IMMENSE STOCK of ORCHIDS,

All in the finest health and condition,
And they are constantly receiving importations from various parts of the world.

The Company earnestly request the inspection of their Stock by intending Purchasers.

New, Descriptive, and Priced CATALOGUES post-free on application to the Company.

THE VINEYARD AND NURSERIES,
CARSTON, NEAR LIVERPOOL.

EXHIBITIONS.

TRENTHAM AND HANDFORD HORTICULTURAL SOCIETY will hold their **FIFTH ANNUAL SHOW** in Trentham Gardens, JULY 21, 1892. PRIZES to the amount of £350 will be given. **GROUP OF PLANTS**, 1st, £25; 2nd, £16; 3rd, £12; 4th, £9. 48 ROSES, 1st, £5, and Special Value, £5 10s.; 2nd, £5; 3rd, £3. 36 ROSES, 1st, £5, and National Rose Society's Gold Medal; 2nd, £3; 3rd, £2. **COLLECTION OF FRUIT** (9 Dishes), 1st, £10; 2nd, £6; 3rd, £3. 4 BUNCHES OF GRAPES, 1st, £5; 2nd, £3; 3rd, £2. Schedules on application to—

JOHN TAYLOR, Hon. Sec., Trentham.

SALTERHEBBLE and DISTRICT (HALIFAX) ROSE SHOW.—THURSDAY, July 28. Schedules may be obtained from the Secretary—

JNO. E. BROOKS, 4, Savile Park Street, Halifax.

HESSLE and HOWDENSHIRE HORTICULTURAL SOCIETY.

The **GRAND SUMMER SHOW** will be held in the Grounds of **TRANEY LODGE, HESSLE**, near HULL, on **WEDNESDAY** and **THURSDAY**, JULY 27 and 28.

Valuable Money Prizes, besides Silver Cups and Medals.

Open-Air Space to Let for Horticultural Sundries.

Schedules may be had from—

ERNEST M. CLARKE

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Hon. Secs.

THE ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON.

GREAT SUMMER SHOW.

SATURDAY and MONDAY, July 30 and August 1.

Valuable PRIZES for PLANTS, FLOWERS, FRUIT, and VEGETABLES. Entries close July 25.

27, New Alma Road.

C. S. FUIDGE, Secretary.

NORTHAMPTONSHIRE HORTICULTURAL SOCIETY'S GREAT SUMMER SHOW, Delapre Park, Northampton, August 1st and 2nd (Bank Holiday and following day). £250 IN PRIZES.

For best twelve plants, £15, £10, £5, £2 10s. Central Group for Conservatory Decoration, £3, £2, £1. Twenty-four Roses, £2, £1 10s., £1. Collection of Vegetables, twelve varieties, selected, £3, £2, £1. Entries close July 22. Schedules and full particulars from

W. B. TROUP, Secretary, Northampton.

PICTURESQUE ROCK SCENERY.—Forming Waterfalls, Lakes, and Streams, Ferneries, Winter Gardens, Alpineries, &c., as in hundreds of places about the kingdom, including at Aldenham House, Elstree, so faithfully illustrated in this journal of November 21, executed by PULHAM and SON, 50, Finsbury Square, London, E.C., and Broxbourne, Herts. Photo Illustrated Book sent for inspection on receipt of twelve stamps.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—

Messrs. R. SILBERRAD and SON, 25, Savage Gardens, Crutched Friars, E.C.

N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

FERNS! FERNS!!—Trade.—Greenhouse and

Store, 25 saleable sorts, 12s. per 100; out of pots, 10s. Strong Seedling Ferns, stores, in variety, 6s. per 100, 50s. per 1000. Large Adiantum cuneatum, Aralias, Cyperus, all in 48s, 6s. per dozen. Palms, Ficus, Hydrangeas, 1s. each. Large Ferns, 10 best sorts, 8s. 6d. per dozen, in 48s. Adiantum cuneatum and P. tremula, extra size, in 2½-inch pots, 16s. and 2 s. per 100. Packed free, Cash with Order. J. SMITH, London Fern Nurseries, Loughboro' Junction, S.W.

FERNS A SPECIALITY.

A magnificent stock of Stove, Greenhouse, and Hardy Ferns, in 1400 species and varieties. CATALOGUE free on application. The most beautiful and complete

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FERN NURSERIES, SALE near MANCHESTER.

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Always worth a visit of inspection. Kindly send for Catalogue.

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to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

150,000.—Special Offer of Kentias.
W. ICETON has a large quantity of the above to offer, very reasonable, at from £7 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well established, at £30 per 1000.

W. ICETON, Putney, S.W.

FOR SUCCESS ON EXHIBITION TABLES,
send to Mr. Robt. Sydenham, Roseleigh, Birmingham, for really good Bulbs and Seeds. No nurseryman can serve you better or cheaper. Full List on application.
ROBERT SYDENHAM, Roseleigh, Birmingham.

To Growers of White Flowers.

New White Pink—SNOWFLAKE.

The above White Pink will be distributed in August next—the Best and Purest White; the Strongest Grower; for Freedom of Flowering, the best; the Latest to Flower, and does not burst; for choice Cut Flowers, for Wreaths and Bouquets, undoubtedly the Finest ever raised.

Young Plants, 6s. per doz.; 25s. per 100;
200s. per 1000.

Sample of Flowers sent on receipt of Postage.

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CINERARIA, DIXON'S SUPERB GIANT.

The Choicest Strain in the Country.

In Sealed Packets, 1s. 6d., 2s. 6d., and 5s. each.
Price to the Trade on application.

For full Description and Illustration, see *Gardeners' Chronicle*, January 2, 1892.

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RICHARDS' NOTED ORCHID AND OTHER SELECTED PEATS,

Loam, Sand, Manures, Bamboo Canes, Netting, Shadings, Tobacco-Paper, Insecticides, Weed-Killer, and all Garden Sundries, at the Shortest Notice. Special Railway Rates to all parts.

The Horticultural Stores, 1, Belvedere Crescent, Lambeth, London, S.E. Chief Peat Depot and Grounds—Ringwood, Hants. Samples and Price List post-free.

ORCHID PEAT.

PREPARED, ready for use, all fibre, 10s. per sack; 5 for 47s. 6d. SELECTED, in blocks, very fibrous, 8s. per sack; 5 for 37s. 6d. SECOND QUALITY, 5s. per sack; 5 for 22s. 6d.

BROWN FIBROUS PEAT for Azaleas, Rhododendrons, and Ferns, 4s. per sack, 5 for 18s.; and 3s. per sack, 5 for 12s. 6d. PEAT-MOULD, LEAF-MOULD, and FIBROUS LOAM, each 2s. 6d. per sack; 5 for 10s. PREPARED POTTING COMPOST, 4s. per sack; 5 for 18s. All sacks included.

Send Postal Order for Sample Sack.

Special terms to the Trade. For Price List apply to THE FORESTER, Joyden Wood, near Bexley, Kent.

EPPS'S Selected PEAT,

For ORCHIDS, STOVE PLANTS,

Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton, or truckload. SPECIAL ORCHID PEAT, in sack only. Rich fibrous LOAM, superior LEAF-MOULD. Coarse, Crystal, and Fine SILVER SAND, CHARCOAL, C.N. FIBRE REFUSE, fresh SPHAGNUM, Patent MANURES, FERTILISERS, INSECTICIDES, and all other Garden Requisites. Peat Moss Litter.

The Original Peat Depot, RINGWOOD, HANTS.



For DESTROYING WEEDS, MOSS, &c., ON CARRIAGE DRIVES, GARDEN WALKS, ROADS, STABLE-YARDS, WALLS, STONEWORK, &c.

Saves more than twice its cost in Labour.

Mr. W. G. HEAD, Crystal Palace, says:—"We are so satisfied with your composition and its price that we have used it absolutely. I have every confidence in recommending it."

Prices:—In 1 and 2-gallon Tins, 2s. per gal. (Tins included); in 5-gallon Drums, 1s. 6d. per gallon. 10, 15, and 20 gallons, 1s. 4d. per gallon. Special quotation for larger quantities. Carriage paid on 10 gals. and upwards.

Used in the proportion of one gallon to twenty-five gallons of water. Sole Proprietors and Manufacturers,

THE "ACME" CHEMICAL CO., Ltd.,
Tunbridge, Kent;
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7 lb. 14 lb. 28 lb. 56 lb. 112 lb.
2s. 6d. 4s. 6d. 7s. 6d. 12s. 6d. 20s.

Or direct from the Works in 1s. Packets, post free, or Bags of either size, Carriage Paid (as sample), in the United Kingdom, for Cash with order as above.

The respective Trade Mark is printed on every Packet and Bag, and also impressed on the Lead Seal attached to the mouth of each Bag. The only Guarantee of Genuineness.

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THE

Gardeners' Chronicle.

SATURDAY, JULY 16, 1892.

LONGFORD CASTLE.

TO call at a garden when the bedding-out operations are in full swing and haycutting impending in the immediate future, is to tempt the Fates. Our visit to the Earl of Radnor's garden at Longford Castle, near Salisbury, was more one to a valued correspondent than one of inspection; consequently, much talk was indulged in, but no notes were taken, and the penny post has been relied on to fill up some of the deficiencies of imperfect memory.

The park commands fine views, and a clear river, beloved of the trout, rushes through it as if it had not a minute to lose, in order that it may keep its appointment with the sea at Christchurch, some 35 miles off. That portion of the demesne eastward of the Castle is flat to the extent of several hundred acres. The ground then rises somewhat sharply to a considerable height, forming an irregular but beautifully wooded background, and above the tree-tops is seen the tapering spire of St. Mary's Church, Alderbury, in the "Green Dragon" of which picturesquely-situated village, we may remark, *en passant*, Dickens' Martin Chuzzlewit is said to have refreshed the "inner man" when on his way to Salisbury. That portion westward of the Castle is beautifully undulated, with fine belts, and clumps of Chestnuts, &c., and charming vistas, with the spire of Salisbury Cathedral cutting the sky-line 3½ miles distant. The green sward is dotted with noble Beeches, and other trees, among which a glorious Pinus insignis, a handsome purple Beech, and a fine deciduous Cypress were specially noticed.

A scarlet Pavia affords an illustration of the results of root-pruning. Two trees of the same species and of the same age stand side by side, the one was towards the end of the year root-pruned, its companion was undisturbed. The one flowered freely the first year after the operation, whilst that in which Nature had her own way, has not flowered yet.

At a point formed a short distance from the "Rapids" by the confluence of the waters of the Avon and the "Etele" (the latter is an excellent trout-stream running through a different part of the grounds, and spanned by two iron bridges) is the "old garden." This is a green sward, protected on all sides excepting the south-east, by high trees. On this sheltered piece of turf are a few beds of Moss and other Roses on their own roots, the shoots being pegged down, others having Irises, Liliun candidum, &c. Two fine old specimens of hardy Heath was so damaged by snow and frost last winter, that they had to be cut down to the ground, but being rapid growers, they are now forming nice-sized bushes again. Here also is another but smaller specimen of deciduous Cypress, aged Judas trees, producing their rosy purple flowers; hardy Ferneries close by, and two summer-houses, one

in the centre of the green, a "Robinson Crusoe Hat" in shape, open all round, with climbing Roses, Clematis, &c., trained up the rustic Oak pillars, and over the Heather-thatched roof, which, in spring, is brightened by a display of Crocuses and Snowdrops growing in 3-inch pots filled with soil, and then buried below the rims in the thatch; the other, composed of bricks and mortar, and having a tiled roof with artistically constructed Oak table and seats all round inside, being completely hidden under the spreading branches of an English Yew, of which other good specimens are to be found in other parts of the grounds, in which another summer-house, alcove in shape, was noticed. This was built in 1745, and is quite a feature in this part of the pleasaunces. Borders of hardy Ferns are on either side the walks leading to this summer retreat. New and winding gravel-walks have been made here during the past winter which, connecting as they do, the walks in the new (15 acre) portion of the grounds with those in the interior of the "old garden," &c., add greatly to the beauty of the place, and the comfort and convenience of seeing over it.

Many improvements have been made in the gardens at Longford during the last three years, including two herbaceous borders 100 yards long, and 3 yards wide each, and which in due time (as they were only planted last March) will render a good account of themselves, and add a new feature to the floral department at Longford.

In front of the castle is the principal flower garden—formal and precise with geometrical beds, and bounded by closely-clipped hedges. Of course, this is all heresy to some people, and we should be of the same opinion perhaps, if it were anywhere else but on the terrace adjoining the mansion. Here it is quite appropriate, and is in substance part of the architectural scheme. Violas and Carnations, Pelargoniums, and the usual occupants of these gay beds are employed in great numbers, and arranged with such skill and judgment that harmony is not, as it often is, sacrificed to mere brilliancy. The bedding Violas were unusually fine in size and colour; the Wiltshire climate is no less propitious to them than the Scottish. Pelargoniums Henri Jacobi (crimson), the good old Tom Thumb (scarlet), Master Christine (pink), Leamington Lass (semi-double, pink), together with the silvery-foliaged Manglesi, Bijou, the golden-tricolored Mrs. Pollock, golden-bronze Robert Fish, and the dwarf and very useful and effective golden Harry Hieover, are the varieties mainly relied upon by Mr. Ward for bedding-out purposes. Dwarf blue, or, rather, mauve-coloured, Ageratums Tom Thumb and the Zoo, are also spoken well of, as also are the white varieties, Snowflake and *Enfant de Paris*; and deep blue is well represented in several small square beds, having a oask-shaped Irish Yew in the centre of each, filled with *Lobelia pumila magnifica*, and *Salvia patens*, the prettiest of blues.

Flowers are not the only tenants of the terrace, for close by is an aviary, where the plumage of particolored birds vies with the brilliancy of the flowers. Peacocks have even been known to strut about among the flower-beds, viewing them, no doubt, the while with contemptuous indifference.

The fruit houses are mostly hip-roofed, and here Grapes in their successional compartments, Peaches and Melons, looked promising; Pines are grown in pits, and exhibitors in some places will have this year, as in former ones, to reckon

with Mr. Ward. Twelve months ago last autumn Mr. Ward, finding that the Vines in the principal range of vineries which had been bearing heavy crops of fruit for the previous ten years showed signs of exhaustion, cut a trench 2 or 3 feet wide the entire length of the borders, inside and out, at between 4 and 5 feet from the stems of the Vines, replacing the excavated soil by a mixture of sound loam, wood-ashes, lime-rubble, and soot, in the proportion of about four loads of loam, one load of wood-ashes, one of lime-rubble or properly slacked lime, and an ordinary garden barrowful of soot, the whole being well mixed before being used. The condition of the Vines this year goes to show the wisdom of having subjected the Vines to the above somewhat severe measure of root-pruning. There are some twenty varieties of the Grape-vine cultivated under glass at Longford, but Black Hamburg, Muscat of Alexandria, Madresfield Court, Mrs. Pince's Black Muscat, Gros Guillaume, and Lady Downes, are mainly depended on. And the same may be said of Melons, Carter's Blenheim Orange (scarlet-flesh), and Sutton's Hero of Lockinge, and Webb's President, both white-fleshed varieties. The Peaches and Nectarines finding most favour at Longford indoors and out, and of which the crops are equally good, are—Peaches under glass: Hale's Early, Goshawk, Prince of Wales, Sea Eagle, Princess of Wales, Exquisite, and Barrington. Nectarines: Lord Napier, Pineapple, Elruge, Balgowan, and Spencer. Outdoors, in addition to the above, Alexander, Amsden, Dr. Hogg, Royal George, Stirling Castle, Bellegarde, Dymond, Chancellor, Early Grosse Mignonne, Violette Hâtive, and Salway. Nectarines: Dryden, Humboldt, and Pitmaston Orange. In addition to the list of Peaches, there are several young trees, received from Florida a year or two ago, which Mr. Ward has not yet fruited. Tomatos were, at the time of our visit, slightly affected with mildew and other fungoid abominations, but Mr. Ward is not a man to put up with their presence any longer than he can help, and we learn that shortly afterwards all the affected leaves were taken off and burned, a good watering at the roots afforded, air was admitted freely night and day, and the use of the syringe upon the foliage withheld; within a week all the plants recovered their health, and have been bearing excellent crops of fruit ever since. This is very encouraging, for if such practice answers the purpose, we need not run the risk of burning the foliage with copper-solution or sulphur. It must, however, be remembered, that it is not one fungus only which attacks the Tomato under glass, but two or three; and what may suffice in one case may be useless in another.

Cut flowers and plants for decoration are of course in great demand, but a gardener like Mr. Ward makes light of such requisitions. A commencement is being made with Orchids, Lady Radnor being very fond—and having a good knowledge—of them, and the plants are evidently thriving. Tuberoses were looking so specially good, that we ventured to ask Mr. Ward to tell us "how it is done," and in another number he will kindly respond to our request. *Eucharis amazonica* are grown in large quantities, the plants being large and full of vigour. Mr. Ward is of opinion that if clean healthy plants are given a stove temperature, and kept uniformly moist at the roots while flowering, and for a few weeks after they are gone out of flower, giving frequent waterings of liquid manure during the interval, and afterwards partially withholding water from the roots until the

flower-spikes appear—no complaints of the plants being affected with the "mite" will be heard of. With clean plants to start with it is the treatment which they are subjected to that is responsible for the presence of the mite. Plants growing in a low temperature and over-watered at the roots are certain to be attacked with the mite. This is a fact. *Pancratiums*, in variety, also succeed with the same treatment as that given to the *Eucharis*. *E. Mastersi*, *E. candida*, and *E. Şanderi*, are also grown, the flowers of these varieties being smaller than those of *E. amazonica*, are found very useful for special purposes. *Callas* and *Bouvardia Humboldtii corymbiflora* are largely grown for the winter and spring decoration of conservatory, rooms, &c. Two new pits facing due south, and 64 feet long each, are devoted to the culture of Violets, the varieties grown being Marie Louise, Neapolitan, De Parme, Patrie, Victoria Regina, The Czar, and Comte Brazza.

Out-of-doors the wall trees were looking well, but here, as elsewhere, this season, Pears were, to adopt an Hibernian mode of speech, conspicuous by their absence. Mr. Ward thinks highly of a new Lettuce known as Carters' Harbinger.

There is one feature at Longford worthy of note, as an illustration of good understanding between employer and employed, which, when it exists, contributes so much to the comfort of both parties. A portion of the pleasure-ground is reserved for the use of some of the upper servants, who in that spot select the plants to be grown, according to their fancy. As to Mr. Ward, he is to be made happy in the construction of a new and commodious residence now being built. Long may he continue to direct the gardens at Longford with the same skill and attention to detail that he now does.

NEW OR NOTEWORTHY PLANTS.

RHODODENDRON RACEMOSUM.*

WE have had such a feast of Rhododendrons lately, that there is some chance of our forgetting or overlooking the humbler pioneers that gladdened our eyes in spring. That piece of ingratitude would, however, be sure to be remedied next season, for in this new Chinese Rhododendron we have, indeed, a plant which every plant-lover will appreciate. It is of dwarf habit, being not more than 5 or 6 inches in height, with loose heads of bell-shaped or funnel-shaped corollas of a rose-pink. The plants exhibited by Messrs. Veitch at the Royal Horticultural Society at one of the spring shows had been growing in the open ground, in their Combe Wood Nurseries, all the winter, so that their hardiness may fairly be assumed, for even in the blazing midsummer we could not quite forget what a terribly long and destructive winter we had.

We extract from the *Bulletin of the Botanical Society of France* the original description of the plant by M. Franchet, because Mr. Watson, in *Garden and Forest*, May 11, 1892, throws some doubt on the correctness of the name, and gives his reasons for so doing. Another season we shall have a better opportunity of investigating the matter. In the meantime, those who want a charming little shrub for the rockery or as an edging, should consult Messrs. Veitch as to the possibility of procuring it.

* *Rhododendron racemosum*.—Frutex humilis, ramulis hornotinis glandulis scabris. Folia coriaceae obovata vel elliptica supra pallide virentia glaberrima subtus glaucescentia lepidota. Gemme uniflorae vel nunc 2–3 floris, omnes axillares nunc fere e ramorum ortu. Flores parvi rubescentes longe pedunculati; calyx e minimis, lobis fere inconspicuis; corolla tubuloso-campanulata $\frac{1}{3}$ – $\frac{1}{2}$ pollicaris; stamina 10 exserta, filamentis inferne pubescentibus; ovarium dense lepidotum. [Yun nan in monte He-chan supra Lan-Kong, alt., 3000 m. (Delavay, n. 838), et in Monte Tsang Chang (n. 299). Franchet in *Bulletin de la Societe Botanique de France*, 1887, vol. 34, p. 235.]

FORESTRY.

LARCH DISEASE.

MUCH has been said and written upon this subject, but the mass of evidence brought to bear upon it is of so conflicting a nature, that in place of throwing a ray of light, it rather tends to envelop the subject in a bewildering cloud of gloom and mystery. This arises, in a great measure, from the fact that the Larch is subject to a plurality of diseases, and these are often simply spoken of as the Larch disease, without giving the distinguishing details as to the origin and mode of attack, hence the conflicting opinions and theories advanced regarding it. As my practice and observation have extended over a wide range of country in Great Britain and Ireland for a period of some fifty years, and under very different conditions as regards soil and climate, it may, therefore, not be thought altogether presumptuous if I offer a few remarks on this vexed question.

In the first place, then, plants and trees, as a

the vitality of home-saved as compared with foreign seed. One pound of foreign seed will often produce as great a number of plants as 5 lb. of home-saved seed; and besides, foreign seed generally vegetates several days earlier than home seed under the same cultural treatment, and this blunted vitality from inferior seed appears to me to be the first stage of the Larch disease proper. Trees raised from home-saved seed do not start to grow so early in spring as such as are raised from foreign seed, consequently they are less liable to be damaged by late spring frosts, and this explains the reason that many planters prefer the former. This, however, applies to young trees in the early stages of their growth; after the trees are established in the forest, the difference as regards hardiness is less perceptible.

Many years ago, when laying off and forming the principal plantations on the Balmoral estate for the late Prince Consort, I planted the top of a Heather hill exposed to the full sweep of the wind from all quarters, with a mixture of Tyrolese Larch and Scotch Fir; and as there was no regular forester at that time, nor for many years afterwards, upon the

Larch tree affected with ulceration in Ireland, where the climate is more genial and the frosts of shorter duration. For full particulars about this disease, see my prize essay, written upwards of twenty years ago, and to be found in the *Transactions of the Highland and Agricultural Society of Scotland*. Sometimes the surface of the ulcerated spot gets partly covered with a fungoid growth, which appears in groups like small warts of a reddish and sometimes of a yellowish colour (*Nectria cinnabarina*), but these may be effectually killed by painting the spot with coal-tar, and although the growth of the trees is retarded, yet they are seldom killed by this disease. This fungus often attacks hard-wood trees in a similar manner at places where the bark has been damaged.

Larch attains its best form of development on loose soil well mixed with a small portion of clay and organic matter to attract and retain moisture; wet ground attracts frost, and promotes ulceration; dry inorganic shingle, hard gravel, loose sand, stiff clay, and moor-pan produce heart-rot and pumping. Soil that contains upwards of 20 per cent. of lime is inimical for Larch culture, the trees appear to thrive in such a soil for a few years, but ultimately they exhibit a stunted growth, and often die off in a wholesale manner, without any apparent cause whatever. The climate of Ireland is more suitable for the growth of the Larch than that of Great Britain, frosts are less intense and of shorter duration, the heated vapours arising from the Atlantic waves soon dispel the snow clouds in the air which fall in genial showers of rain to promote vegetation, and thus imprint upon the bosom of the earth in God's language of Nature the "green isle." *J. B. Webster, Planter and Wood Surveyor, Fairview, Stangmore, Dungannon.*



FIG. 9.—RHODODENDRON RACEMOSUM: HARDY DWARF SHRUB; FLOWERS, PALE LILAC.

general rule, prefer some particular class of soil and situation to promote their best form of development. The natural habitat of the Larch is on the Swiss and Tyrolese mountains, the geological formation of which, we are told, consists of different kinds of rocks, such as mica-slate, granite, limestone, sandstone, &c.; and although the Larch grows and reproduces itself on the former class of rocks quite freely, yet we are told by pedestrians who have traversed these mountains, that the tree is not to be found on the limestone and sandstone formation at all—or, at any rate, when it does appear, it only attains the size of stunted scrub. Now, as a planter, I can count my acres by thousands, and my trees by millions, which I have planted on all classes of soil from the sea-shore up to the highest point of arborescent vegetation in this country, and as a general rule I have found the Larch unsuitable for planting on the sandstone and limestone rocks, as they seldom attain a profitable size, and in many cases die off altogether without any apparent cause whatever. Such trees, however, generally produce abundance of cones, and as they are easily collected from small trees as compared with cones upon tall healthy trees, the seed collector prefers them; and this accounts in a great measure for the difference in

estate, I pointed out this part of the forest to the present forester, Mr. Michie, while there on a visit some time ago, and he tells me that he cannot distinguish any difference between them and the common Larch in the same forest. These forests and plantations are extensive, and took me upwards of six years to accomplish their formation.

ULCERATION.

This disease is often spoken of and confounded with the Larch disease proper, which originates, as I have already shown, by planting the trees on ground inimical to their best form of healthy development; while ulceration is produced by cold and exposure, such as late spring and early autumn frosts, which occur before the wood has become firm and matured. When the trees are frost-bitten in spring, the natural flow of the sap is suddenly arrested, small blisters are then apt to appear here and there along the stem, and sometimes ulceration sets in, which is Nature's mode of discharging the contaminated sap caused by the sudden change of temperature and want of leaf-action. This disease is quite common in many parts of Scotland and England, where the frosts are often severe and of long standing; but it is a curious fact that I have never seen a single

WIRED-WALLS FOR FRUIT TREES.

I HAVE lately met with some striking cases of failure in regard to these. Old walls are often uneven and irregular, and as a short cut to remedy these evils a straight wire or iron rod is carried across the most projecting points. On these, galvanised or other wire is stretched to form a trellis, and on the latter the trees are trained in straight and methodical forms. The trees are not only to hide out of sight the crumbling inequalities on the face of the wall, but to furnish the area with a profusion of brilliant blossom and a plentiful supply of luscious fruit. But somehow, unless the very hardiest varieties of Apples or other fruits are planted, neither one nor the other covers in the manner and to the extent so confidently expected.

Within a few weeks I was consulted as to the failure of such a wall furnished with Peach and Pear trees. The aspect was south with a point or two of west. It could hardly have been more favourable in the thoroughly sheltered position in which it occurred. The soil had been bodily removed to the depth of a yard, and replaced with such a holding loam as these trees delight in. The trees had also made a good growth, and had been in these favoured quarters, and the owner had never gathered a fruit off either of the trees on this his best wall, which had cost him so much for trees, trellising, soil, and labour.

"Now, Sir, can you unravel this mystery?" My answer was "No—for the all-sufficient reason that there is no mystery about it." The sun shone with summer-like heat on this day of early spring. Nevertheless, the east wind iced the genial temperature down very considerably. "What is the secret then?" impatiently asked my interrogator. My answer was "Cold." He replied composedly: "Place your hand—or better still, your head—in the unusually large vacuum between the trees and wall, and prove the truth." I did so, and was speedily satisfied that with any living thing disliking perpetual draught, this was the surest possible way not only to strip its leaves of blossom or young fruit, but to undermine its health or destroy its life. My receipt for making these trees fertile, was either to build up the wall with rough bricks, stone and

mortar to the level of the trellis, or take the trellis away, and allow the branches to follow the irregular lines of the wall. By some such methods, the perpetual draught or cold-producing current, chilling the trees, would be stopped, and they would proceed to bear forthwith. They were simply starved into sterility to shut out the cold, and the available heat would immediately be utilised in the conversion of the vital and growing force of those trees into luscious produce.

During the same week, the following case was laid before me. Some tall forest trees were taken down at the eastern side of an exposed orchard. It was desired to utilise the space, and shut out the wind by erecting a wooden fence 9 feet high. It was proposed that the deals or slabs forming this fence should meet edge to edge without any feather or strip of wood between; the slightest shrinkage would have converted this fence into a veritable air sieve. And yet a choice collection of Pears and Plums was to be grown on this wooden fence; though owing to the slow conducting powers of wood it is always inferior to bricks as a background for rearing and training choice fruit trees. Trained against the wood, the trees will seldom be so warm as those in contact with a brick surface. On the other hand, it must be admitted they may never be quite so cold.

But the following query arrived by post just when the trees were ready to plant: "How far should we place our trellis for the trees from the boards—six, or nine inches, or a foot?" My prompt answer was: "No trellis, unless you forestall your trees into shrubs through a perpetual current of cold established and continued through all time in the vacuum thus created between the trellis and the hoarding. Plant your trees, and train them against the boards, and keep out all draughts under or between any part of the fence, and there is good ground for hoping for perfect crops of fruit." If our heating or training surface is not always so good or warm as we may wish, that is a good reason why we should put our trees close up to it, so as to enable it to absorb all its available caloric instead of chilling it down with the intervention of a trellis or a vacuum to please the eye, or for any other purpose. The primary object of growing fruit trees is for their fruit, rather than to render rough walls smooth on their surface, or crooked walls straight. *D. T. F.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA WARSCEWICZII (GIGAS).

SINGLE flowers of three fine varieties come from as many senders. That from Joseph Broome, Esq., of Llandudno, is a noble flower of the Sanderiana type, the expanded petals reaching 9 inches, and being 3 inches broad. The labellum is 3 inches across, of a rich velvety-crimson, the edge lilac, mottled with crimson, and the whole flower fine in form and rich in colour. That from G. C. Raphael, Esq., Castle Hill, Englefield Green, was bought for *C. aurea*, and it bears traces of that variety in it. Its sepals and petals are delicate pink, the lip fine crimson, with yellow and purple markings in the throat. The third comes from John Mills, Esq., Bitterne Park, Ringwood (gr., Mr. J. Smythe). It is smaller than the other two, but has a rich colour, the light patches on each side of the labellum being smaller than usual, and white, with a shade of yellow. All are beautiful, and serve to show the variability of this favourite species.

FOREIGN CORRESPONDENCE.

POISONS ON AMERICAN FRUITS.

THERE has recently appeared in a number of European horticultural and other papers, articles condemning American fruits, on the ground that they contain poisons left there in the process of spraying for fungous and insect pests. So far as we are aware, the charges set forth in these articles are based wholly on assumptions, no direct evidence whatever of the presence of poisons on American

exported fruits having been produced. One of the principal arguments used by the writers of the articles referred to, is that certain boards of health in the United States have seen fit to seize and destroy large quantities of sprayed fruit because they contained poisons in sufficient quantity to menace the public health. Much capital has been made of this, yet when the question is fully understood, it will be seen that as an argument against all sprayed fruit, it carries little weight. The New York City Board of Health is, so far as we know, the only one that has taken any definite action in this matter.

The causes which led up to this are fully explained in the following report, which was made by the writer to the Secretary of Agriculture, and published by his authority in the Annual Report of the Department for 1891:—

"In the latter part of September much excitement was created in New York city by the Board of Health seizing a quantity of Grapes which had been sprayed with Bordeaux Mixture. All sorts of rumours were rife at the time, columns of sensational matter appearing every day in the leading papers of the city and state. This, of course, seriously injured the Grapemarket, which, for various other reasons, was already considerably depressed. At the request of the New York Board of Trade, and in accordance with your instructions, I went to New York city when the excitement was at its height. It was found that the sensational reports, to the effect that tons and tons of Grapes were being seized and dumped in the river, were wholly without foundation. The Board of Health, acting upon the advice of its assistant chemist, had seized a small consignment of fruit from Ulster county, New York, and upon this most of the fabulous stories were based. Soon after my arrival a meeting of the Board of Trade was called for the purpose of allaying, if possible, the fears of the public, and restoring the market to its usual condition. By request, I addressed this meeting, and gave a detailed account of the methods employed in treating Grape diseases, dwelling particularly on the Bordeaux Mixture, and its entire harmlessness when properly used. The meeting appointed a committee to confer with the Board of Health on the subject. I was invited to be present at this conference, which took place immediately after the adjournment of the Board of Trade meeting. The committee was received very cordially by the Board of Health, and, after some preliminary remarks by the president, I was again asked to give an account of the Bordeaux Mixture, how it was made and used, what it was used for, &c. This being done, the Board of Health gave its side of the case, which, in brief, was that their attention had first been called to the matter by citizens sending in a quantity of Grapes, plastered with a bluish-green substance. The matter was referred to the assistant chemist, who decided that the bluish-green deposit contained copper in large quantities. Search was then made at the fruit stands, commission houses, boat landings, and other places, the result being in accordance with the facts already set forth. After further deliberation, the following statement was prepared by the Board of Health, and given to the papers:—

"1. A copper salt is found only upon a very small part of the Grapes offered for sale, and the Grapes which are to be avoided are easily recognised by the greenish-coloured substance upon the berries and stems.

"2. Whenever this substance is apparent upon the berries or stems, the Grapes should be washed before they are used as food or in the manufacture of wine.

"3. The Board urges all dealers and consignees in this city to advise shippers and consignors of Grapes to send no more Grapes to this market upon which the substance is apparent. The Board further states that it does not object to the use, at the proper time, of the Bordeaux Mixture as recommended by proper authorities, but such Mixture, or any mixture containing poisonous substances, should not be sprayed or otherwise placed upon the Grapes immediately before or after they have matured, and

should not appear upon them when sent to the market or offered for sale.

"For the purpose of inspecting the vineyards the Board of Health, before finally adjourning, decided to send the assistant chemist to the region from which the seized fruit came. The Department of Agriculture was also represented at this inspection, Mr. D. G. Fairchild being selected for the purpose. No facts of importance were brought out by the visit of the assistant chemist and Mr. Fairchild, excepting that wherever Vines have been sprayed in accordance with the precautions so many times set forth by the Department, the fruit was in excellent condition, both as regards freedom from rot and objectionable deposit. After this nothing further was heard of the matter, and in a week at most the market had assumed its usual condition. Looking at the matter from all sides, no conclusion can be reached other than that the blame for the scare and its consequences rests about equally between the Board of Health and a few over-zealous Grape growers. There is no doubt that some growers exercised gross carelessness in unnecessarily daubing their fruit with the Mixture long after the treatment should have ceased. Even when it came to send the Grapes to market, they were in some cases seemingly dumped into the baskets without the slightest effort being made to remove the bluish deposit, which was in no case found on berries properly treated. Only a few growers did this, but thousands were made to suffer thereby. On the other hand, the Board of Health acted hastily in the matter, and by its method of conducting affairs, caused the Press to make a mountain out of a mole-hill. Altogether, the lesson has been a valuable one, and it again forcibly illustrates the old saying that even the best remedies in the hands of some will often prove a curse. In some parts of the country, Grape growers were actually spraying their Vines two or three times a week, thinking, as some of them have stated to me, if twice a month was good, four or five times as often would be a great deal better.

"In this connection it may be well to caution all Grape growers in regard to use of Bordeaux Mixture in seasons of drought. In case dry weather sets in after the first or second spraying, it would be well to make the rest of the treatment with the ammoniacal solution of copper carbonate. Altogether, this course of treatment will probably be just as effective against rot and other diseases, no matter what the season may be. It is certainly cheaper, and removes at once all possibility of disfiguring the fruit. It should be borne in mind, however, that the application of all fungicides should cease as soon as the fruit begins to ripen. If this be done, not the least damage to health need be apprehended from eating the fruit or drinking the wine made from the same."

Since the foregoing was written, nothing has transpired to change the views therein set forth. Grape growers all over the United States are spraying their fruit, and it is safe to say that where this work is intelligently done, the crops will not only be saved from black rot and mildew, but will, as we have elsewhere * shown, be as harmless as our everyday foods and drinks. *B. T. Galloway, Department of Agriculture, Washington.*

BUITENZORG, JAVA.

Dr. Trimen thus reports on the famous botanical establishment under the direction of Dr. Treub:—

"The Dutch botanical establishment at Buitenzorg is of a different character from this [Ceylon] or any English one, not even excepting Kew, and is maintained entirely on a scientific basis. The director has the control of all the six departments into which the institution is divided, as follows:—1, the herbarium, library, and museum; 2, the botanical laboratory; 3, the experimental garden and laboratory for agricultural chemistry; 4, the pharmacological laboratory; 5, the botanic gardens; 6, the

* Farmer's Bulletin No. 7, U. S. Department of Agriculture, Washington, D. C., 1892. "Spraying for Insect Pests and Fungous Diseases, with a Special Consideration of the Subject in its relation to the Public Health."

photographic institution. Each of these departments is under the immediate management of a highly-trained scientific or technical chief from Holland, and most of these have also an assistant. There is thus a large staff of Europeans. The laboratories, library, &c., are completely stocked, and kept fully up to the time, and everything is provided for close investigation and original research in all branches of botanical study. Many students are thus attracted from Europe, and the laboratories afford accommodation for a considerable number of workers. A valuable serial publication, the *Annales du Jardin de Buitenzorg*, is issued at intervals, devoted to scientific botany, and another one, *Teijsmannia*, occupied with economic and garden subjects.

"The Botanic Gardens themselves at Buitenzorg occupy between 60 and 70 acres, at an elevation of about 800 feet, with a fine soil and abundant water, and are well protected by a high iron railing and a barbed wire fence. Nearly the whole is occupied by a classified arboretum, each natural order being isolated by a road or path. The collection is extremely rich, and every species is elaborately labelled with upright labels made of the very hard wood of *Eusideroxylon*, which is never attacked by termites. The whole is now much too crowded, and cannot be said to be of much beauty, but is, of course, extremely convenient for scientific study. Connected with Buitenzorg is a small hill-garden, at Tijbodas, 4700 feet, also under a European superintendent, where is also a house for the Director, and a laboratory and accommodation for four students.

"The experimental garden (*Cultuur-tuin*) is about 2 miles from the main garden, and is 200 acres in extent, but is not all at present occupied. It is laid out in square plots, each devoted to one product; large labels at each corner give the name, date of sowing or planting, and other information. Here are very many plants of great interest. Though a large distribution of seeds and plants is made to planters and others, no charge is made for anything.

"On the whole, I was filled with surprise and admiration at the completeness of Buitenzorg as a centre for botanical work; the only weak side seemed to be the herbarium, which is by no means kept up on a par with the rest of the means of study."

FRUIT NOTES.

LAXTON'S SCARLET QUEEN STRAWBERRY.—For comparison sake, I planted the above variety alongside of *Vicomtesse Héricart du Thury* and *Laxton's Noble* on a south border. When the plants were commencing to grow, frame lights were placed over them. Fruits of *Noble* were gathered on June 4, *Scarlet Queen* three days later, followed by *Vicomtesse* a few days later still. The Strawberry that is likely to displace *Noble* for earliness is *John Ruskin*. *T. H. Slade*.

HARDY APPLES.—We have often compared Apples as to their hardness, quality, and general value, and while trees are now unloading themselves, we see that *King of Pippins* and *Golden Spire* retain their good character by holding their crop tenaciously; while our favourites, *Stirling Castle* and *Seaton House*, known as two of the most productive kinds extant, and of very hardy constitution, are relieving over-taxed Nature every day. To some extent it shows how much cultivators in the north should make selections instead of collections of fruits when plantations of fruit trees are under consideration. It is not only altitude but latitude and longitude which have to be considered, and the nature of the soil and state of drainage as well, when the planting of fruit trees is to result in a tangible success. *M. Temple*.

KNIPHOFIA PAUCIFLORA.

The accompanying sketch was made from a plant which flowered in the Royal Gardens, Kew, in March last, and now at the present time the plant is again in full flower. It was first described by Mr. Baker in

the *Journal of Botany*, xxiii., 1885, p. 280, and was introduced to cultivation a couple of years ago. Though by no means so striking as the old *K. aloides* (*Tritoma uvaria*) and its numerous varieties, *Kniphofia pauciflora* is a no less remarkable plant; and, as may be seen from the drawing, not without a claim to beauty, especially as the flowers are bright yellow, with all the stamens more or less exerted. The whole plant grows from 1½ to 2 feet in height, the leaves few, firm in texture, about 1½ feet long, and half an inch broad, with many distinct ribs, and a thickened smooth margin. The raceme varies from 2 to 8 inches long, in strong specimens to a



FIG. 10.—KNIPHOFIA PAUCIFLORA: FLOWERS YELLOW.

foot or more, flowers all bright yellow, the perianth somewhat cylindrical, about an inch long or more, the segments ovate, as long as broad, style and stamens exerted, ovary round. The bracts are narrow and acute, about ½ inch long. Should this curious species retain the character of flowering twice or oftener in the course of the year, it will, indeed, be a great acquisition as a cool greenhouse subject. The whole plant is graceful in habit, the flowers are bright and attractive, and they first appear in March—a time when plants of this class are a desideratum. Its hardness, so far as we know, has not been tested. It will probably require a sheltered spot, and even this we should not advise unless we can get duplicates. It is a native of Natal. *D.*

M. JADIN'S VISIT TO THE MASCARENE ISLANDS.

(Continued from vol. xi., p. 718.)

"The manufacture of perfumes, although only started for a short time, is already considerable. Principally, it is confined to the essences of *Geranium*, *Patchouly*, and *Vétiver*.

"The essential oil of *Geranium* is incontestably that of which most is manufactured. It is extracted from the leaves of *Pelargonium odoratissimum*, a plant which grows and thrives very well at all altitudes in this climate. [It is doubtful whether M. Jadin forgets that the *Piton des Neiges* in Réunion exceeds 10,000 feet altitude, where only alpine plants are to be found?] The altitudes comprised between 400 and 600 mètres, i.e., between 1,400 and 2,000 feet are most favourable for its production; and here three crops are gathered within fourteen months. The yield from March to October exclusively is the most abundant, a period of lesser growth is that from October 15 to January 15.

"Calculating at 40,000 feet to the hectare, each cutting gives about 14,700 kilogrammes for each crop. This weight of the yield (with the leaf a certain quantity of woody stalk is gathered which, while augmenting the weight, diminishes the yield), gives from 10 to 12 litres of essence. A kilogramme of essence is worth, generally, about 60 francs, which gives an annual return of 1,750 francs (£70) per hectare.

The essence of *Patchouly*, which is extracted from the leaves of one of the *Labiata*, *Pogostemon Patchouly*, gives a still better yield with more advantageous results; 50 kilogrammes of its leaves give 875 grammes of essence, or thereabouts. This plant also thrives very well in these climates.

"Lastly, the essence of *Vétiver* is extracted from the roots of a grass—*Andropogon muricatus*. The plant is very common in the Mascarenes; it often borders the fields of sugar-cane, and does not require the least care for its cultivation. Of this essence 400 or 500 grammes are furnished by 50 kilogrammes of roots; but the difficulty of extraction has not hitherto enabled the planters of Réunion to export this production with the requisite purity for the market.

"Of these three essences, that of the *Geranium* is most in favour in our colony. [It is needless to remark that black people are extravagantly fond of using strong perfumes, for very obvious reasons.]

"During the last few years, several large plantations of quinine have been formed at Réunion. Dr. Auguste Vinson,* the author of a valuable work on the spiders, *Arachnidæ*, of Réunion), succeeded in obtaining some *Cinchona* plants from seeds received from Monsieur Decaisne, through the kind services of General Morin. In 1888, some 31,700 feet planted by the Colonial Forests' Department had proved successful, and from this source the Department has distributed to a number of proprietors 4,150 plants. The nurseries of the Government (*service domaniaux*) contain some 16,500 plants of *Cinchona*. These plantations succeed well between 500 and 1,000 mètres (1,700 and 3,500 feet) altitude. 'The sloping sides of small ravines or depressions facing the leeward side of the mountains are most propitious for the cultivation of the *Cinchonas*. We were enabled to inspect these plantations under favourable circumstances, and the Director of the Forests Department, Monsieur Neveu, hoped soon to be enabled to gather a certain quantity of bark. Already in 1889 the Director of Woods and Forests had been able to sell a small quantity.'

"In countries like the Mascarenes, where fever is so common and endemic, where the health deteriorates so rapidly in constantly fighting against the attacks of malarial poison, it is readily conceivable how useful these plantations of quinine will become.

"We must not conclude these few pages, treating of the agriculture of the islands, without mentioning the very praiseworthy efforts made, particularly at

* Dr. Auguste Vinson was in the Mission to Radama II., in Imerina, in 1842, where the translator had the pleasure of making his acquaintance. *S. P. O.*

Mauritius, to introduce the cultivation of tea. Whilst at Réunion coffee is consumed in great quantities, Mauritius, under the soft influence of the English ladies, without abandoning the traditional 'cup of Creole coffee,' whose renown is so justly merited, consumes a great quantity of tea. The Chinese population is somewhat numerous, and assists a good deal in this consumption. In 1888 the importation of tea was 53,881 kilogrammes, amounting to a value of 186,652 francs (£7,466). These figures induce a certain attention to be given to the cultivation of tea, especially when it is known that localities unsuitable for the sugar-cane are well fitted for tea plantations.

"At Réunion, in the Brulé de Saint Denis,* at about 1000 feet altitude, we have seen tea plants growing well, uncultivated, and without any care being given to them. At Mauritius, on the high ground of Chamarel, we have been able to witness the same circumstance; indeed, many of the high plains of Réunion are uncultivated, and we understand that sugar cultivation has been abandoned at Chamarel. Could not such localities be utilised for the cultivation of tea? It is useful to note that the tea cultivation is highly beneficial, and ought to pay well. The example of Ceylon, before quoted, ought to act as a stimulant for the colonists of the Mascarenes.

"Some praiseworthy efforts, we repeat, have already been attempted at Mauritius; in fact, beside a Government plantation, already supplying a well-perfumed and agreeably-tasted tea, we have seen a private plantation started. It is of considerable importance, and we are convinced that it will give good results.

"We have already noticed that the orography of the two islands is different; we ought not, therefore, to be astonished to find their floras somewhat unlike one another.

"The high altitude attained by the mountains of Réunion determines a variety in its vegetation, which loses its tropical character, and assumes a special physiognomy. Here we see small stunted shrubs, with low and twisted trunks, nowhere surpassing the height of a man. Here are mostly the Ericaceæ of the genus *Philippia*, vulgarly called *Ambavilles* (Heaths), causing the creoles to give to these highlands the name of the region of the *Ambavilles*; and amidst these Heaths are some *Acacias* here and there (*Acacia heterophylla*).

"This region of Heaths is found at about 5,000 feet elevation; but even below, from 3,000 feet upwards, these Heaths begin to show themselves, and predominate more and more over the other forest species as you ascend. This region is succeeded below by a zone of Bamboos, *Nastus borbonicus*, which has been well observed and described by Bory de Saint Vincent. Below the Bamboo zone, the vegetation of the island of Réunion, like that of the sister island, Mauritius, has a physiognomy eminently tropical; in these lower regions the same character is observable in the two islands. 'Since the publication of Mr. Baker's well-known work on the Mauritius flora,† in certain most important books, like that of Grisebach,‡ for instance, different estimates are given of the dissemblance between the floras of Mauritius and Réunion; we cannot help thinking that it is, as yet, difficult to pronounce authoritatively on this assumed want of resemblance, and we sincerely hope that a flora of Réunion, as complete as that of Mauritius by Mr. Baker, may be undertaken and published, in order that these ideas on the resemblances and dissemblances of the floras of the two Mascarene islands may be definitely fixed. The large collections stored for a long time at the Museum of Paris could surely furnish all the necessary material and elements for the work. [An

immense number of plants, collected by Commerson, yet remains all but untouched.]

"The point of departure of these modern ideas is the following passage in the work of Mr. Baker:—'In its orography and botany, Mauritius offers a striking contrast with Bourbon and Madagascar, where the highest mountain-tops are in the centre of the island, attaining a height of 10,000 or 12,000 feet, covered with snow during several months (p. 14).' This is going rather far in its conclusions, as least as regards Réunion. In this island, it is true, the Piton des Neiges rises to 10,000 feet, but it is seldom covered with snow (in 1890, the year of our visit to the Mascarenes, it was not so covered); as to the mountains of Madagascar, which are not higher than the Piton des Neiges, we doubt if they are often covered with snow. [Snow is unknown as remaining on the highest mountains of Madagascar. The highest peaks are those of the Ankaratra mountains, only about 8,000 feet, far below the limit of perpetual snow-line. A few flakes of snow, and a rare shower or two of hail, have been recorded on the highest regions of Madagascar, with hoar-frost, but nothing more.]

"On the other hand, all the plants introduced into Mauritius, and which are there naturalised, are also naturalised in Réunion. The fruit trees are the same in the two islands; we give the following as the most important:—The *Anona*, *A. squamosa*, L., which furnishes the *Atte*, or Custard Apple; *A. muricata*, L., or Corossol, the Sour-sop; *A. reticulata*, which produces the *Cœur-de-bœuf* or Sugar Apple. The Citrus, amongst which we may specify the large fruits of the *Citrus decumana*, the Shaddock or Pamplemousse; the *Mangifera indica*, L., or Mango, in very numerous varieties.* The *Spondias dulcis*, Forster, which yields the *Hévis* or Fruit of Cythera, the *Otaheite* Apple, introduced from the South Pacific by Commerson (after Bougainville's return voyage); several *Myrtaceæ*, amongst which the *Eugenia Jambos*, L., or *Jambosa* and *Psidium Guayava*, or Guava, are very common; the first growing on the sides of the smallest streams, and the second in uncultivated fields. The *Persea gratissima* or Avocado Pear; the *Papayes* of the *Carica Papaya*, so common that pigs are fed on them. The fruit of the *Nephelium*, *N. Lit-Chi*, of *Cambessèdes*, and *Nephelium Longana* of *Cambessèdes*, the *Letchi* or *Lychee* from China. Several *Artocarpus*, particularly *A. integrifolia*, L., or Jack-tree, which furnishes from its enormous fruits a seed recalling to mind the Chestnut in taste; the *Musa* or *Banana*, &c.

"Besides the fruit trees, the vegetation of the uncultivated fields is the same in the two islands; there are the *Leucæna glauca*, Benth., or *Acacia*; the *Tetranthera laurifolia*, Jacq., or *Bois d'oiseaux*, Birdwood; the *Lantana camara*, L., or *Vieilles-filles* of Mauritius, and the *Corbeilles-d'or*, of Réunion; this plant, introduced but lately, has spread with an extraordinary rapidity. The shores are shaded by the same tree, *Casuarina equisetifolia*, Forst., or *Filao*; and where the coast-line is sandy, there grows the *Ipomœa pes-capræ*, Roth., (*Batatrant*, or *Batate à Durand*, of the *Créoles*), which covers the sand with its creeping stalks, with leaves of a bright green, mingled with blossoms of a violet-rose tint.

"In short, we know that agriculture utilises the same plants in the two islands, and if Réunion occupies herself more especially with some products which Mauritius does not manufacture, it is solely because certain lands in the French colony do not offer the same facilities for cane culture by reason of the difficulty of communication along the coast, the consequence of the orography.

"All that remains of the primitive forest, nearly destroyed now, especially in Mauritius, has the same

character: mossy trunks covered with Orchids, numerous Ferns, climbing plants running from tree to tree, the *Rubiaceæ*, *Myrtaceæ*, *Sapindaceæ*, several *Terebinthaceæ*, *Palma*, *Pandani*, &c., form the principal characteristic forest habitants.

"Reverting now to the flora of Mr. Baker, this author describes 1,058 plants, indigenous to Mauritius, Rodriguez and the Seychelles, of which 869 are spontaneous at Mauritius. A little more than a third, about 267 species, are quoted by him as likewise existing at Réunion. [With regard to these numbers of species common to the two islands, Mr. J. G. Baker writes:—'This figure of 287 is quite delusive. It does not include the cosmopolitan weeds, most of which grow in Mauritius, and occur also in Bourbon.' And again he explains that the above figure conveys an utterly wrong idea:—'In the *Flora of Mauritius*, the extra-Mauritian distribution of every species not endemic is given. He [Jadin] has counted only the species where Bourbon is expressly mentioned, not the plants of wide distribution, such as the cosmopolitan weeds, like *Solanum nigrum* and *Bidens pilosa*. Of course the widely-spread weeds that are found in Mauritius are nearly all found also in Bourbon. The species common to the two islands must be nearer 600 than 287.']

"Nevertheless, Mr. Baker has not attempted to search all the available documents on the flora of Réunion—this was not within the scope of his work—we notice, for instance, quoting at hazard from recollection, several *Solanum* (*S. nigrum*, L., *S. auriculatum*, Ait.), the *Ipomœa pes-capræ*, Roth., the *Siegesbeckia orientalis*, L., and the *Bidens pilosa*, L., &c., which he does not indicate as existing at Réunion, and which are nevertheless very common in this island.

"The families, best studied in the two islands, as the Orchids and the Ferns, are those which present the largest number of types common to both islands, according to Baker's *Flora of Mauritius*; thus, out of seventy-four species of *Orchidaceæ*, considered as spontaneous at Mauritius, forty-three are quoted by the author as existing also at Réunion; among 144 species of Ferns indigenous to Mauritius, sixty are also found in Réunion.

"We fancy that a flora of the island of Réunion would augment in notable proportions the number of species common to the two islands, without altogether showing a perfect similitude in the vegetation of the Mascarenes. Besides this, at Mauritius itself, it can be pointed out that certain species are confined to the small islets situated to the north of the island without having representatives in Mauritius; such are the *Lantania Loddigesii*, Mart., or *Lantania* of Round Island; the *Hyophorbe amaricaulis*, Mart., or *Palmiste gargoulette* (Water-bottle Palmiste, from its bulbous trunk), the *Pandanus Vandermeerschii*, Balfour fil., or *Sea Vacca*—*Vacca de mer*, which are confined to the so-called *Gunner's Coin* Island, and to Round and Flat Islands, three small rocky islets separated from Mauritius by insignificant arms of the sea.

"Another reason seems to confirm this idea, and that is the similarity of the fauna of the two islands: no large carnivore, no venomous reptile [on *Serpent* Island there are poisonous snakes]; on the contrary, large birds of different varieties which have now disappeared, as the dodo (*Didus ineptus*), the *Aphanapteryx* (*A. Broeckii*), the Mauritius parrot (*Psittacus mauritianus*), &c. . . . All this seems to give us reason to believe that Mauritius and Réunion formed one whole country, divided by some ancient dislocation, causing minor variations in the flora and fauna of the two islands, which preserve, however, in their broad lines, the same essential character.

"It seems to us, then, that if Mauritius and Réunion have nearly the same flora; the botany of these two islands differs considerably more from that of Madagascar than that of Mauritius differs from that of Réunion.

"These reserves being made, it remains to us to note, after the important work of Mr. Baker, that, out of 869 species spontaneous to the island of Mauritius, the dicotyledons include 460 species, the

* Places where the lava flows have streamed down from extinct craters are called *brûlés* in Réunion. *Le pays brûlé*, or *Le grand brûlé*, is the district still devastated by the recent lava streams from the active volcano. *S. P. O.*

† *Flora of Mauritius and the Seychelles*. J. G. Baker.

‡ *La Végétation du Globe*. Par Grisebach; translation by P. Tchibatchef.

* The Mangos, which are most appreciated in Mauritius, include the following named species, viz., *Mangue Alphonse*, M. Aristide, M. Auguste, M. Bombay, M. Bourbon, M. Charpentier, M. Collard, M. Colville, M. Dauphiné, M. Figet, M. gelée, M. Genève, M. Goa or M. Madame, M. Lartique, M. Legal, M. Maison Rouge, M. Papaye, M. rosa, M. Sabre, M. Torse. Of these, *Mangue Auguste* and *Mangue Genève* are by far the most tempting; a most luscious and delicious fruit, with absence of the turpentine flavour which often disgusts European visitors who take the first Mango they come across.

monocotyledons 245, and the vascular cryptogams 164 species.

"The families represented by the largest number of species are in decreasing order, the Ferns, the Orchids, the Grasses, the Cyperaceæ, the Euphorbias, the Compositæ, the Rubiaceæ, the Leguminosæ, the Myrtaceæ, and the Pandani; this is very nearly the dominant order usual throughout all tropical countries. If instead of enumerating the number of species, we consider those species most common, and classify them in order of their frequency, it would give a far better idea of the physiognomy of the country, and then we should be far more struck with the resemblances than by the differences between the two islands, which, in spite of human treaties made on paper, will ever remain the sister islands." *S. Pasfield Oliver, Moray House, Anglesey, Gosport.*

FLORISTS' FLOWERS.

THE AURICULA.

The repotting of the show Auricula was recommended as soon as they passed out of bloom, and pretty full instructions about the work were given by me at p. 589 of the last volume of the *Gardeners' Chronicle*; some, indeed most, of the leading cultivators, recommend repotting in May, but it is not always convenient to repot the plants just at the proper time, and they have to stand over to a more convenient season. I was repotting my plants in the first and second weeks of July, and they are in very good condition, and they are not nearly so much infested with the woolly aphid as in previous years. The immunity from this troublesome parasite I am inclined to attribute to persistent brushing the necks of the plants with a camel-hair brush, bestrewn with tobacco-powder, and I do not know any better way to apply the powder than this. As repotting goes on, numerous offsets have to be removed from the plants, and these are cleaned from the said aphid and planted each one carefully in small pots, and in finer, sandier soil than the larger specimens. They are then placed under hand-lights, and closely shut in till the rootlets have seized on the soil. The offsets put in last year at this time have not yet grown into full-sized plants, still, they have been repotted, and I hope to get some of them to flower well next season. These are also kept in cold frames in a position well shaded from the sun. Auricula seeds of this season have just been sown. It is difficult to get the seeds in any large quantity, but by crossing a few of the best varieties, I am enabled to obtain enough for my own needs. A few only of last year's seedlings will be strong enough to flower well next year. Alpine Auriculas are generally potted after the show varieties are done, and as they produce a much larger number of offsets, taking one plant with another, than the show varieties, the increase is greater. They are, as most cultivators know, when cultivated in pots, more hardy even than the others, the plants being exposed freely to heavy rains, which is beneficial rather than injurious to the foliage. We protect the show varieties from rain because of the smeared appearance rain gives to the powdered leaves. Alpines planted out in the borders and rock garden have grown, with us, very vigorously this season, perhaps the more because of the rich surface dressings applied to them in the spring months. These alpine varieties must not suffer from want of water during warm dry weather. The plants will become crowded with offsets, and these should be removed, so as to give the main crowns a better chance to develop.

CARNATIONS AND PICOTÉES.

I wrote at p. 752 of the last volume upon the treatment of seedling Carnations. Ours are now planted out where they are to flower next year, on deeply-worked and well-manured ground. The plants are doing very well where the maggots have not eaten the hearts out of them, but this year we have great difficulty to preserve the plants from this

pest; it is the larvæ of a blackish fly, *Hylemia nigrescens*, and it is, unfortunately, very widely spread now—and I know of no way in which we can preserve our valuable plants from its ravages except by watching the plants, and picking the maggots out with a penknife. The border varieties are early to flower this year, and the flowers are of very good quality. There are traces of thrips on some of the flowers, both in the border, and on the plants grown in pots; and although we have used every precaution to keep them clean, this lively little insect is very persistent in its attacks on the plants, and syringings twice daily, with frequent applications of tobacco-powder, have not altogether effaced them. They take the colour quite out of the petals in places, and cause the margin to decay.

Preparations must very soon be made for layering. The layers must be pegged down into sandy soil. I use for this purpose a mixture of equal parts loam, leaf-mould, and coarse sand; and, in preparing the layers, I find the work is expedited by using a thin-bladed two-edged knife, which is thrust through the stem of the layer immediately above a joint, cutting swiftly downward and outward. Cut the part of the layer off that is under the joint, and peg down at once into the prepared sandy soil. The stem must not be cut more than half through, and the layers should be made sufficiently firm to prevent their swaying in the wind; if the cut is made too deeply, they are also liable to snap off. All layers too high upon the stems should be put in as cuttings; they will form roots if kept under close hand-glasses, and shaded from bright sunshine. Fertilising to produce seedlings of merit should also be attended to. The florists have notions upon this subject which do not find favour with every admirer of the Carnation. Many ardent lovers of hardy garden flowers say they do not like the stripes and flakes of colour irregularly formed upon the petals, but they prefer selfs of rose, crimson, scarlet, yellow, &c. In that case, such varieties must be chosen as seed and pollen bearers, although we get truly handsome selfs from the Picotées and flaked Carnations. Much disappointment is caused by amateurs fancying that out of a packet of seeds, a lot of fine double flowers is to be produced; but the chance of getting varieties superior to any yet in cultivation is very remote in such cases, but there is a chance to get good varieties if care is taken to fertilise only the best of one's own plants of the different classes of flowers. The pollen is to be sought for, and will be found attached to a slender filament amongst the petals. The stigma which projects from the centre of the flower is very prominent, and resembles a pair of horns. The pollen should be collected with a small brush, and applied to the slender hairs attached to the style. If the pollen be moist and sticky, as it sometimes will be, it is worthless. It can only be used with proper effect when it is in a state of a fine dry yellow powder. If the application of the pollen is followed by the speedy fading of the flowers, it is proof that it is effectual; and should fading not take place within two days, the bloom should again be touched with the pollen.

THE BORDER PINK.

I wrote pretty fully upon the propagation and culture of this flower at p. 752 of the last volume. The raising of seedlings was not alluded to, but that is a part of the culture of Pinks which requires considerable attention. The pink is altogether a hardy garden flower, and a beautiful one, and the laced Pinks are as well adapted for border as for pot culture. Indeed, they do not produce regular lacing if grown in flower-pots and placed under glass to open; under these conditions the lacings sometimes disappear altogether. See that the propagation of Pinks from pipings is seen to at once without delay, if not already done.

What are termed forcing Pinks are altogether different from the laced varieties in the treatment they require. I advised the cuttings to be put in as early as March, and that the young plants produced from them should be planted out in the open ground as soon as they are large enough. We keep the

ground quite clear of weeds by using the Dutch hoe as often as necessary between the rows.

PANSIES AND VIOLAS.

Cuttings should be put in at the first favourable opportunity, in order that good strong plants may be obtained for flowering early next year. They are sometimes thickly covered with a species of aphid of a reddish tint, to destroy which the cuttings should be dipped in soft-soapy water, to which a little tobacco liquor has been added. When the cuttings have laid in this mixture for half an hour, wash off the insects with clean water, and stick the cuttings out in a shady sheltered corner that is not overshadowed with trees. The small slender growths produced at this season from the centre of the plants, if pulled out by the hand with some few roots attached, are the best; but Pansy cuttings soon form roots, even when none is attached to them. *J. Douglas.*

A TRAVELLER'S NOTES.

(Continued from p. 12.)

LAHORE.—The town of Lahore—a large station, being the capital of the Punjab—the seat of the Lieutenant-Governor, Secretariat, &c., and other government officials, has a large European population. There are a few fine modern buildings, but the native portion of the town is dirty and uninteresting. Meera Meer—a large military centre—one of the most unhealthy in India, and that most dreaded, I am told, by the British soldier, is situated but three miles off. The most interesting places in and around Lahore are the Kalimar Gardens (the abode of love), the mausoleum of the Emperor Jahangir at Shah Darrah—the Jumma Masjid—and the fort, containing a fine armoury and some ancient buildings.

The Kalimar Gardens, some 6 miles out of Lahore, consist almost entirely of groves of Oranges and Mangos—chiefly the latter. They are let for a fixed sum by the Government to a native whose father rendered some service during the mutiny, and he makes what he can of the fruit. The Mangos probably do well here, as they are sheltered and looked after, otherwise they will not do so far north. They have quite disappeared from the ordinary landscape, which is singularly uninteresting.

The Agri-Horticultural Gardens at Lahore are worth seeing; they are 169 acres in extent, and maintained by Government for exactly the same reason, and on the same principles, as Saharanpur. These two places are, in reality, large nurseries, where plants, seeds, &c., are sold, and experiments carried on. The gardens at Lahore are in charge of Mr. Hein, a Dutchman, who has been twenty-five years in India, and which he expects never to leave. Near the centre of the garden are two halls, the Montgomery and the Lawrence—named after former Lieutenant-Governors—now used for dances and as a library. The main roads leading from several gates converge on these halls. In front of the entrance to the Montgomery Hall is a small bandstand on a circular plot of grass, the chief interest lying in the small beds which contain Crozy's best and finest Cannas, obtained direct from him. Great hedges are abundant, and nearly always consist of the yellow-berried Duranta, so often referred to; in some cases they are 8 to 10 feet high, forming thick and useful shelters. Mr. Hein has many hundreds of Chrysanthemums in pots; they usually begin to flower in November, but many scores of varieties are still to be seen. Mr. Hein has obtained seed from most European firms, but finds his own much better (as common a weakness in India as in England).

Near one boundary is a plantation of *Populus nigra* and *euphratica*, kept for supplying the hills and still colder districts. At Lahore they seldom live to attain more than 18 feet. Roses are fine; great beds are kept for cut flowers, and for obtaining cuttings for sale purposes. Between two such beds, a narrow path, lined on each side with rows of Vines, attracted my notice; they are all different varieties, and include Muscat, Frontignan, and Black Prince. They ripen well, but, with the exception of the latter, all come in together; Black Prince, however, continues in good condition, coming in first and going out last—Mr. Hein considering it the best he has. The fruit usually ripens in July. Mr. Hein tells me some of the English Peaches are good, such as Wellington and Royal George, which ripen about June; but the late ones, Barrington, Bellegarde, &c., are worthless. Inarched Mangos grow if carefully protected when young during the cold season; one or

two are wild in the garden, but they must have received protection, naturally or otherwise, or they would never have attained the size they have. It is by no means the common tree it is around Baroda, and further south generally. A few Plantains thrive, but not the best varieties—even the ordinary ones do not fruit regularly; as their fruiting season is during the cold weather, it is not difficult to understand this.

One, if not the chief, feature in this garden is a large plantation of numerous varieties of Limes, Pomeles, and in particular Oranges—the collection especially of the latter is large—we tasted many and found great variety in flavour; it was a splendid sight, the Orange trees being literally weighed down with fruit. The Pomeles—a huge fruit, with large Bean-shaped seeds, and flesh much resembling a coarse Orange—were better than I had ever tasted them, and most refreshing. The flesh of the different varieties varies in colour from pale pink to dark carmine. A cartload of common Limes is worth but 4d., but the Oranges obtain a good price. These are usually propagated by inarching, the operation being performed in March just before the rains, when the sap is up.

The vegetable garden is large, and of considerable importance from the salesman's point of view; all kinds do well, and country-saved seed is found to be thoroughly good, but nevertheless a fresh strain from home from time to time is obtained.

There are some fine individual specimen trees; *Dalbergia Sissoo* is common in the garden, as are large and graceful trees of *Casuarina muricata*. This is a common tree round Lahore, many roads being lined on either side with fine specimens. The *Dalbergia* wood is found to be the best, next to Mahogany, in the district for furniture. The Mahogany itself will not do so far north. Other good trees are *Acacia stipulata*, whilst *Cassias* with long brown seed-pods are most numerous. A fine-foliaged tree is *Terminalia bellerica*, with large ovate leaves and reddish midrib, as well as *Aleurites moluccana*, the American Candle-nut tree, the seeds of which, hard as a nut, and somewhat resembling a Mango, are full of oil, especially beneath the outer rind; the natives remove this, and roast the interior for eating. The leaves of this tree are most handsome, often 1 foot wide, and the exact shape of those of *Acer Pseudo-Platanus*. It is rather too cold at Lahore for *Poinciana regia*, so fine at Bombay; but a nice tree or two are about—one in particular in front of the Montgomery Hall. *Pinus longifolia*—of which there is a nice row near the Halle—flourishes and forms handsome trees, often 60 feet high. Not far distant from this are two splendid specimens of *Eucalyptus globulus*, both over 100 feet high. *Neem* (*Azadirachta indica*), will not thrive in the gardens, it being rather too wet—but in the camp at Meeran Meer—3 miles away—they are found. This tree—next to the Babool, *Acacia arabica*, is one of the commonest trees in North India.

Bougainvillea speciosa and *lateritia* are fine here. *B. glabra* I did not see much of—the first two named are well sheltered under straw mats in the cold season; in one part of the garden a particularly fine piece of *B. lateritia*, some 10 feet high, and nearly as much through, is literally covered with flowers under its straw protection. I have never seen one so fine anywhere. *Calliandra hamitoxylon* is a pretty flowering shrub; in the Jeypore Park I saw a particularly fine plant; it only differs in flower from *Metrosideros floribunda* in having round heads instead of long racemes—in colour the two are almost identical—the foliage is small and pinnate, drooping at night, when the pinnæ close, as in *Mimosa*. *Calamus Royleana* and *C. Roxburghii* are both represented, though small, being scarcely more than 6 feet high—they have not yet been long in the garden, but it is not likely they will grow with the luxuriance they do at Saharanpur. *Acalyphas*, *Crotons*, *Dieffenbachias*, and all that class of plant, will not live outside in the cold weather, and *Dracænas* lose their colour and get shabby—accommodation for such is provided in a long, low grass-roofed house. *Grevillea robusta* is good, as is also *Cupressus sempervirens*, some specimens of which, standing tall, erect, and solitary, are 30 feet high. A native of Australia, *Brachychiton populneum*, with small acuminate, Poplar-like foliage, forms a graceful pyramidal tree, from 60 to 70 feet high. The best Palm is in itself really a fine specimen of *Sabal columnaris*, about 20 feet high, with large broad leaves almost bending to the ground; it is a fine sight. The plant is said to be twenty-five years old. *Oxalis rosea*, *alba*, and *variabilis rubra*, are prettily cultivated in pots, and flower profusely.

Mr. Hein tells me he has a white *Thunbergia lauri-*

folia obtained in this wise:—A blue one seeded freely, the seeds germinating, and eventually flowering all round the mother-plant, everyone bore white flowers. Unfortunately, next year a big tree fell on the parent plant, killing it; the white-flowered seedlings, however, lived, and Mr. Hein tells me he has distributed them throughout India. *Ficus elastica* grows, and makes fair-sized trees; but, after Ceylon, or even further south in India, it is not a very impressive object.

Mr. Hein pointed out to me a tree which he considers makes more wood than any other in the garden; the quantity formed is certainly surprising. The tree branches most freely, and hence its value, apart from ornamental purposes, which is considerable. The tree is *Pistacia integerrima*, a native of the Hill districts; the foliage is pinnate, with acuminate pinnæ.

There is a great difference in the class of trees growing at Lahore, and even at Saharanpur. Many that are common at Bombay, and even at Baroda, are unrepresented further north.

The further north one goes, the less interesting and the less varied becomes the vegetation in the parks and gardens. The vegetation of the open country would hardly exist were it not for the Babools; and at Delhi were it not for the Nim trees, there would be scarcely any at all. By travelling at night through India one loses nothing. When I have been forced to go by day I have found it is most uninteresting and wearisome; for miles nothing is noticeable but Babools on a sandy dried-up plain. Here and there a few acres are under cultivation, a mud village not being far off, whilst dry watercourses (often as broad, and I have seen some broader, as the Thames at Westminster Bridge) are occasionally crossed by low bridges. The difference from Ceylon, with its luxuriant rampant vegetation literally on all sides, is most marked.

DELHI.—The old city is most interesting; one passes in reality through the remains of seven cities, all now remaining being heaps of stones, old mosques, and tombs. One can readily believe when the old kings reigned here the area covered by buildings was as large as London is at the present day. At Lalkot, one of these cities, the most curious thing, and probably the finest in India, next to the Taj, is to be seen. It is a pillar known as the Kitub Minar, 212 feet high, the top being reached by 378 steps; it tapers from a diameter of 50 feet at the base to 9 feet at the top; it is built of red sandstone; the exterior is all semicircular and rectangular convex flutings. It was erected 650 years ago, but the huge letters of the Koran, with which it is encrusted, stand out as fresh as ever. It was a tower of victory, and it certainly soars above everything for miles round; from Delhi, 11 miles distant, it is distinctly visible. *James H. Veitch.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

WINTER-FLOWERING STOVE PLANTS.—*Thyracanthus rutilans*, plants which have been cut back, may, when they have started well into growth, be repotted, using pots not larger than 10 inches in diameter. Young plants, that is, those which were struck from cuttings in the past spring, will have ample space in 7-inch pots. A good compost for this plant consists of loam three parts, and one each of leaf-soil and decayed manure, with sand in proportion. It is not advisable to stop the shoots too often, or the plants will not attain the desirable bush form.

SCUTELLARIA MOCCINIANA.—The plants which were struck from cuttings in the past spring, as soon as they are sufficiently rooted, should be repotted in 6 or 7-inch pots, making use of a compost identical with that given above. A week or longer after potting, the points of the leading shoots ought to be pinched out, so that lateral growths may push, repeating the pinching when the resulting shoots have made four leaves; which amount of stopping will generally be found sufficient, two or three shoots starting from each one that is stopped. *Scutellaria mocciniana* should thrive well under ordinary stove treatment.

SERICOGRAPHIS GHIESBRECHTII.—This being a plant that attains only moderate dimensions, 7 or 8-inch pots will be large enough for all the young plants; but those which flowered last year, and were cut back afterwards, may, after they have broken,

and the shoots are about 1 inch long, be shaken out, and repotted in pots smaller than those that they bloomed in, a larger shift being afforded at a later date. Supposing that the shoots have been stopped once, and that a little growth is made after the first repotting, the points may be stopped once more, which will generally be found sufficient. As the flower of this plant is of somewhat thin texture at the best, it is essential that the plant should be grown in as light a position as possible, the thorough ripening of the wood being a great point in obtaining flowers of the greatest substance.

HERBACEOUS CALCEOLARIAS.—Seeds of the above should be sown at once. Sow the seeds thinly, as if the seedlings are allowed to become too crowded in the seed-pans, they become weakly before they are large enough to prick off. Finely-sifted loam should be used for the seed-pans, making it light with a sufficient quantity of silver-sand and leaf mould.

POTTING STOVE PLANTS STRUCK IN THE SPRING.—The plants which were struck in the spring-time from cuttings should be potted on without delay, and encouraged to grow quickly, viz., *Bougainvilleas*, *Allamandas*, *Pandanus*, *Francisæas*, *Crotons*, and *Ixoras*. The essential points in the culture of all of these plants are, to employ good potting composts and afford sufficient pot-room, so as not to cramp the roots from the first. A grave mistake often made is to starve them in the cutting-pots, from which they seldom quite recover. Let the pots be clean and dry before using them, and the various composts got in readiness before commencing operations, as it is on the proper attention being given to these small details that success in great measure will depend.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

STRAWBERRY PLANTS for pot culture should now be ready for their shift into 6-inch pots, and where this is the case, the work should be done at once. The soil I prefer is a mixture of strong turfy loam, leaf-mould, spent Mushroom-bed, and a quantity of wood-ash. In potting, make the soil firm with a rammer, and afterwards stand the pots on boards in a sunny position, and give a good watering to settle the soil round the roots. When runners make their appearance, cut them off, and afford liberal supplies of superphosphate when the roots of the plants have reached the sides of the pots, and later on nitrogenous manures may be used. If the weather be favourable to ripening of the crowns, a dewing over with the syringe on the afternoons of bright days will prove an aid to growth and a check to red spider.

FIGS grown on back walls of late vinerias and Peach-houses should now have their shoots stopped, if in a vigorous state of health; this check will tend to the early ripening of their wood, and although heavy crops cannot be expected from plants in such positions, yet a nice gathering of fairly good fruit may be obtained the following year, when this item in their management is attended to. The stopping of growth in houses entirely devoted to Fig culture should now be discontinued, except in the case of strong and unfruitful wood, when another pinch will be a benefit in the direction of their fertility. Feed with an unsparing hand all trees bearing well, but avoid using nitrate of soda and superphosphate together.

PINES.—Throw out all plants from which the fruit has been cut, unless they are bearing suckers that will be required in autumn, and fill up the vacancies from the succession-house. Give plants in fruit a little kainit at every watering. It may either be mixed with the water, when it will be most evenly distributed, or sown on the top of the soil and washed in. In either case, the quantity applied may be augmented weekly until the fruits are ripe.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

SUBTROPICAL BEDDERS.—These consisting, for the most part, of plants raised from seed, and which grow with rapidity, should be kept in an uniformly moist state as far as the soil is concerned. The frost which we had about the middle of the last month slightly injured the young leaves of *Cannas* and a few other subjects, but they have since that date made great progress, and the damaged portion of the leaves having been removed, they now show no signs

of the injuries. *Ricinus* experienced no check, and the plants are developing large leaves, which range in colour from dark green to rich bronze, and show off to advantage above a groundwork of blue and yellow *Violas*. Tall-growing plants, which are liable to be injured by wind, should be made secure from time to time to stout stakes, doing this in such a way so as not to spoil the natural habits of the various plants, or make the stakes, &c., too prominent. With a view to developing compactness of growth and diversity of form, pinch the points of the leading shoots of a portion of such plants as *Cannabis gigantea*, *Acacia lophanta*, *Abutilon*, *Eucalyptus citriodora*, *Grevillea robusta*, and *Gunnera scabra*.

ROSES.—These, notwithstanding the exceptionally dry and untoward character of the weather experienced during the months of April, May, and June, have been, and are still (hereabouts, at all events,) very satisfactory, the blooms being of good size, solid, and generally well formed, and the foliage rich and clean, this being the case not only with trees growing in mulched beds, but in the case of standards growing in borders in the kitchen garden, land that is cropped with Lettuces beneath them. All the cultural attention required by the Rose at the present time is to remove spent blooms at short intervals, and rub off and pull up all the Briar shoot suckers as soon as they appear, and where the soil is light, to give an occasional good watering at the roots.

CLIMBERS.—Make secure the young shoots of every description of climbers, cutting out, wherever opportunity permits of it being done, some of the old shoots to make space for young ones, and tying the shoots in such a manner as to avoid formality. The shoots, where likely to get crowded, should be thinned-out and not stopped. To the stopping of the shoots of climbers generally are due many, if not all, of the failures to flower these plants, which are recorded from time to time; when the young shoots are stopped, lateral growths in plenty instead of flowers are produced. In tying plants, especially those that are fast growers, leave sufficient room in the ties for the shoots to grow without being restricted. Knowing by experience that this simple though necessary provision for the welfare of the plants is sometimes overlooked to the injury of the plants, I mention it here as a reminder.

RESERVE GARDEN.—In the anxiety to produce a good summer effect in the flower beds and borders, the subjects which are to take the place of the summer bedders next October should not be forgotten; the land they are planted out in should be kept clean, and the plants watered at the roots when water is needed. Remove forthwith any stray plants or spurious varieties from the beds of *Pansies*, &c., as soon as the mischance is observed.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

TOMATOS.—The plants of the Tomato planted at the foot of warm walls will have got established, and if strong when they were set out, a quantity of fruit will have set. A good fertiliser, cow-stable manure-water, or some artificial manure, and a mulch of rich manure may be safely applied now. When the root-run of the Tomato is restricted, the plant makes less leaf-growth than in unrestricted borders, and manures may be applied with safety. The lateral shoots should be pinched back when they can be got hold of, and the stem or stems secured to the wall.

VEGETABLE MARROWS.—If seeds of Vegetable Marrows were sown late, as was advised in a former Calendar by me, there will be some good plants to succeed those whose crop will soon be passing over. Any early Vegetable Marrows, with a good set of fruit upon them, will require plenty of water, and abundant feeding with manure-water. The leading shoots should have the points pinched out, and all fruits cut as soon as these are of a fair size, it being a mistake to allow the seeds to develop much, and small fruits are nicer than large ones; moreover, the yield is much greater.

RIDGE CUCUMBERS require, like the above, plenty of water, and feeding at the roots, top-dressing them and stopping the shoots; also syringing or sprinkling in the afternoon when the weather is bright and warm.

CAPSICUMS require similar treatment to these, when a good set of pods is secured; reducing the number of the latter if large ones are desired.

MUSHROOMS.—If material is available, it should now be prepared, and beds made in a cellar or a cool shed; and, although equally good Mushrooms may be gathered from beds in the open even when only a small quantity is required, but the beds being small do not retain their heat and moisture in the open air for so long a time as is the case with small beds made under cover. Besides, after this date there is more certainty of a crop from the latter that will carry on the supply till the large or autumn beds come into bearing. It is well to get a good quantity of material together in readiness for the autumn Mushroom-beds.

SALADS.—It is advisable to make now a large sowing of Lettuces for autumn supply, sowing on land well enriched with decayed manure to ensure quick growth and good-sized plants. Sow the seeds in drills, this being the most economical method for keeping the ground clean. The thinnings may be transplanted.

A large quantity of Endive seed should be sown for late use, the plants raised from this being more likely to be useful than earlier sowing. The same remarks apply to Endive as to Lettuce. If salads are in general request, a bed of Corn salad, sown at this season, will be of use. It is a plant that is readily grown, and which lasts for a long time fit for use if not allowed to get dry at the root. The broad-leaved Italian variety is the best. The Radish should find a place in the sowings made at this season, sowing the China Rose, a nice variety, one of the best for early autumn, and a good keeper. For winter use the black Spanish, a very hardy Radish, may be sown. The roots may be stored in moist soil or sand, similar to Turnips; and they may also be kept in the open ground during the winter, if protected by means of litter. Mustard and Cress should be sown as often as required.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

MASDEVALLIAS.—*Masdevallias* *Harryana*, *igneae*, *Veitchii*, and other strong-growing varieties, are usually grown in pots, and they thrive in them if the pots are small in proportion to the size of the plants, but if over-potted they never grow well. *Masdevallias*, when they are thriving, usually form one thick self-supporting mass, that holds firmly together when the compost is shaken from the roots; but should this not be the case, it may be rectified when repotting them, by holding the separate pieces which forms the plant close together in the centre of the pot, at the same time spreading the roots out evenly, and filling in rather firmly with the potting compost, taking care not to injure the roots by so doing. If after having done this, any portion of the plant is loose, it should be supported by neat sticks until it has put forth roots, when it will be able to stand alone. After repotting, carefully water the plants. *Masdevallias* should never be allowed to get very dry at the root, nor, on the other hand, afforded water in excessive quantities, the leaves being apt to drop off from either extreme. The species which belong to this remarkable and interesting genus are numerous, and a large proportion of them succeed best when suspended in small baskets or earthen pans. The *Chimara* group of *Masdevallias* should be grown in shallow Teak-wood baskets; these, together with *M. tovarensis* and *M. trochilus*, are in reality Orchids of the intermediate-house, the air of the cool-house causing their foliage to drop off or become covered with black spots. Some very interesting small-growing Orchids, which grow well with the bulk of the *Masdevallias*, are *Restrepia antennifera*, *R. elegans*, and *Nanodes Medusæ*, the last-named a plant not often seen in good condition.

MILTONIA VEXILLARIA.—These plants, after making a great display, are now passing out of bloom, and may be repotted—and the sooner the better—as they are plants which require no period of rest, but they immediately commence to send forth new growths and roots. Before repotting them, they should be thoroughly cleaned and freed from thrips, that may be lurking in the axils of the leaves. The compost used should consist of equal parts of peat, broken up into small pieces, and chopped sphagnum moss, well mixed together; the pots should be one-half filled with drainage, all old materials removed from about the roots, and the plants potted rather firmly, and only slightly raised above the rim of the

pot (if raised up high above the rim, the chances are that the young roots will be unable to take a firm grip of the compost, as so much handling is necessary during the year to keep down thrips, and however carefully done, the plants are more or less shaken). The application of liquid-manure may now be discontinued for a space of time. *M. v. rubella* is a small-flowered variety that is much later, and makes a show of bloom when the others are over, and is therefore useful. *Odontoglossum Schlieperianum* is in bloom, making a pretty show; it is somewhat like *O. grande*, but not so grand, and, unlike the last-named species, it flowers before leaf-growth commences.

THUNIAS.—These have flowered well with us this year, but there are always a large number of growths on the plant which fail to carry any flowers; they should not be rested yet, but placed in an airy part of the Mexican-house, and watered and syringed as usual.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

SEASONABLE PRUNING.—This needful operation should now receive attention from the careful cultivator, and the pyramid, bush, fan, or horizontally trained, should have the useless shoots shortened to within four buds of their base, all leaders being neatly trained and secured, whilst the wood is pliable. Pyramid trees should have a piece of lath or a straight stick fastened to the main stem, and the leader tied to it; and those trees that are horizontally trained to wires should be tied securely, but not tightly. Any ties that are noticed to be injuring the bark should be replaced. Pears are usually trained horizontally or as single or double cordons, obliquely or horizontally, and it is particularly important that the leading shoots of trees that are not full grown should be secured before they get broken off by wind.

Cordons which are on the Quince stock, and whose roots, therefore, are at or near the surface, should be mulched with rotted manure, and have the breastwood cut back and the fruits freely thinned if too many, watering the plants copiously with manure-water. Apples which are intended for exhibition should be freely thinned, and have the shoots stopped and the soil over the roots mulched, &c. In orchards, *Blenheim Pippin* is this season carrying the best crops, and its foliage is healthy. Keep the hoe going in all cultivated plantations, so that the weeds do not go to seed.

FIGS.—Where the shoots have been thinned and properly regulated, little more will be required for the present; but if this work has been unavoidably delayed, no time should be lost in getting it finished. The shoots should be thinly trained, and any weak ones when the fruit is gathered should have the points pinched out, and all sappy sprays that are not wanted, or that will not ripen, should be cut out. Syringe the foliage occasionally, and water the roots with liquid manure if they are in restricted borders.

GRAFTS have this season taken well, and attention should be given to securing them against the wind, and all shoots which have started vigorously should be pinched at the points, at about 12 inches in length, and the main stems relieved of most of the growths that may have started. Attend to the budding of Cherries, Apricots, Peaches, Plums, Apples, Pears, &c., as soon as the buds are in a fit state; and as the buds of the previous year advance in growth, support them by tying them to the snag above the bud. In budding, take great care the wood from which the buds are to be taken is kept thoroughly moist, for if once it gets shrivelled, results will be poor. Those which do not take may be grafted in the spring.

AZALEA ROSÆFLORA.—What is the history of this plant? and is the single form known? It has survived the last four or five winters without injury and without protection, except what is afforded by the partially overhanging branches of a plant of *Rhododendron Falconeri*. Its very dwarf procumbent habit and beautiful double salmon-pink flowers make it a very attractive little shrub. I also enquired as to the probable cause of the blistering in the Walnut leaves sent. I am strongly inclined to think it has been caused by a gale of wind while the leaves were still soft. *Alfred O. Walker*.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY,	JULY 18—	Nuneaton Horticultural.
TUESDAY,	JULY 19	{ Birmingham Rose (two days). Tibshelf Rose.
WEDNESDAY,	JULY 20	{ Christleton Ro-e. Liverpool Horticultural (two days).
THURSDAY,	JULY 21	{ Trentham Horticultural and Rose. Horticultural at Worksop, Highgate, Barnet, and Aylesbury.
FRIDAY,	JULY 21—	Ulverston Rose.
SATURDAY,	JULY 23	{ Bedale Rose and Horticultural. Manchester Rose and Pink. Midlothian Rose and Pansy.

MEETING.

SATURDAY, JULY 23—Royal Botanic Society.

SALES.

THURSDAY,	JULY 21	{ Clearance Sale of Greenhouse Plants, at the Nursery, Castle Hill, Lower Norwood, by Pro- theroe & Morris.
FRIDAY,	JULY 22	{ Orchids from Mr. F. Sander, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°·4.

Food
Requirements
of the Vine.

In a recent communication to the Academy of Sciences, M. A. MUNTZ points out how, in the case of the French vineyards, the regular application of manure has become a necessity, owing to the diminished yield and impaired quality in consequence of disease and parasitical attacks of various kinds. This being the case, says M. MUNTZ, the manuring of the Vine has to be carried out in accordance with the positive knowledge possessed as to the nutrition of plants.

A knowledge of the requirements of the Vine, that is to say, of the average quantity of fertilising substances that it takes up in the course of its development and in the production of Grapes, should serve as the foundation for the rational application of manures. It will surprise some of our readers to learn, that even in a country so largely dependent on the Vine as France, this knowledge is, with a few exceptions, not available. In France, then, as in this country, growers have been satisfied with empirical mixtures, and, so far at least as this country is concerned, we have had hitherto no reason to complain of the results. But when we consider the cost of production, as the French have to do, and as we shall have to do very shortly much more than we do now, the manurial question will come to the front. No doubt farmyard manure under certain conditions is excellent, and many of the chemical and other fertilisers advertised are, as we know from the analyses we had made of them, and from the practical results obtained, well adapted for their purpose. Still, they are generally very expensive, and, now that our home growers have to compete with growers in other countries with a better, i.e., a less

expensive climate, and a smaller wages-sheet, it behoves them to lessen the cost of production so far as they can consistently do so compatibly with the maintenance of the quantity or quality, or both, of the crop. It is just in such cases as these that the benefit of intelligent as contrasted with purely empirical cultivation comes in. Constant practice and sound tradition have in this country developed Vine culture under glass to the highest point yet attained in any country; and if the world would only stand still, and present conditions remain permanent, there would be little reason to change. But the French have found out very acutely that conditions do change, and that the purely empirical system of cultivation, excellent as its results were, is no longer adequate to meet new circumstances. The same thing is happening here.

leaves, tendrils, Grape-skins, &c., but we may give his totals. He finds that the quantities of fertilising materials represented in kilogrammes, absorbed, per hectare of Vines (say 2½ acres) are as follows:—

48·299 of nitrogen.
13·427 of phosphoric acid.
37·322 of potash.
103·639 of lime.
22·037 of magnesia.

A kilogramme is the equivalent of 2·2 lb.

The quantity of nitrogen contained in the entire yield of a hectare of Vines is represented by 300 kilogrammes of nitrate of soda. The corresponding quantity of phosphoric acid is represented by 100 kilos. of superphosphate, and that of potash by 75 to 80 kilos. of sulphate or chloride of potassium. To supply an equal



FIG. 11.—AMERICAN WONDER PEA: ONE-THIRD SIZE; PODS REAL SIZE. (SEE P. 73)

Foreign and colonial competition will inevitably tell upon the home producer, and compel him either to adjust his practice to new conditions, or to give up the contest. If he elect to go on, he will find the old empiricism, excellent as it was in its way, not adequate under the new circumstances. He must remodel it by availing himself of the resources science has placed at his disposition, and if he use them properly, he may confidently expect to save materially in labour, and in the cost of production. This brings us back to M. MUNTZ's article. This chemist tells us that the composition of the fertilisers recommended to the cultivators of the Vine are, generally speaking, not based upon any exact knowledge of the requirements of the plant, and he has endeavoured to supply the deficiency. He recognises that the conditions and requirements vary so much in different localities that no rule can be laid down as absolute; but making due allowance for variation, the principles are applicable in all cases. We cannot cite all M. MUNTZ's figures relating to the different proportions found in the various parts of the Vine-

amount of nutrient matters, 10,000 kilogrammes of farmyard manure would be required annually. These estimates are calculated on the assumption that all the produce is removed, but in practice some of the leaves remain on the land, or are thrown on the rubbish-heap, to be afterwards restored to the soil in some shape or another. The wine, the whole of which is consumed off the land, removes only very small relative quantities of nitrogen, phosphoric acid, and potash. The nutrient materials are specially concentrated in the leaves. In manuring the Vine we are feeding the foliage, whose business it is to manufacture the sugar which exists so largely in the Grapes. The proportion of nitrogen which the Vine requires to attain its full development is rather large; hence the necessity for the liberal employment of nitrogenous manures. The proportion of potash, on the other hand, is smaller than is generally supposed.

But after all, the chemical side of the question is by no means all that has to be taken into consideration. Were it otherwise, plant-growing would be a mere "penny in the slot business,"

buy your pinch of manure, apply it, and avail yourself of the finished product in due season. As it is, the water supply, the amount of sunlight and of sun-heat are of equal importance. Under glass the water and the heat can be regulated, and some day or other the electric light will be available for forcing purposes.

But granted the fulfilment of all these requirements, the skill and labour of the practical gardener will still be required to adjust and control them. The practical man will be as essential as ever, only he must know how to combine the experience of labourers in other but cognate fields of work with that of his own.

of the same colour. The thick cylindric spadix is about the same length as the spathe, to which it is adherent at the base; female flowers relatively few, with a four-parted perianth and a four-celled ovary, each cell with a single erect ovule; the male flowers are placed above the females, and occupy the whole of the upper three-fourths of the spadix. Each flower consists of three to five inseparate stamens, with no investing perianth. The plant is a native of Tucuman. Kew.

Disa incarnata, t. 7243.—A species described and figured in our columns (vol. xi., p. 619). The coloured plate shows the flowers of a more orange colour than in the specimen we saw. Introduced from Madagascar by Messrs. LEWIS & Co., of Southgate.

marshy ground by M. Delavay, and subsequently on the hills of the Shan States, Eastern Burma, by General Collett. Presented to Kew by M. H. de Vilmorin.

GARDENERS' ORPHAN FUND.—The sum of £8 6s. was obtained at the recent Croydon Horticultural Exhibition from the sale of Roses, and the amount handed over to the Gardeners' Orphan Fund. We trust this excellent method of adding to the funds of this admirable Institution, may be largely adopted under similar circumstances.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The quarterly meeting of the above was held on Monday evening last at the Caledonian Hotel, Adelphi, Mr. JOSEPH WHEELER in the chair. One new member was elected, making the number of those who have joined in the two quarters of 1892, thirty-seven. Sickness among the members has been light during the quarter, only two being on the funds at the present time. The annual dinner will take place in the last week in September, due notice of which will be given. It is proposed to present the Treasurer, Mr. JAMES HUDSON, with a testimonial on the occasion for his valuable services during the past ten years.

BORDEAUX MIXTURE.—Last season, it will be remembered, some of the trials made with this liquid for the treatment of the Potato mildew were not so successful as previous experiments had led us to expect they would be. Two special reasons for this occur to us, one that the mixture was not properly made, the other that the copper deposit was washed off the leaves. M. GIRARD, to whom we owe so much of our knowledge of this subject, has investigated this last matter, and finds considerable difference in the various solutions as to their power of adhering to the foliage. To prevent the copper oxide from being washed off, M. GIRARD counsels the use of:—Sulphate of copper 2 kilos, dissolved in one wooden tub; quicklime 2 kilos, dissolved in another tub; mix the two solutions, adding water sufficient to make 100 litres, and 2 kilos. of treacle, a kilo. = 2½ lbs.; 100 litres = 22 gallons.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL ASSOCIATION.—The Hon. Sec., Mr. MARK LONGHURST, informs us that the Show of the Brighton and Sussex New Horticultural and Mutual Improvement Society, will be held as arranged on August 30 and 31; and, the Brighton and Hove Chrysanthemum Show, November 1 and 2, and not on the dates previously advertised, having been altered.

ST. PETERSBURG BOTANIC GARDEN.—We are requested to state that Dr. A. F. BATALINE has been appointed Director of the Garden in place of the late E. VON REGEL, and that all communications should be addressed to the Director, Imperial Botanic Garden, St. Petersburg.

DUBLIN ROSE SHOW.—On Thursday, July 7, the annual Rose Show of the Royal Horticultural Society took place in Lord Iveagh's grounds, and was in many respects a very successful event of its kind. The weather was fortunately beautifully fine, and the grounds never looked so beautiful. Amongst amateur exhibitors the winner of the highest prize for twenty-four cut blooms, distinct, was D. M. Wilson, Esq., Windsor, Monkstown; the winner for twelve, J. G. Nutting, Esq., Gortmore, Dundrum. The winner (a 2nd) for twenty-four Noisette or Tea Roses was S. B. Quinn, Esq., Shannon Lawn, Limerick. Mr. Nutting also took the 1st prize for twelve dark Roses, Mr. Wilson for light, and Mr. Quinn for yellow ones. Special prizes—The Challenge Plate, value £24, presented by the Horticultural Seed Trade of Dublin, and offered for the best stand of thirty-six Roses, in not less than eighteen varieties, was won by Mr. D. M. Wilson. For a stand of forty-eight, in twelve chestnut varieties, Messrs. A. Dickson & Son were 1st. A Challenge Cup or Piece of Plate (offered by Hamilton Drummond, Esq., open to amateurs only,



FIG 12.—CROSS-BRED PEA: ONE-THIRD REAL SIZE; PODS REAL SIZE. (SEE P. 73.)

PRICE OF GRAPES.—Mr. BLACKMORE writes:—"It may gratify the advocates of English fruit-growing to know, that good black English Grapes are now selling at 6d. per lb. in Covent Garden Market, and Strawberries at 1½d., punnet included! These are my last returns.

BOTANICAL MAGAZINE.—The plants figured in the July number are:—

Symandrospadix vermitoxicus, t. 7242. The botanist who conferred such an appellation upon so handsome a plant ought to be condemned to write it on a tally a few hundred times in succession. Next time he would probably select a shorter if less expressive name. The plant is a "noble" tuberous-rooted Aroid, with stalked hastate leaves, produced with the spadix. The spathe is stalked, boat-shaped, acuminate, widely spreading, rose-coloured, with darker stripes

Gyncura sarmentosa, t. 7244.—A climbing perennial of loose spreading habit, with purple stem, stalked, lanceolate, glabrous, remotely toothed leaves and cylindric heads of flowers disposed in loose cymes. It is a Composite with purple involucre bracts and yellow flowers. The plant is a native of the Malay peninsula and islands.

Masdevallia leontoglossa, t. 7245.—A species with short flower-stalks, bell-shaped flowers, 1½ inch long, dividing to below the centre into three lanceolate acuminate segments, greenish externally, rose-coloured, with darker spots on the same colour within. See *Gardeners' Chronicle*, 1881, vol. xv., p. 234.

Primula Forbesi, t. 7246.—An annual species, with long-stalked pilose leaves, and tall, slender flower-stems, bearing remote whorls of pale pink flowers. It is a native of Yunnan, where it was found in

value 21 guineas, with £5 added annually.—1st, Mrs. Robertson, of Gledawood, Dundrum; 2nd, Lord Ashtown, Woodlaun, county Galway. A special prize, for the best group of foliage and flowering plants, staged for effect in a space of 10 feet by 5 feet.—1st, Mr. J. G. Nutting, Gortmore, Dundrum; 2nd, Viscount Gough, St. Helens, Booterstown.

SCOTTISH HORTICULTURAL ASSOCIATION.—The monthly meeting of this Society was held on July 4, the chair being occupied by Mr. ROBERT MORRISON, one of the vice-presidents. On the conclusion of the formal business of the meeting, a paper by Mr. ALEX. HUTTON, Dundee, was read, the subject being the "Flora of Ceylon." The following were the exhibits:—From Mr. HENDERSON, Clermiston, blooms of a very fine seedling white Begonia Pearl, and Streptocarpus hybrids; Mr. CHAPMAN, Easter Duddingston Lodge, sent blooms of several herbaceous plants; and Mr. A. McMILLAN, Trinity Cottage, a plant of Japanese Chrysanthemum Puritan, in flower, the flower-stem being but 13 inches high; also fine blooms of Chrysanthemums Sunflower, Madame Lecroix, and Madame Desgranges, and a plant of Lilium giganteum.

SEWING MACHINES.—From Mr. ALLEN, Ave Maria Lane, we have received a pamphlet on the "Birth and Development of the Sewing Machine." Such a history should be of interest to every gardener's wife, who should receive with pleasure the news that the sewing machine of the near future is to be so constructed as to work either lock or chain stitch at will. The same machine executes also an embroidery stitch, which has much the same effect as chain stitch, but is worked with thread of two colours. It is indeed, more like a fine braid than embroidery.

PEAR, BROCKWORTH PARK.—M. BURVENICH, and also M. BALTET, whose competence in such matters all will admit, say that this Pear, which was found growing against a wall at Brockworth Park, near Gloucester, and which was certificated by the Royal Horticultural Society in 1871, is synonymous with Bonne de Enée.

NEW GUINEA RHODODENDRONS.—We notice in *Engler's Botanische Jahrbücher*, vol. xvi., 1892, the description by Dr. O. WARBURG of several new species of Rhododendrons from the German portions of New Guinea; R. Zoelleri, in particular, seems a species for which our nurserymen and hybridists should be on the look out. The flowers are said to be golden-yellow, and of large dimensions. R. Herzogi is remarkable for its very long tubular flowers.

DR. SCHÜBELER.—The death of this distinguished botanist took place on the 20th ult. He was the Director of the Botanic Garden, Christiana, and well known for his publications on the Flora of Norway. Of these, his *Cultur Pflanzen Norwegens*, and his *Die Pflanzenvwelt Norwegens* are full of interesting details on the distribution of plants in Norway. An English version of one of these publications was published in 1862, under the title of *Synopsis of the Vegetable Products of Norway*.

"HISTOIRE DES PLANTES."—M. BAILLON's great work proceeds steadily. The last part contains monographs of Primulaceæ, Utriculariaceæ, Plombaginaceæ, Polygonaceæ, Juglandaceæ, and Loranthaceæ. We are under the impression that in the recent parts morphological details have not been attended to so fully as in the earlier portions. What will attract special attention in the present instalment, however, is the monograph of Loranthaceæ, which is made to include the Olacaceæ, Styracaceæ, Santalaceæ, Vitaceæ, and several other groups not usually associated with Loranthaceæ. Botanists will need to keep their minds open and receptive to grasp some of these arrangements.

STOCK-TAKING: JUNE.—The Board of Trade Returns for the past month have not a particularly inspiring appearance on the first survey; a heavy decrease in both branches of trade. Imports and exports are not calculated to do other than "give

pause" to all who month by month "take stock" of the nation's progress. But there may be compensations. The imports for June are less in value by £4,038,270 than they were in June of last year; but then the Whitsuntide holidays occurred in May, so that the comparison does not hold good to-day; and trade in the first six months of last year was not quite normal in condition. Besides, though values have declined, the fact is largely due to the fall in prices, wheat and cotton, &c., to wit. A look at the average of prices of Corn last week, and for the corresponding week in 1891, may be given in proof; though it is perhaps a remarkable fact, that, heavy as is the reduction in the price of Wheat, the baker's bill does not give the slightest evidence thereof; and as for Cotton, are not they laying out an immense area in Asiatic Russia for the cultivation of the plant? All the above should be taken into consideration whilst summing up, and a note may be made of the fact that the imports for the six months just ended show a gain of £358,558 over the values for the corresponding period last year. The following excerpts are from the "Summary" of the imports of foreign and colonial products for the month of June:—

IMPORTS.	1891.	1892.	Difference.
	£.	£.	£.
Total value for month	£36,850,124	£32,811,854	—4,038,270
§II.—(A.) Articles of food and drink—duty free ...	13,354,112	13,323,169	—30,952
(B.)—do., dutiable	1,873,006	1,421,963	—451,043
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	6,493,954	4,425,526	—2,068,428
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,963,939	3,685,785	—278,154
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,111,061	908,295	—202,766
(B.)—Parcel Post ...	44,987	35,214	—9,773

It is, perhaps, worth noting that the only item showing an increase is that of Tobacco! From the general figures we cull the following, relating to the imports of fruits and vegetables during last month:—

IMPORTS.	1891.	1892.	Difference.
Fruits:—			
Apples, raw ... bush.	64,034	71,672	+7,638
Cherries ... ..	...	115,918	+115,918
Plums ... ..	...	6,103	+6,103
Pears ... ..	...	23	+23
Grapes ... ..	...	3,398	+3,398
Unenumerated, ..	213,184	93,535	—119,629
Onions bush.	259,742	132,926	—126,816
Potatoes cwt.	898,058	794,081	—101,975
Vegetables, unenumerated, raw, ... value	£117,681	£110,369	—£7,312

We are laying out with the foreigner so immense a sum every month for articles of food, that this may not be an inopportune moment for stating that more than one-fifth of all Ireland is uncultivated; Connaught, its smallest province, containing 1½ millions of unreclaimed acres. The possibilities of food supplies from these acres when brought under agricultural domination are something enormous.

THE EXPORTS

show a decrease of £3,364,081 as compared with June in 1891—the loss in the six months being £12,205,250—there being but one trifling exception in the decrease column. This has not a healthy look about it, and is to be deplored; but then price has had to give way as well as volume—profit has had to suffer as well as the amount of labour remuneration. We may just note here that the exports of foreign and colonial produce continue to increase, which is on the side of our shipping interests. The mention of shipping re-

minds us that the gross tonnage of ships under construction in the United Kingdom—mercantile, we mean—is 778,462, including 165,183 tons for the colonies and foreign states; France, Germany, and the United States have building (premiums being paid the builders) only 81,028 tons of shipping. So it seems alarm has not reached our merchants and ship-builders under existing commercial conditions.

"DIE NATÜRLICHEN PFLANZENFAMILIEN."

The orders treated of in the last number of this publication are the Coriaceæ and Anacardiaceæ, by Professor ENGLER; the Buxaceæ, by Dr. FAX; and the Limnathaceæ, by Herr K. REICHE. The rapidity with which this publication appears is a compensation for the perplexing irregularity of the sequence. As the work proceeds, it becomes more and more a subject of regret that the diagnoses at least were not written in cosmopolitan Latin. Perhaps, when the work is completed, an appendix may be issued, giving a summary of the ordinal and generic characters in Latin.

THE OXFORD CARNATION AND PICOTEE UNION.

The annual exhibition of this Society is now definitely fixed to take place in Mr. DODWELL's garden, Stanley Road, Oxford, on August 2. It was Mr. DODWELL's desire to make the date of the show the 28th inst., in order not to clash with the exhibition at Earl's Court, which opens on August 1, but the midland growers, who show largely at Oxford, have made a representation to the effect that their flowers will not be sufficiently advanced by the 28th; and the exhibition will now take place, as usual, on the first Tuesday of August.

WARE.—A show was held at Ware on Thursday, the 7th inst., in the gardens of the Priory, kindly lent for the occasion by R. WALTERS, Esq. The schedule was an extensive one, but amateurs did not respond to the invitations to compete in such large numbers as was anticipated, but on the contrary cottagers came out strongly. Several nurserymen in the district sent non-competitive exhibits. The strong features of the show were fruit, Roses, especially Teas and Noisettes, groups of plants, hardy herbaceous and stove and greenhouse cut flowers. The secretaries of this, the youngest horticultural society near town, are Mr. FULFORD and Mr. J. ROGERS, junior.

A GIANT TODEA BARBARA.

—One of the special features of interest during the tercentenary celebration recently held at Trinity College, Dublin, was a splendid specimen of this Fern, recently received from Baron Sir FERDINAND VON MUELLER, of Melbourne. Its weight was computed at 3000 lb., and it was consigned to the care of Dr. ED. PERCEVAL WRIGHT, F.R.S., the Professor of Botany in the Dublin University, as a "peace offering," owing to Baron VON MUELLER being unavoidably prevented from accepting a special invitation to be present at the tercentenary celebrations. This enormous Fern was discovered a few months ago in a narrow ravine in one of the ranges between Port Phillip and Gipp's Land, and was only dislodged after much difficulty. It was carefully taken up, all its umbrageous fronds were cut away, and being then securely boxed up in a large case of Eucalyptus wood, and shipped on a mail steamer of the Peninsular and Oriental Line, it reached Dublin in safety a day or two before the celebration began, and, as we have said, was a source of much interest to the numerous visitors on that occasion. Baron VON MUELLER writes as follows:—"These Todeas will only endure slight frosts, and they like some irrigation. During my forty-five years of uninterrupted researches in Australia, I have only met with about ten gigantic specimens of Todea, and I do not know of any place where one would be likely to find good specimens weighing over a ton, and even small specimens are uncommon anywhere. What may make this particular Todea of special interest as 'a memorial plant' is the likelihood of its having begun its career from a spore about the time when the University of Dublin was founded, viz., in 1591." During its voyage from

Australia numerous new fronds had grown to the length of about a foot, and the specimen was to all appearance as fresh and as vigorous as when taken out of the gully in which it was found. Such a novel and valuable lift is deserving of especial welcome and every good treatment, and it is proposed to build a special cool Fern-house for its reception, where it is to be hoped it may long remain in health and beauty as a memorial of the great tercentenary celebration of the University, and of Baron VON MUELLER's good will and generosity in sending such a welcome addition to the treasures of the University Botanical Garden. It has long boasted of two splendid specimens of Grass Gum trees (*Xanthorrhoea*), and of the gigantic Spear Lily of New South Wales (*Doryanthes excelsa*), which has quite recently flowered in the gardens for the second time.

WOLVERHAMPTON HORTICULTURAL EXHIBITION.—The fourth annual exhibition of this very flourishing Society took place on the 12th, 13th, and 14th inst., in the public park, Wolverhampton; and, although it is a somewhat hackneyed expression to say it was "the finest exhibition the Society has yet held," it is nevertheless true. It was a grand exhibition all round, and at present we can only note a few of the leading prize-winners. In the class for sixteen stove and greenhouse plants, Mr. Cypher, Cheltenham, was 1st; Mr. Alderman Marriott, Coventry, 2nd; and Mr. Currey, Salisbury, 3rd. Mr. Cypher was also 1st for six plants in flower, for six fine foliage plants, for eight exotic Orchids, and for six Palms. Some superb groups were set up, Mr. Cypher taking the 1st position very easily with a superb group of an irregular square form. The magnificent display of Roses was a surprise to everyone. The chief exhibitors were Messrs. B. R. Cant, F. Cant, Harkness & Sons, The English Fruit and Rose Company, Prior & Son, Cooling & Son, Henry Merewether, Perkins & Sons, Alexander Dickson & Sons, and the Rev. J. H. Pemberton. For seventy-two Roses, 1st, Mr. B. R. Cant; 2nd, Mr. Frank Cant; 3rd, Messrs. Harkness & Sons; 4th, The English Fruit and Rose Company. Messrs. Perkins & Sons were 1st for bouquets. We may be in a position to give our readers a fuller account of the show next week.

JULY HORTICULTURAL MEETING AT GHENT.

—Certificates of Merit were awarded for the following plants:—1st, *Streptocarpus grandiflorus*, var. nov., from M. Ed. Pynaert Van Geert; flowers double the usual size, the specimens were abundantly flowered, the blooms clustered in a fine bunch. 2nd, *Cliveia* Dr. H. Van Cleemputte (miniature \times robustum), to M. Poelman Maenhout; fine flowers of bright colouring. 3rd, *Miltonia vexillaria* leucoglossa, to MM. Edm. Vervaeke et Cie., large and fine flower; a good variety. 4th, *Cypripedium Crossianum* superbum, to M. J. Hye-Leysen. 5th, *Oncidium Karwinski*, to the same; flower greenish, with large brown spots, lip white, with purple lines. 6th, *O. Lanceanum*; also to the same, fawn-colour, streaked with crimson, and bordered with greenish-yellow, lip rosy-lilac, very pretty. 7th, *Odontoglossum Pescatorei* sulphureum, to the same; bulbs those of *Pescatorei*, flowers small, greenish-yellow, marked with brown. 8th, *Cattleya Mossiae* alba (Wagneri), also to the same; rare and much admired. The cut Roses from Mdlle. Guequier included the best varieties known. Certificates for cultivation and blooming for:—1st, *Kentia Dumoniana*, to M. L. Spaevandermeulen; a pretty dwarf plant, with graceful undulated leaves. 2nd, *Pavetta montana*, to M. L. Desmet-Duvivier; an excellent specimen. 3rd, *Dendrobium filiforme*, to M. J. Hye-Leysen; charming specimen, with fifteen clusters of flowers. 4th, *Stanhopea*, with five fine clusters to M. Ad. D'Haene. Botanical Certificates:—1st, *Asparagus falcatus*, to MM. Duriez Frères; a pretty and curious novelty. 2nd, *Carludovicia palmifolia*, to M. L. Desmet-Duvivier; a most curious plant, with the stem covered with adventitious roots, foliage very fine. Honourable Mention to:—*Lælia purpurata*

var., with purple petals; *Adiantum hybridum*, fragrantissimum \times decorum, from M. Arthur Vanden Heede; *Oncidium ornithorhynchum*, from M. J. Hye-Leysen; *Cypripedium barbatum*, from the same; *Adiantum fragrantissimum* and *A. gracillimum*, from MM. Duriez Frères.

CANFORD MANOR.—Mr. CRASP, Lord WIMBORNE's head gardener, has, in addition to his varied duties as gardener, been appointed forester and general estate manager over the extensive woods, &c., at Canford Manor and its neighbourhood. Mr. CRASP has made himself a name in the horticultural world as an exhibitor of fruits and flowers, including Malmaison Carnations, and notably also by the successful manner in which a number of large Coniferae, from 20 to 30 feet high, have been removed from one distant part of the estate to another, and this without a single failure. Mr. CRASP's previous practical experience in the formation and management of woods will doubtless be brought to bear in the supervision of those at Canford. We had lately the opportunity of visiting Canford and its well-managed gardens, and shall probably have occasion to publish some notes concerning them.

INTERNATIONAL EXHIBITION.—Their Royal Highnesses the Prince and Princess HENRY OF BATTENBERG paid a visit to the International Horticultural Exhibition, Earl's Court, on Saturday, and were conducted through the grounds by Mr. MILNER, and Mr. H. WILLIAMS drew their attention to the collection of Orchids, Nepenthes, Dionæas, &c., in the Insectivorous House.

TEXAS.—Prof. J. COULTER has issued the second part of a *Manual of the Plants of Western Texas*, prepared under the auspices of the Division of Botany of the United States of America. The present part comprises the enumeration of the plants belonging to the Gamopetalous division. This is a work so useful to the botanist, and one that entails so much care and tedious labour on the author, that the gratitude for all concerned will surely be bestowed on the author and on the officials of the department.

HABENARIA.—Dr. KRANZLIN has recently published in *Engler's Jahrbücher*, a monograph of the species of this genus, with which he includes *Bonatea*. No fewer than 348 species are enumerated, grouped in the first place according to the divisions of the lip and of the lateral petals.

PLANT PORTRAITS.

- ACACIA DEALBATA*, Garden, July 2.
ACER RUBRUM var. *DRUMMONDI*.—Leaves streaked with red on the upper surface, glaucous beneath. *Gartenflora*, t. 1374.
 APPLE, THE QUEEN, *Bulletin d'Arboriculture*, &c., May.
COCHLODIA NOETZLIANA, *Moniteur de Horticulture*, May 10.
CYPRIPEDIUM EXUL var. *IMSCHOOTIANUM*, *Lindenia*, t. 327.
OPUNTIA RAFINESQUIANA, *Meehan's Monthly*, June, t. 6.—The most northerly species of Cactaceae, occurring in the United States as far north as 48°, 40'. It has larger flowers than *O. vulgaris*, with more numerous petals, and the joints of the stem are deeper green.
PERISTERIA LINDENI.—A new species described by Mr. Rolfe, allied to *P. pendula*. The flowers are globular, with green sepals and petals, suffused with dull purple, and covered throughout with deep purple spots.
PHAIUS TUEERCULOSUS, *Lindenia*, t. 326; and *Revue de l'Horticulture Belge*, July, 1892.
PITCAIRNIA FLOCCOSA, *Gartenflora*, July 1, pp. 352—353, c. ic. xyl.
SWAINSONA CORONILLIFOLIA, *Revue de l'Horticulture Belge*, July, 1892.

CROSS-BREEDING OF PEAS.

OUR illustrations of two Peas, each reduced two-thirds, figs. 11 and 12, are taken from two plants selected by ourselves on the occasion of a recent visit to Messrs. Sutton's trial grounds at Reading. They are very interesting, as showing what may be

done by cross-breeding and selection when those processes are carried out not hap-hazard, but with a definite aim in view. Early Peas are mostly small in the pod, round-seeded, and as to flavour they compare unfavourably with the wrinkled Marrows of the main crop.

Our first illustration shows a plant of American Wonder with pods of the actual size. To compare with it we took one of Messrs. Sutton's seedlings, as yet unnamed (fig. 12), reduced to the same scale. The height is not much greater than American Wonder, but the pods are as large as those of Telephone or Stratagem, or even of Duke of Albany. For the rest, the illustrations tell their own tale; but we may mention that this is only one illustration of a series of experimental crosses which have been effected with the aim of securing early Peas with larger pods. Looking down the rows, it was easy to see that the result had in many cases been attained, whilst in other cases a longer period of probation and elimination was required. Amongst the assured results is Sutton's Bountiful, which is stated to be the result of a cross between Sangster's No. 1 and Telephone. Here we have a Pea attaining a height of 3 to 4 feet, with pods coming into use two or three days later than Invicta or Sangster's No. 1, and with much larger pods. Messrs. Sutton consider this Pea to be specially well-suited for market garden purposes.

A cross between American Wonder and Early Paragon has resulted in a Pea taller than the Wonder, the pods ripening as early as the round-seeded class, but producing wrinkled seeds with, as we were told, the Marrowfat flavour. This is known as Sutton's A1. Of like character is Empress of India (Sutton), which is the result of a cross between Sangster's No. 1 and Telephone, with pods as large as those of the last-named, but a second early coming in immediately after the earliest round-seeded sorts. This also has the Marrowfat flavour. We have not space to go fuller in detail, but we counsel gardeners not to rely so much on the select dishes laid out on the exhibition table, where all conflicting and adverse conditions are necessarily out of sight, as on the actual inspection of the crops during growth, as they may readily do just now at Chiswick. Messrs. Sutton's trials, and they are almost beyond computation, afford an excellent object lesson, one as full of interest for the practitioner as for the scientist. Where such numbers, sown at the same time under the same conditions, can be seen side by side; even if the details sometimes create confusion, the predominant features are, nevertheless, readily grasped, and the intermediate gradations recognised.

Messrs. Sutton naturally take keen interest in the work, and it was pleasant to see also one of the founders of the firm (Mr. Martin Sutton), though no longer concerned in the business, still retaining his old interest in the results of the several trials, and taking intelligent pleasure in the progress of horticulture generally.

HOME CORRESPONDENCE.

SEEDS ON PLANTS.—A writer in a contemporary has endeavoured to make out that flowers are exhaustive and weaken plants, and has advocated the thinning of Peach buds with a view to the development of bigger blossoms; but few I think will share his views or follow his advice, as most people know that it is not the flowers that tax the energies of plants, but the fruit or seed, which in all cases, when not wanted, should be taken off as soon as possible after the blooms drop, and before swelling takes place. The chief strain, however, comes later on, and is greatest just before the ripening process sets in, and Peas and Beans if the pods are left on, cease bearing; and the same with most things, or they stop growth or refuse to form wood. Take Rhododendrons, for instance, or hardy Azaleas, and leave their seed pods on as against others from which they are removed, and what a marked difference you see, the latter making shoots freely and looking fresh, while the others flag or show great signs of distress. Foxgloves in the ordinary course are only biennials, but

if their seed heads are cut off early they may be made perennials; and if perennials are to be kept flowering they must be helped in like manner, and they all pay well for that attention, and especially so with Delphiniums and others of that class that form seed freely. The most expeditious way of dealing with Rhododendrons is to take the shoot in the left hand, and with the right grasp the head of seed, low down, and give it a quick bend over, when the whole bunch or truss will come away together, as it will snap at the base if the work is done while that part is tender and brittle. Pelargoniums and all bedding plants flower with much greater freedom if they are frequently looked over and relieved of their seed, as while they have it on them they have quite enough to do in sustaining and perfecting it, and to this end they need all the strength that is in them. J. S.

TRADE IN CUT FLOWERS.—I wish we could do something to establish a cut flower trade that can be relied upon. A short time back a Birmingham man wrote to me and asked me to send him a consignment of flowers weekly. I have a splendid garden, and grow a large number of all kinds of perennials; my garden is in fact a show place, and I do nearly all of it myself, as I cannot afford to pay for more than one man in these bad times, when a clergyman's income is less than half its nominal value. I thought I would try the man, and sent the enclosed list, all good stuff, well packed, choice things in tissue paper. I paid 3s. 2d. for the carriage, and he sent me the magnificent sum of 2s. 6d. for them.

1 doz. Moss Rose buds, white and red	19 doz. Pansies
1 " Tea Rose buds	6 yellow Day Lilies
1 " other Rose buds	10 Poppies, yellow and red
12 " white Cluster Roses	12 Lemon Verbenas
8 " sprays of Benthania	13 doz. fine Spearmint, just in time for lamb and Peas
1 " white Snapdragon	And several odds and ends.
1 " red Snapdragon	
7 " white Pinks	
11 " white Rockets	Second Consignment.
12 " Rock Roses	34 doz. white Roses
2 " Escallonias	2 " Rose buds
3 " Ribbon-grass	7 " Moss Rose buds
1 " yellow Lupins	1 " Bride Gladioli
3 " single Geraniums	1 Iris
1 " Auricula-eyed Sweet William	24 doz. Pansies
1 " Honey-suckle	4 " Geraniums
8 Bride Gladioli	2 " fine Canterbury Bells
	2 " Marguerites, &c.

I expected nothing great, but I certainly did not expect to be a loser by it, as I know the white Roses would make four wreaths worth 5s. each, and all was saleable stuff. Now, there are many indigent ladies seeking employment, and I can think of no nicer work for them than to cut and tie flowers. If they could make up their minds to open a small shop in some good thoroughfare in our large towns, and be supplied from clergymen's gardens alone, they would be doing a good work for all concerned. The traders will not take things from us. I could have sent 10,000 Narcissus to market last spring, but I felt sure I should not get more than the carriage for them, so I enjoyed their company at home. *Rector.* [Advertise in the local and other papers that you will supply flowers, &c., by parcel-post. We fear, however, amateur trading is never likely to be successful. *ED.*]

CAIN AND ABEL.—There is an oversight in Mr. Burbidge's long discourse at p. 786, vol. xi., I mean his description "of Cain with his flocks and herds, and of his brother Abel who cultivated the fruits of the earth." This is also so stated in some other gardening papers, but is in direct opposition to the Mosaic narrative given in *Genesis*, chap. iv., v. 2, where we read that "Abel was a keeper of sheep, but Cain was a tiller of the ground." *W. Napper, Chelsea.*

ARISTOLOCHIA ELEGANS.—I lately observed a nice plant of the above species at Ripley Castle Gardens, growing on the back wall of the plant stove and on the roof, and in this position it showed off its quaint-looking flowers to great advantage. These latter are not so large as in some of the newer species, but they are freely produced on the long shoots. The plant is worthy of notice for the pretty bark of the main stems, which is corrugated after the manner of cork bark. It is a free-growing subject, Mr. Tunnington having grown the plant here noticed to its present size in two years. The fine range of glass was well-stocked with plants and fruits, all of which bore signs of the skill and attention of the gardener, as did also the kitchen gardens and pleasure grounds. Ripley Castle is well worth a visit from anyone interested in horticulture. *W. H. Divers, Ketton Hall Gardens, Stamford.*

RHODODENDRON FALCONERI.—Having seen several references made to this beautiful species of Rhododendron in these pages, a description of a fine plant we have here would also not be out of place. The plant, which has flowered grandly this season, having produced upwards of eighty heads of bloom, most of which consisted of from twenty-five to thirty flowers, of a creamy white with just a tinge of lilac colour at the base of the corolla, is 18 feet high, and 19 feet in diameter. The plant is never protected from frost. We have another, a smaller plant, which flowered for the first time this year. *W. Osborne, Heligan, St. Austell, Cornwall.*

COLOUR IN CARROTS.—Your remark as to the origin of the red colour in the Carrot is full of interest. The fact that it is an esculent of great antiquity adds to the difficulty of determining the origin of the red colour in the root. Are we quite certain that our cultivated red Carrots have been derived from the wild British species, *Daucus carota*? Ages ago—seeing that the Carrot was known to the ancients, and is mentioned by Pliny—it might have been bred up from some species of which we in the present day have no knowledge. White Carrots have been in cultivation in this country for many years; the old Long White Carrot was formerly much grown in kitchen gardens, but it has now almost entirely disappeared from cultivation. The White Belgian Carrot, which is supposed to have sprung from the form just mentioned, is our field-cattle Carrot *par excellence*, and is extensively grown for cattle-feeding. The root of this is white, but with a marked tendency towards a more or less decided yellow tinge. Was it from this yellow tinge that, by a process of persistent selection, extending over many years, our red Carrots have been derived? If this is probable, then, after all, our Carrots, white and red, may have been evolved from the wild form, and by selecting, with a view of obtaining certain characteristics scarcely normal, we have reached so many types of our cultivated Carrots. Between the Forcing French Horn and the Long Red Altringham there seems to be quite a specific difference, and yet they may have a common origin. That the colour in Carrots is maintained and deepened by careful selection is certain. In selecting Carrots to yield seed, the seed-grower is always very careful to have the roots as deeply coloured as possible. It can frequently be noticed that the degenerate stock of a Carrot is always pale in colour, and it is a fair inference that, if the selection of a high-coloured type were not persisted in, a poor pale-coloured root of inferior tint would be reached. Probably, our deepest-coloured Carrot is the Altringham, a variety of English origin, and much esteemed in the North of England. The subject is full of interest, and a solution of the problem as to the origin of the red colour in the Carrot, is made more difficult when it is remembered that attempts to improve the wild form by means of cultivation, appear to have failed. It would be interesting to know, as widening the field of inquiry, how it is the Long Red Surrey Carrot and some of the shorter types bury themselves in the soil, while the Altringham and White Belgian thrust themselves up out of it to the height of 3 or 4 inches, and consequently are quite green on that portion of the root so exposed. *R. D.*

BOOK NOTICE.

THE CHRYSANTHEMUM AND ITS GROWTH. By W. and G. Drover, nephew, and W. Adams. Illustrated.

This new handbook on the cultivation of the Chrysanthemum is the joint work of three persons, two of whose names have acquired of recent years some amount of distinction by reason of their success as exhibitors of the Chrysanthemum all over the country. The plant is taken up at the cutting stage, and its cultivation in general and in particular as regards a certain selection of incurved and Japanese varieties is followed through the entire season. The peculiarities of certain "families" as the Teck, the Queen, Etoile de Lyon, Prince Alfred, Jeanne d'Arc, and Japs come in for special remarks regarding the important operation of "taking" the bud, or rather leaving it. These remarks being the outcome of some years of close observance of the idiosyncrasies of the plants, are well worth reading by both the exhibitor and the general cultivator.

There is a portion of the book which it seems to us might be much curtailed, and that is the chapters on the cultivation of each of forty-eight Japanese and thirty-six incurved for exhibition purposes.

The ordinary cultivator could, of necessity, pay but little heed to the multitude of directions afforded in these chapters, and his errors of omission and commission might be many if not serious. The ordinary methods of cultivation are explained in simple, if necessarily technical garden terms, and would be quite understandable even to those few growers of the flower who are not very well versed in such matters. Everything, we should suppose, that an exhibitor requires to be acquainted with from growing the plants to dressing and staging a bloom, is fully explained. We may say in conclusion, that the authors combat the idea, commonly held, that the varieties of *Chrysanthemum* may be ascertained by their foliage, colour of the shoots, habit, &c. Altogether, the book is a useful addition to the gardeners' library, brought well up to the present time.

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 12.—The meeting at the Drill Hall, James St., Westminster, on the above date, brought a bright lot of flowers together from competitors and non-competitors, the exhibits from the former chiefly consisting of hardy perennials, Roses, &c., and those of the latter of Orchids. Fruit is beginning to occupy a larger amount of space, and some excellent samples of Pine-apples, Melons, and new varieties of Strawberries, were noted.

Floral Committee.

Present: W. Marshall, Esq., in the chair; Messrs. C. F. Bause, B. Wynne, H. Herbst, R. Owen, Norman Davis, G. Phippen, R. B. Lowe, G. Nicholson, W. Goldring, W. C. Leach, J. T. Bennett-Poe, T. W. Girdlestone, C. Noble, H. Turner, and G. Gordon.

By far the most important exhibits were those for which prizes had been offered, including the Mantell Silver Challenge Cup (value 25 guineas) in an open competition for 24 Roses distinct, three blooms of each. There were also prizes to amateurs for hardy herbaceous perennials. The stand of twenty-four Roses distinct, three trusses of each, staged by Mr. B. R. Cant, of Colchester, was magnificent, and we think they were even finer than those shown at Earl's Court last week by Mr. Frank Cant, who was 1st in honours both there and at the Crystal Palace. On Tuesday the positions were reversed, and Mr. B. R. Cant secured the 25-Guinea Cup. The following varieties were those shown:—Mrs. Paul, A. K. Williams, Madame Cusin, Marie Baumann, Jennie Dickson, Reynolds Hole, Gustave Piganeau, Marie Verdier, Suzanne-Marie Rodocanachi, Xavier Olibo, Ernest Metz, Victor Hugo, Dr. Andry, Pride of Waltham, Mrs. John Laing, Sultan of Zanzibar, Earl of Dufferin, Duchesse de Morny, Prince Arthur, La France, Comtesse d'Oxford, Alfred Colomb, Her Majesty, and Duke of Wellington. Mr. Frank Cant had also a very good stand, containing extra good Earl of Dufferin, La France, Gustave Piganeau, Pride of Waltham, Merveille de Lyon, and Alfred Colomb. Messrs. Paul & Son, Old Nurseries, Cheshunt, had good specimens of Her Majesty, Earl of Dufferin, Madame Victor Verdier, Catherine Mermet, Marie Rady, and Maurice Bernardin.

In the class for eighteen bunches of hardy herbaceous perennials, the Earl of Dyart, Ham House, Richmond (gr., G. Sage), was 1st; he had a very pretty collection, including a bunch of Sweet William, which was the subject of much criticism, as not being a herbaceous perennial. He had also *Lathyrus latifolius*, *Erigeron speciosus*, *Eryngium amethystinum* and *E. giganteum*, *Clematis erecta*, *Coreopsis lanceolata*, *Scabiosa caucasica*, *Campanula persicifolia*, fl.-pl.; *Gaillardia grandiflora*, *Centuarea macrocephala*, *Lilium candidum*, &c.

For twelve bunches, H. Berkeley James, Esq., Carshalton, Surrey (gr., J. Gibson), was 1st, who had *Liliums*, *Irises*, *Delphiniums*, *Galega officinalis*, *Achillea Ptarmica*, *Larkspurs*, &c.; W. Marshall, Esq., Auchinraith, Bexley, was 2nd, included in his exhibits were the useful and bright *Monarda didyma*, *Linaria peloria*, which was awarded a First-

class Certificate; and *Campanula persicifolia* semi-plena, which obtained an Award of Merit.

Miss R. Debenham, St. Peter's, St. Albans, was 1st for eight bunches.

NON-COMPETING EXHIBITS.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, had a large group of hardy herbaceous cut flowers, including *Lilium Brownei*, *colchicum*, *dalmaticum*, *pardalinum*, and *Bloomerianum magnificum*, which obtained an Award of Merit; *Achillea Ptarmica* (The Pearl), *Lilium maritimum* (Botanical Certificate), *Gaillardia Aurora*, which was the recipient of an Award of Merit; and *Calopogon pulchellus*, which was awarded a First-class Certificate. This is a very pretty little plant, and although it is nearly 100 years since it was first introduced, it is very rare even now; it grows about 1½ foot high, the flowers are pinky-purple, and borne upon a spike bearing three to four. The leaves are few and narrow. (Silver Banksian Medal for the group.)

Mr. H. B. May, Edmonton, had an extensive group of stove and greenhouse foliage plants and Ferns, tastefully arranged, and adding much to the appearance of the hall. (Silver-gilt Banksian Medal). Messrs. Kelway & Sons had a large number of *Gaillardias* in variety; Mrs. Pitcher, a crimson variety with yellow margin, was granted an Award of Merit. Jas. Kelway, is another very striking variety, with colour similar to the foregoing, and about 4 inches across. Tennyson is a very pretty yellow one. Also a beautiful collection of *Delphiniums*, of which the three following obtained Awards of Merit: Henry, a purplish-blue variety, with white eye—very large; Princess May, a charming variety—colour, a sort of heliotrope and pale blue intermixed; Sailor Prince, another purple variety, without any white. The same firm, whose exhibit brightened up all one side of the hall, had a number of hardy herbaceous cut flowers, including *Lychnis dioica* alba fl.-pl., *Potentilla* (Hamlet), *Centranthus rubra*, *Eryngium giganteum* and *amethystinum*, *Galega compacta*, &c. (Silver-gilt Flora Medal.)

Mr. C. W. Cousins, High Street, Wood Green, had a large number of cut blooms of *Gladiolus Colvillei* alba.

Messrs. Laxton Bros., Bedford, sent some hybrid Sweet Peas.

From the Royal Gardens, Kew, came a very interesting and valuable collection of cut Roses, embracing some scores of species and garden varieties, which were intended to show what could be done, even so close to London as Kew is; and the results were certainly satisfactory. Amongst a great many, were *R. rugosa* and its varieties, *R. nitida*, *R. arvensis* fl.-pl., *R. gallica* var., *R. centifolia*, *R. indica sanguinea*, *R. hibernica*, *Rosa Mundi*, the streaked or mottled species; *R. polyantha* in variety, and a large number of garden hybrids, to which we may revert on another occasion.

Messrs. Paul & Son, Waltham Cross, exhibited some new Roses (Tea and H.P.). Clio, their new Tea of this season, received an Award of Merit. Its petals are very good, and the bloom pale pink.

Messrs. H. Cannell & Son showed some trusses of hybrid Verbenas. The varieties were named, but so keenly did they vie with each other that it would be useless to reproduce them here. (Bronze Banksian Medal; also an Award for *Petunia Schwestern Bonifacia*.)

Messrs. J. Veitch & Son, had some cut blooms of *Ligustrum sinense floribundum*, *Cladrastis amurensis*, *Stuartia pseudo-Camellia*, *Ceanothus azureus*, and *C. alba*, *Andromeda speciosa cassinefolia*, a beautiful and most decorative plant; *Weigela* (*Diervilla*) *sessilifolia*, and *Notospartium Carmichaeli*. (A Silver Banksian Medal.) Also fifteen trusses of *Rhododendron javanicum*, *jasminiflorum* varieties; and two plants of *Gloxinias*, *Antigone* and *Herald*.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. James O'Brien, Dr. Maxwell T. Masters, F.R.S.; the Rev. E. Handley, Sydney Courtauld, C. J. Lucas, A. H. Smee, E. Hill, James Douglas, H. Williams, T. W. Bond, H. M. Pollett, and T. B. Haywood.

Messrs. F. Sander & Co., St. Albans, exhibited a select group of Orchids, comprising many varieties of *Miltonia vexillaria*, of which one with a triangular rich maroon-crimson base to the labellum was pronounced to be the richest-coloured form yet exhibited (it was entered for a Certificate). Another distinct form was a pure white one, with lemon-yellow base to the lip, and without a shade of rose-colour in the whole flower. Other fine and distinct things

in Messrs. Sander's group were *Cattleya Batalinii*, a pretty variety, with slender stems, bearing from one to four flowers. The sepals and petals, which are nearly equal in width, are delicately veined and tinged with pale rosy-lilac. The front lobe of the labellum is rich violet-tinted crimson, the side lobes and column bluish-white. It may be a natural hybrid with *C. Loddigesii*, but its slender growths are inexplicable. Another pretty novelty is *Oncidium Enderianum* (natural hybrid, *crispum* × *curtum*?). The flowers, which are very showy, had the sepals yellow, barred with light brown, the nearly circular petals rich shining light brown, with a few golden-yellow marks at the edge; lip bright yellow, with a quarter-inch wide border of the same colour as the petals, and a narrow golden margin. In the same group were the rare scarlet *Renaanthera matutina*, *Cypripedium Rothschildianum*, &c. A Silver Banksian Medal was awarded the exhibitor.

Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, and Park Road, Clapham, staged a group of *Oncidiums*, mainly consisting of fine plants of *O. macranthum* and *O. curtum*. Among the former, *O. M. Williamsi*, which had a mottling of brown in the petals, was distinct. (A Silver Banksian Medal.)

Messrs. Jas. Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, showed another of their interesting hybrid Orchids, *Phalaenopsis* × *Artemis*, for which an Award of Merit was made (*P. amabilis* ♀, *Bl.*, syn. *grandiflora*, Lindl., and of gardens, × *P. rosea* ♂), a most interesting cross, bearing some resemblance to *P. intermedia*, which has been proved by home-raised seedlings in Messrs. Veitch's nursery to be *P. Aphrodite* (*amabilis*, Lindl., and of gardens), × *P. rosea*. The flowers of *P. Artemis*, when the plant is strong, will be larger, and of a clearer pink than those of *P. intermedia*.

W. Vanner, Esq., Camden Wood, Chislehurst (gr., Mr. W. H. Robbins), showed a fine plant of the rare and beautiful white *Cologyne Sanderiana*, with three stout spikes, together bearing thirty blooms, receiving a Cultural Commendation. T. Gabriel, Esq., Streatham, also exhibited a smaller plant of the same species.

C. J. Lucas, Esq., Warnham Court, Horsham (gr., Mr. Duncan), showed the elegant little *Epidendrum Tampense*, collected by him in Florida. A Botanical Certificate was granted.

Major-Gen. C. S. Berkeley exhibited *Dendrobium crystallinum*, Gen. Berkeley's variety, one of the richest coloured forms of the species yet seen; and he received an Award of Merit.

J. W. Temple, Esq., Leyswood, Groombridge (gr., Mr. E. Bristow), sent *Cattleya Warscewiczii*, Temple's variety, and cut flowers of the same species; and of *C. Mendeli*, Leyswood variety, a very finely-shaped kind; also *C. granulosa Dubuyssoniana*, and a good form of *Cypripedium Philippinense*.

Messrs. Pitcher & Manda, The United States Nurseries, Hextable, Swanley, Kent, sent *Cypripedium Stonei candidum*, a distinct variety, in which the usual dark lines in the sepals are absent, the flowers being ivory-white, with a tinge of lilac on the lip, and a few rose-coloured markings on the petals. An award of Merit was made to the exhibitor for this plant.

Messrs. Hugh Low & Co., Clapton, staged a small group of Orchids, comprising *Cypripedium bellatulum*, *C. hirsutissimum*, *C. Volanteum*, and the light-coloured *C. V. Lowii*; *Dendrobium crystallinum album*, *Cattleya Gaskelliana alba*, *Pescatorea cerina*, &c.

Mrs. Crawford, Gattons, Reigate (gr., Mr. Slogrove), sent a fine form of *Cattleya Warscewiczii* (*gigas*); and Messrs. Lewis & Co., Southgate, exhibited *Cypripedium* × (*Lowii* × *Lawrenceanum*), under the name of *C. Macfarlaneum*, but *C. Macfarlanei* is a name already given by Messrs. F. Sander & Co. to *C. calophyllum* × *C. Spicerianum*.

Fruit and Vegetable Committee.

Present: Philip Crowley, Esq., Chairman; Jno. Lee, R. D. Blackmore, H. Pearson, Harrison Weir, G. Taber, W. Warren, A. Dean, J. Willard, G. H. Sage, G. Wythes, F. Q. Lane, H. Balderson, Dr. Hogg, and J. B. Cheal.

From the Royal Gardens, Windsor, came half a dozen very fine Pine-apples, and a collection of wonderfully good Cherries of the most tempting description. The following are the names:—Bigarreau Monstreuse, Belle d'Orleans, May Duke, Black Tartarian, Governor Wood, Frogmore Bigarreau, Knight's Early Black, Bigarreau Napoleon (perfect sample), Downton, Black Eagle, Florence, Early Bigarreau, Late Duke, and Adam's Crown. (Silver Medal.)

Mr. Gilman, gr. to the Earl of Shrewsbury, Ingestre Hall, Stafford, sent half a dozen Melons, obtained from Hero of Lockinge × Best of All. The fruit (Ingestre Hybrid) were yellow, and large. Melons also came from Mr. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, results of crossing many of the best varieties, with a variety called Syon House. A vote of thanks was accorded.

Some excellent new varieties of Strawberries of his own raising were shown by Mr. Allen, gr. to Lord Suffield, Gunton Park, Norwich. All of these varieties had been exhibited previously this year as forced fruits, or last year from the open ground. Lord Suffield is a mid-season fruit longish, cone-shaped, broad at the shoulder, and of a dark crimson colour. It bears in long succession, and the flavour is that of an improved Keen's Seedling. Empress of India is another cone-shaped variety of fair size and bright scarlet colour, with a strong smack of Queen flavour; it is an early fruiter, and packs well. Gunton Park is an immense wedge-shaped fruit, a great bearer, crimson in colour, with good flavour. It is a strong grower, and bears in long succession.

An interesting collection of Marrows came from the Royal Horticultural Society's Garden at Chiswick, both Custard and long-shaped varieties. Also some Apples, such as Manx Codling, Stirling Castle, Tom Putt, Gloria Mundi, Beauty of Kent, New Hawthornden, &c. Some fruits of a Fig (*Trifer*), came from the same source. A dozen Pines (*Queen*), of excellent quality, came from Mr. J. Fitt, The Gardens, Panshanger, Hertford (Silver Medal); also a good cluster of Bananas "Ladies Finger."

Mr. Thos. Bones, Chiswick, sent some heads of Cauliflower (*Acquisition*). Mr. C. Leach, Albury Park Gardens, Guildford, some Carrots, which had been grown with Leach's gnat and fly annihilator, with very good result. Also a few roots of Beet Leach's Telegraph, with the note that it can be had good for table every day in the year.

For Mr. Sharpe's prize for the three best dishes of Pears, 1, Sharpe's Triumph; 2, Sharpe's Queen; 3, Sharpe's Sir F. A. Millbank: Mr. C. Osman, Sutton, Surrey, was 1st; 2nd, F. S. Pridden, Esq., Boxgrove, Guildford (gr., Mr. F. Walker); 3rd, the Rev. L. R. Flood, Merrow Rectory, Guildford (gr., Mr. J. Gilbert).

Messrs. J. Veitch & Son, Chelsea, sent plants and fruits of a small Bean (*Multum in Parvo*). It is a dwarf-growing Bean, with small pods, and the seeds are only the size of Peas, but are very full, and possess mild flavour.

Mr. Crasp, gr. to Lord Wimborne, Canford Manor, Wimborne, sent a dozen Peaches (Raymaeker). They were large, but of very poor colour. (Vote of Thanks.)

Mr. E. Manel, Caen Calvados, France, had specimens of his Mastic horticole Oger, a kind of grafting wax. (Vote of Thanks.)

LECTURE ON COOL ORCHIDS, by the Rev. E. HANDLEY.

The speaker commenced by saying that there was an impression abroad that an Orchid grower was necessarily an enthusiast who was prepared to spend fabulous sums upon plants, and that when obtained they are most difficult and expensive in regard to their wants and requirements. He should endeavour to show that such was not the case, but that some of the Orchids could be grown as cheaply and as successfully as other plants. The idea that they were only to be obtained at prohibitory prices had been formed by reading in the papers of the large sums occasionally paid for unique species or varieties, and when he had sought to explain this, he had been told that if they could not have the best of them, then they would have none. He ventured to think that this was very unwise, and it was a policy that they did not carry out in regard to other things. All the species Mr. Handley was going to speak of could be bought for a few shillings each, and they were beautiful subjects that could not fail to please. The Orchid grower need not be a collector of curiosities, neither need he seek to possess varieties that other people had not got, and for which, therefore, he would have to pay highly. Mr. Handley's next point was that there are Orchids which are not expensive to grow. The structure he would prefer for the growth of cool Orchids would be a lean-to, with north or north-westerly aspect. This should be about 12 feet wide, and as long as necessary; the height at the back 11 feet. The front glass should be about 18 inches high, and without any ventilators, but shutters let into the brick wall near the ground would be

best for that purpose. The top-ventilators should be about 2 feet wide, and run the whole length of the house. It was necessary to have some hot-water pipes to protect against very severe frost, and sufficient should be obtained that will keep the required temperature without being heated more than one can bear one's hand upon, as hot pipes cause a dry atmosphere. The temperature in winter should not be less than 36°, and certainly not higher than 45° to 50°. In summer it would be difficult to keep them cool enough. Blinds would be indispensable. These should be fastened to rollers, which should run on iron rods about 9 inches from the glass, which would allow a current of air to pass between. On the paths, &c., there must be no ornamental tiles, which reflect heat, causing a warm dry atmosphere. The speaker found that breeze, or small coke, was very suitable for paths, with a wooden trellis running along for walking upon. Such a path could easily be kept cool and moist. Good large tanks that would preserve plenty of soft-water should be in every Orchard-house. The front stage should be on a level with the bottom of the light, and that at the back a little higher. These should be covered with small shell or shingle, a couple of inches or less deep. The lecturer then said that the next point was what and how to buy. The cheapest and most interesting way was, to buy unflowered pieces. To a limited extent, and in an innocent manner, it allowed one to indulge in one of the vices of the nineteenth century, viz., speculation. From his experience, he found that in any collection from a reliable importer, or from the auction rooms, there were always some treasures. Mr. Handley then gave the names of some of the species that were amenable to the "cool" treatment, amongst which were included the following:—*Odontoglossum crispum*, *O. blandum*, *O. caudatum*, *O. cirrhosum*, *O. Hendersonianum*, *O. nebulosum*, *O. Pescatorei*, *O. triumphans*, &c. *Oncidium* *concolor*, *excavatum*, *Forbesii*, *macranthum*, *tigrinum*, &c. *Masdevallias* *coccinea*, *Harryana*, *Lindenii*, *igneae*, *Shuttleworthii*, *Wallichii*, &c.; *Sophronis* *grandiflora*, *Lælia* *Dayana*, *Nanodes* *Medusa*, *Maxillaria* *grandiflora*, &c.; *Cypripedium* *insigne*, *Boxalli*, and *villosum*; *Pilumna* *fragrans*, and *Epidendrum* *vitellinum* *majus*, although the lecturer himself had not had very satisfactory experience with the last-named. Mr. Handley then gave directions for the staging of the plants, and advised that those requiring little head-room should be stood upon the front stage, and the rest on the stage at the back of the house, keeping the coolest and dampest spot available for the *Masdevallias*. From their pendulous habit, some of the species would be especially suitable for hanging-baskets, such as *Odontoglossum* *Cervantesii*, *O. Rossi*, and its varieties, the bright little *Sophronis* *grandiflora*, &c. After speaking encouragingly respecting the peculiar treatment required by many of the plants, and advising that they be moved about until the proper place be found, the reverend gentleman said that there were three points essential to their proper culture, viz., (1) the proper temperature in each season of the year; (2) proper and judicious watering; and (3) perfect cleanliness, including plenty of pure air. To provide against three pests that the inmates of this house are liable to, the lecturer advised that for thrip, the plants should be periodically looked over, especially the young growths, and with the aid of a camel's hair brush, and some insecticide, they could be kept free from these minute insects. If green-fly appeared, then fumigate with pure tobacco. Slugs must be trapped by some such means as a piece of Turnip or Potato, &c., and a little cotton wool wrapped round the foot of a spike would prevent them reaching the flowers. Some plants, such as *Oncidium* *concolor*, should be allowed, every alternate year, to recoup themselves, as they are likely to suffer from undue floriferousness, and no spikes should be allowed to remain on the plants until they wither. In conclusion, Mr. Handley said Orchids no doubt required attention, observation, and study, but that study would be interesting, and would lead to the study of geography, that we might understand the natural homes of the plants; chemistry, to assist us to understand the food supplies required; and botany, that we might know to what family each plant belonged. No hobby was worth the name if it did not cause its pursuer a little trouble, and success would lose its sweetness if it were not for the difficulties overcome.

The Chairman, Mr. J. Douglas, emphasised the injury resulting from front ventilators close to the

plants, which allowed the warm air in summer to blow directly upon them, and said the Orchid grower required but patience, perseverance, and a thorough love for the plants.

CLIFTON AND BRISTOL ZOOLOGICAL.

JUNE 29, 30.—During the past few years this Society has relinquished the holding of a horticultural show, because the takings did not pay the expenses. The shows have, however, been reconstituted, under the spirited management of Mr. Collier, the Society's superintendent, assisted by Mr. Harris, who ably presides over the horticultural department of the Clifton Zoological Gardens. The fine weather which prevailed during the two days the show remained open, and the attraction of a Hungarian band, proved sufficient, it may be hoped, to make the exhibition a success from a pecuniary point, as it certainly was from every other.

Roses.—These flowers were well shown, although but few nurserymen put in an appearance. For forty-eight distinct varieties, single trusses—nurserymen, G. Cooling & Son, Bath, were 1st, having Alfred Colomb, Pride of Waltham, A. K. Williams, Madame G. Luizet, Mlle. S. Rodocanachi, and others in fine condition; 2nd, Mr. Mattock, New Headington, Oxford. In the classes of twenty-four Roses, and twelve blooms, the same exhibitors were 1st and 2nd in the same order of their names. For eighteen Tea or Noisette, distinct, Mr. Mattock was 1st with an all-round good lot; *Souvenir d'un Ami*, Marie Van Houtte, Anna Olivier, Niphetos, Rubens, and Madame C. Kuster, being particularly well shown; Messrs. Cooling & Sons were a good 2nd.

Amateurs exhibited well in the ten classes devoted to them, and the competition was close. For twenty-four blooms, distinct, S. P. Budd, Esq., Bath, was 1st; A. Hill Gray, Esq., Bath, 2nd. For twelve Tea or Noisette, S. P. Budd, Esq., was again 1st, having *Souvenir d'Elise*, Madame Margottin, Rubens, and Edith Gifford, in fine condition. For twelve, any variety, A. H. Grey, Esq., Bath, was 1st, with Anna Olivier; 2nd, S. P. Budd, Esq., with A. K. Williams; 3rd, J. Lysight, Esq., with *Devoniensis*.

For a basket of Roses, arranged with Rose foliage, 1st, E. King, Esq., Clifton, with a light and tastefully-arranged basket; 2nd, the Hon. Frances Sugden, Wells; 3rd, E. T. Hill, Esq., Westbury.

The class for a bouquet of Roses was well filled, but most of the bouquets were much too closely arranged; those that won prizes were, however, good. Mr. J. B. Cole, Stoke Bishop, was 1st, Mr. J. B. Brain 2nd, and S. P. Budd, Esq., 3rd.

Plants.—The groups and other plants, which made a fine feature of the show, were arranged on the turf up the middle of each tent, and for one consisting of miscellaneous plants, Mr. Cypher, of Cheltenham, was awarded 1st prize, both good plants and good taste in arrangement being shown; 2nd, Mr. J. Saunders, Clifton, who arranged a very pretty group, containing Orchids, &c.

For six foliage plants, Mr. Cypher was 1st, with clean bright specimens of Palms, Crotons, Cordylines, &c.; H. St. Vincent Ames, Esq., who also had nice clean plants, being 2nd.

Mr. Cypher was again 1st in the class for six stove and greenhouse plants in flower, and contributed well-flowered fresh plants of *Stephanotis floribunda*, *Ixora Pilgrimii*, *Anthurium Scherzerianum*, *Erica ventricosa* *alba*, *E. jubata* *rubra*, and *Phenocoma prolifera* *Barnesii*. For a specimen stove or greenhouse plant in flower, Mr. Cypher was placed 1st with *Dracophyllum gracile*; 2nd, A. W. Summers, Esq., Clifton, with a well-flowered *Stephanotis*. For four Orchids, Mr. Cypher was 1st, with large well-flowered plants of *Cattleya Sanderiana*, *Anguloa Clowesi*, *Dendrobium infundibulum*, and *Oncidium macranthum*. For six stove and greenhouse Ferns, an amateur, H. St. Vincent Ames, Esq., was 1st with excellent specimens of *Adiantum Farleyense*, *Microlepia hirta cristata*, *Gymnogramma chrysophylla*, and others; J. Lysight, Esq., 2nd, his best plants being *Adiantum gracillimum*, and *Davallia dissecta*.

Coleus, zonal *Pelargoniums*, *Petunias*, and similar soft-wooded plants were well shown, and gave effective colouring to the show. Cut flowers were likewise meritorious and well set up. For twelve bunches of cut flowers, W. R. Wait, Esq., was 1st; H. St. Vincent Ames, 2nd; J. W. Langdon, Esq., 3rd. Mr. Harris arranged a large group of seedling Ferns from the Society's grand collection, amongst which were numerous beautiful forms; Messrs. Garraway &

Co., nurserymen, Bristol, arranged a large and effective group of foliage and flowering plants; Messrs. Parker & Sons, nurserymen, Bristol, also contributed a large and bright group of ornamental foliage and flowering plants, and these non-competitive groups were much admired by the visitors.

Fruit.—There were only seven classes for fruit, and some of these were not filled. Black Hamburgh Grapes were large in bunch and berry, but there was none that was well-coloured. For three bunches, 1st, J. C. Wall, Esq., Redland Lodge; and 2nd, J. H. Cockley, Esq., Sneyde Park.

The Strawberries shown were of fine size, and the colour was good. For four dishes, 1st, Mr. G. Garraway, Bath, with Sir J. Paxton, Princess Alice, President, and Eleanor; 2nd, H. St. J. Vincent Ames, Esq., his best dish being A. F. Barron.

WINCHESTER HORTICULTURAL.

JUNE 30.—The Winchester Horticultural Society held its show as usual in the Guildhall, on the above date. Roses formed the prominent feature of the show, and the blooms were staged in creditable condition considering the unfavourable weather experienced in early spring, but in some classes the competition was weak, although good quality made up for the deficiency in this respect. The principal class, that for forty-eight varieties, distinct, and here Mr. B. R. Cant, Colchester, easily won with medium-sized, full and fresh blooms, especially good were those of Marie Baumann, Mrs. Paul, Alfred Colomb, and Madame Gabrielle Luizet.

In the class for twenty-four trebles, distinct, Mr. B. R. Cant was again successful with flowers of equal merit to those in the last class; Dr. Budd, Brooklyn Road, Larkhall, Bath, won 1st place in the classes for twenty-four single trusses, distinct, and for twelve trebles, staging very fine flowers of excellent colour and form; Messrs. Keynes, Williams & Co., Salisbury, won the 2nd prize in each of these classes. They also won for twelve trebles, Teas or Noisette varieties.

With the H.P. Gustave Piganeau, a rose of a rich colour, Mr. Cant was 1st for twelve blooms of any dark H.P., as he also won in similar classes for any one light variety, and one variety of Tea or Noisette Roses, showing Madame Gabrielle Luizet and Innocente Pirola; Dr. Budd and Messrs. Keynes were 2nd.

The following classes were open to amateurs only. For twenty-four single trusses, distinct varieties, Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, was 1st, with a very fine lot of blooms, and among them good blooms of Ulrich Brunner, Cleopatra, Countess of Oxford, Catherine Mermet, and The Bride; Dr. Budd followed Mr. Neville very closely; seven competed. Dr. Budd and Mr. Neville changed places in the class for twelve trebles. For twelve Teas or Noisettes, the entries numbered six, and here Mr. Neville easily won 1st honours with medium-sized fresh blooms; Dr. Budd was 2nd. For twelve single trusses, distinct, Dr. Seaton of Rutland Lodge, Bitterne, was 1st, with a very good stand.

Miscellaneous.—Groups of mixed plants were arranged at the sides of the hall, and made a bright display, Mr. Thomas Lowns, gr. to F. C. Birch, Esq., Clovelly, Winchester, winning in the leading class, as did Mr. Astridge, gr. to W. Barron Simmonds, Esq., Abbots Barton, in the smaller class.

Table plants and Begonias were creditably staged.

The classes confined to ladies for the best dressed stand of flowers, and the same of wild flowers, created much competition and interest, so good were the exhibits. In the former class, Miss Ladhaws, Shirley, Southampton, was 1st, with a pretty arrangement of flowers, &c.; closely followed by Miss A. Flight and Miss Nelly Owen, Basingstoke. In the latter class, Miss Flight was distinctly ahead.

Groups of plants "not for competition" added to the embellishment of the hall. Mr. E. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, and Messrs. E. Hillier and Jeffrey, nurserymen, Winchester, were the more conspicuous exhibitors of these. Mr. Ladhaws, Shirley, Southampton, staged a collection of hardy cut flowers which was much admired. The arrangements, excellent as usual, were under the superintendence of Mr. C. Shenton, the honorary secretary of the society.

THE GLOUCESTERSHIRE ROSE.

JULY 5.—This Society held their annual show on Tuesday, July 5, in the Corn Exchange. The day was not propitious, some heavy thunder showers falling in the morning, and a steady drizzle all the afternoon.

Not many nurserymen competed, and these all hailed from the west; but in all upwards of 200 entries were received.

The Tea and Noisette classes were admirably filled. The colouring in Comtesse Nadaillac, A. Olivier, and Hon. E. Gifford, being exquisite, due perhaps to the ferruginous soil of the district. Hybrid perpetuals were also very good, as Madame Gabrielle Luizet, Mrs. John Laing, and one flower of Mrs. G. Paul attracted deserved attention. The Rev. F. R. Burnside had five entries, in all of which he took 1st honours.

The cottagers' exhibits were beyond the average, the twelve blooms in the 1st prize being equal to those staged by the amateurs. The Society is affiliated with the National Society, and, without doubt, in spite of the unfortunate weather, the annual show was a great success, and the Society is very fortunate in having such a fine hall for their show. *Correspondent.*

CROYDON HORTICULTURAL.

JULY 6.—The committee of this Society was very fortunate in securing cool, pleasant weather for the holding of their summer exhibition on the above date, and found a very delightful spot for the purpose in the park-like grounds attached to Buckwood House, near to East Croydon Railway Station. It was very fortunate, too, that Mr. Philip Crowley, of Waddon House, is a considerable contributor of plants as, but for his many fine ones, the tent devoted to plants would, indeed, have been poorly furnished. Somehow, it would seem that plant culture does not flourish about Croydon. Then, again, the show owed in the cut flower classes almost everything to the Roses, which brought a superb lot of blooms, and considerable competition.

Plants.—Of these, the best nine in bloom were shown by Mr. King, gr. to P. Crowley, Esq., Croydon, who had a good *Clerodendron Balfourianum*, the pretty *Dipladenia boliviensis*, *Anthurium carneum*, *Ferriense*, and *Andraeanum*; *Stephanotis floribunda*, *Dracophyllum gracile*, *Ixora Williamsii*, &c. Mr. King also had the finest specimen in bloom, a finely-flowered *Clerodendron Balfourianum*. Mr. Elsley, gr. to Captain Wright, Croydon, was 2nd, with a moderate *Anthurium Scherzerianum*. This latter exhibitor showed six plants in flower. Mr. King also had the best nine foliage plants in four diverse Palms, large specimens; *Croton superbus* and *Johannis*; *Alocasia macrorrhiza*, finely coloured; *Dracena Lindenii*, and *Asparagus plumosus*. Mr. King was also the only exhibitor of six Ferns, very fine pieces of *Davallia Mooreana* and *polyantha*; also *D. fijiensis* and *D. fijiensis plumosus*, and *Adiantum gracillimum* and *cardioclæna*.

The best single specimen foliage plant was a very fine Palm-like *Carludovica Drudei* from Mr. King. The same exhibitor had the best six *Dracenas*, medium sized, but well coloured plants of *Lindenii*, *Gladstonei*, *Regalis*, *superba*, and *Recurva*; Mr. Scott, gr. to J. Aste, Esq., South Norwood, was 2nd.

The only half-dozen of *Caladiums*, a very fine lot, came from Mr. Simmonds, gr. to H. C. Mayhew, Esq., Norwood Hill—Mons. A. Hardy, *Luddemannianæ*, and Paul Veronese were admirably coloured. Mr. King was the only exhibitor of *Selaginellas* in pans, having specially good masses of *Wildenoia*, *Kraussiana aurea*, *apoda*, *cæsia*, *sarpens*, and *Poulteri*. Exotic Ferns in 6-inch pots were largely shown, giving good variety.

Table plants were very good, the best nine coming from Mr. Lane, gr. to E. H. Coles, Esq., Caterham. *Fuchsias* were fairly good. Mr. Simmonds had the best six, with medium-sized pyramids, well bloomed; and Mr. Claley the 2nd best bushy plants, too much supported by sticks. *Begonias* in the large class for nine plants were unusually good. For gardeners, Mr. Slater, gr. to Mrs. Hulse, Carshalton, had the best nine dwarf compact very free-blooming plants. Mr. Simmonds was 3rd. *Gloxinias* were below average quality, and finer strains are much needed at Croydon. Mr. Simmonds and Mr. Perrett, gr. to Miss Fuller, Dappas Hill, exhibited zonal *Pelargoniums* of moderate quality. The best six *Coleuses* came Mr. R. Haynes, gr. to Miss Freeman, South Norwood.

In the plant tent were very good groups of plants from Messrs. J. Laing & Sons, Forest Hill; J. Peed & Sons, Streatham; Mr. T. Butcher, South Norwood; Mr. J. R. Box, Croydon, who had, in addition, numerous good *Begonias* and *Caladiums*; and Mr. A. Chaff, Parke Hill Nursery, Croydon. There were

but two large competitive groups, the best set up by Mr. Smith, gr. to G. Taylor, Esq., Margery Hall, Reigate; Mr. Scott was 2nd.

Roses.—The display made with these flowers proved to be exceedingly attractive. In the trade classes the Colchester growers had it all their own way pretty well. Mr. F. Cant was 1st with a fine lot of blooms in the class for forty-eight singles, having very good Duke of Teck, E. Y. Teas, Merveille de Lyon, Niphotos, Charles Lefebvre, May Bennett, &c. Mr. B. R. Cant, was 2nd; Messrs. D. Prior & Sons, 3rd. With twenty-four trebles, Mr. B. R. Cant was 1st, and had in his lot rich blooms of Maréchal Niel, La France, Earl of Dufferin, Marie Baumann, Madame Gabrielle Luizet, Mrs. J. Laing, and others; Mr. F. Cant was 2nd; Messrs. Prior & Sons, 3rd. With twenty-four single blooms, Mr. W. Taylor, Hampton, was 1st, the blooms fresh but smallish; Mr. Rumsey, Wrotham, Kent, was 2nd; and Mr. T. Butcher, Norwood, 3rd. A very good twenty-four was disqualified because blooms of Comtesse Dechoisnel and Camille Bernardin were pronounced the same. Messrs. Prior & Sons had the best eighteen Tea and Noisette Roses, a capital lot of blooms; Mr. F. Cant coming 2nd; and Mr. B. R. Cant, 3rd. Messrs. Prior & Sons had the best twelve Teas of one variety in beautiful blooms of Marie van Houtte; Mr. B. R. Cant being 2nd with Madame de Watterville; Madame Cusi from Mr. Rumsey being 3rd. The best hybrid perpetual, one variety, was Horace Vernet from Messrs. Prior & Sons; Gustave Piganeau being 2nd, and Marie Baumann, 3rd. Mr. Rumsey had a box of bunches of Tea Roses, *L'Idéale*, reddish salmon, very lovely in the bud.

The Amateur's Classes.—These were well filled. Mr. Brown, gr. to Mrs. Waterlow, Great Doods, Reigate, took the Challenge Vase for the present year with forty-six good blooms; Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Reigate, coming 2nd; and Mr. Meane, gr. to A. Tate, Esq., Woodside, Leatherhead, was 3rd. With twenty-four blooms, Mr. E. M. Bethune, Deune Park, Horsham was 1st; Mr. P. G. Barnard, Reigate, coming 2nd; and Mr. W. Blundell, gr. to C. Cristy, Esq., Westerham was 3rd.

With twelve Roses, one variety, Mr. Tucker, Swanley Junction, was an easy 1st, as he had superb blooms of Her Majesty, one of his box being placed as the premier flower in the amateur class; Mr. Brown was 2nd, with the same variety.

Mr. Bethune had the best eighteen Tea Roses; and Mr. Brown the best dozen.

Table Decorations were very attractive, several large tables being dressed very much after what are now regarded as the fashionable taste. One having three ordinary glass epergnes was placed 1st, and one having wire arches gaudily dressed with Shirley and Iceland Poppies was 2nd. Mr. Butcher had one table, not in competition, dressed with very lofty narrow arches, thinly covered with rich-coloured Poppies, which could hardly be termed pleasing. Mr. Chaff showed a very handsome basket of Roses, wreaths, bouquets, and ladies' wreaths or sprays.

Fruit was moderate in quantity and quality. Mr. J. Slater had the best six dishes of black and white Grapes, Amsden June Peaches, Bigarreau Cherries, President Strawberries, and a small Melon; Mr. Smith was placed 2nd.

There were no black Grapes, but some fair white ones, the best three bunches (Backland Sweetwater) coming from Mr. Dangersfield, gr. to A. Steer, Esq., Norwood.

Mr. J. Slater had the best fifty Strawberries, in Sir Joseph Paxton. Sutton's A 1 Melon was the best, and Telegraph the best brace of Cucumbers.

Mr. J. Slater had the best basket of vegetables, in nine varieties; and Mr. Perrett the best basket of salading.

Cottagers' vegetables were very good and plentiful. Mr. R. Goaring, South Wimbledon, exhibited his metal plant suspender, for sustaining plants in pots in houses corridors, &c., and which seems to be a very useful article.

LEE, BLACKHEATH, AND LEWISHAM HORTICULTURAL.

JULY 7, 8.—This Society held its twenty-fifth annual exhibition on these dates. Favourable weather upon both days, and a larger show than has been seen there, we think, at all, resulted in a thorough success. There were seventy-two entries over and above the number that exhibited last year, and the general excellence of the exhibits in the plants and fruits superior to those seen on former occasions. Usually *Gloxinias* are quite a specialty here, but although there were

some very fair specimens to be seen last week, they were not quite up to the standard generally seen at Lee. To commemorate the twenty-fifth annual exhibition, a Silver Medal was offered to nurserymen only, for the best and most tastefully arranged group not less than 60 superficial feet, and Messrs. Peed & Son, Roupell Park Nurseries, Norwood Road, S.E., were the winners of the same, with a well-arranged group of miscellaneous stove and greenhouse plants, but unfortunately there was little competition in this class.

For six plants of ornamental foliage, the 1st prize was awarded to W. Strang, Esq., Lee Terrace (gr., J. Mullins), for a very creditable collection; H. W. Segelcke, Esq., was 2nd.

Caladiums were perhaps shown better than anything else in the whole of the exhibits, and J. Soames, Esq., J.P., Maze Hill, Greenwich (gr., C. Nunn), was 1st, for a group of six, with very first-rate stuff, the plants being some 4 feet through. This exhibit also obtained the Silver Medal offered by the *Gardeners' Magazine*, for the exhibit showing the highest cultural skill. Mrs. Penn, The Cedars, gr., F. Fox, was 2nd with another very creditable collection. For four *Caladiums* (nurserymen excluded), C. D. Abel, Esq., Eastcombe Villa, Blackheath (gr., W. Payne), showed very well, and secured 1st position.

Twelve stove or greenhouse plants.—These were well shown, and Mrs. Crundell, The Moat, Eltham, was 1st, with an interesting and meritorious collection, and likewise for twenty-four miscellaneous plants.

The best *Gloxinias* were shown by J. Soames, Esq., who with a plant of *Kentia Fosteriana*, was 1st for a single Palm, and in the competition for a group of plants arranged for effect, occupied a similar position, as well as in the class for four stove or greenhouse plants, in flower, other than Orchids, with *Clerodendron Thomsonianum*, *Kalosanthes coccinea*, *Hydrangea hortensis*, and a fairly well-flowered *Azalea indica*. H. W. Segelcke, Esq., was 1st for four distinct exotic Ferns, and for six *Dracenas*, with *D. amabilis*, *D. Ferriense*, *D. Baptisti*, and *D. Lindenii*, the latter, however, having but little colour. Mrs. South, Morden Road, Blackheath, was 1st for four ornamental *Begonias*, with some varieties of *B. Rex*.

Roses.—The best Roses were exhibited by C. E. Shea, Esq., Fooks Cray, Kent, who was 1st for twenty-four single specimens, and for twelve single specimens, also for six Roses, H.P.'s, any variety, with Madame Gabrielle Luizet.

Pelargoniums.—Mrs. Crundell, The Mount, Eltham, was 1st for six show *Pelargoniums*, and for the zonals also, with very good stuff, especially in the latter class. J. Murray Wilson, Esq., Lee Terrace (gr., C. Saville), was 1st for six hardy Ferns, very nice clean plants, but showing evidence that they had just been brought from under glass.

Fruit, although in greater quantity than last year, was not of extra merit. W. G. Dawson, Esq., Plumstead Common (gr., L. A. Hester), was 1st for a miscellaneous collection of not less than four varieties. J. Vavasseur, Esq., was 1st for three bunches of black Grapes, with very fair black Hamburg; and also for white Grapes, with fair Duke of Buccleugh.

Vegetables were better represented, and in most of the classes there were keen competition. For a collection of vegetables and salad, Mrs. Penn, The Cedars, was 1st; and for a collection of eight dishes of vegetables, J. Neighbour, Esq., Bickley Park, was 1st. The same position in the collection of six dishes being filled by J. Wainwright, Esq., Belmont Hill, Lee (gr., J. Pearce). The 1st prize for a collection of vegetables shown by a cottager, was gained very creditably by Mr. Court, Knowles Hill Crescent, Lewisham. Potatoes looked good, but were rather small; Mr. J. Neighbour's Ashleaf was the best kidney, and his Eight Week's the best round Potato.

MISCELLANEOUS.

Besides those we have enumerated, there were others in the plant, cut flower, fruit, and vegetable groups, including classes for ladies, for children, and for cottagers. Also many special prizes, offered by nurserymen and others for specific exhibits.

Amongst the non-competitive displays, we must mention a very fine group of single *Begonias* (tuberous) from Mr. H. J. Jones, Ryecroft Nursery, Lewisham, who had staged them very tastefully with pots of Maidenhair Fern. The same exhibitor almost filled one side of one of the tents with a magnificent display of *Geraniums*, Ivy-leaved, zonal, and show varieties. Messrs. Laing & Son, Forest Hill, had a pretty group of miscellaneous plants, also

a collection of cut flowers, hardy perennial Roses, &c. Messrs. Carter & Co., High Holborn, had a collection composed of small specimens of succulent plants, interesting and rare, and Mr. W. Curton, floral decorator, Blackheath, had wreaths, crosses, sprays, baskets of flowers, &c., which looked very delicate and inviting at the entrance to one of the tents.

REIGATE ROSE SHOW.

JULY 9.—The annual show took place in the beautiful grounds of Woodhatch Lodge, the residence of T. B. Haywood, Esq., whose able gardener, Mr. C. J. Salter, has the place in perfect trim. The show was an excellent one, fine quality of bloom being the distinguishing feature throughout. We append a few notes of the principal exhibits. For forty-eight blooms, 1st prize, Mr. Frank Cant, Colchester; very noteworthy were Suzanne-Marie Rodocanachi, Comtesse de Nadaillac, Innocente Pirola, and François Levet. 2nd, Mr. B. R. Cant, Colchester, with a beautiful lot; Niphetos and Charles Lefebvre were very good in this stand. 3rd, Messrs. Paul & Son, Cheshunt, a bright and fresh collection. For eighteen Teas, 1st, Mr. Frank Cant, a very close 2nd being Mr. George Prince, Oxford.

For twenty-four blooms, amateurs, 1st, Mr. C. J. Salter, gr. to T. B. Haywood, Esq., who had some remarkably fine flowers of A. K. Williams and Alfred Colomb; 2nd, Rev. J. H. Pemberton; 3rd, Mr. Brown, gr. to Mrs. Waterlow. In the amateurs' division for eighteen blooms, 1st, E. B. Lindsell, Esq., a very fine stand, containing splendid flowers of Marie Baumann, Gustave Piganeau, Abel Carrière, Dupuy Jamin, and Earl of Dufferin; 2nd, Mr. S. P. Budd; 3rd, Mr. A. Tate.

For twelve blooms, 1st, Rev. H. A. Berners; 2nd, Mr. J. G. Fowler; 3rd, Mr. O. G. Orpen. For nine Teas, 1st, Mr. O. G. Orpen; 2nd, Rev. H. A. Berners; 3rd, Mr. Percy Burnand. For six Teas, 1st, Mr. W. A. Freshfield; 2nd, Mr. M. Hodgson; 3rd, Mr. J. de la Marle. For twelve Teas, 1st, E. B. Lindsell, Esq.; 2nd, Mr. S. P. Budd; 3rd, Mr. T. W. Girdlestone. For four vars., three trusses each, 1st, Rev. H. A. Berners; 2nd, Mr. C. E. Cuthell; 3rd, Mr. E. Mawley. For nine blooms of any variety, 1st, Mr. Percy Burnand (Marie Van Houtte); 2nd, Mr. C. E. Cuthell, with the same variety; 3rd, Rev. H. A. Berners (Eclair). For two of any variety, 1st, Mr. E. B. Lindsell (Caroline Kuster); 2nd, Mr. E. M. Bethune (Madame G. Luizet); 3rd, Mr. A. Slaughter (Alfred Colomb).

Garden Roses, shown in bunches, constituted a really delightful feature, the principal prize-winners being Messrs. T. W. Girdlestone and Mr. A. Tate. Polyantha Roses were well staged by Messrs. Tate and Cuthell.

The table decorations of Miss E. S. Watney and Miss B. Lorent were in beautiful taste. Amongst subjects not for competition may be mentioned a nice group of flowering and foliage plants from Messrs. Peed & Sons, Roupell Park Nurseries, an attractive display of hardy flowers in variety; and cut Roses from Messrs. J. Cheal & Sons, Crawley; a charming box of Rose l'Idéal, from Mr. S. G. Rumsey, Wrotham, Kent, who had a number of other varieties; cut Roses in variety from Mr. Will Taylor, Hampton; and some wonderfully fine blooms of Rose Her Majesty, from Mr. Brown, gr. to Mrs. Waterlow.

It is very necessary that the exhibitors' addresses should be given on the cards for the information of press representatives and the general public, omissions of which were very frequent at this exhibition. We refer more particularly to the amateurs' exhibits, as the trade may be always expected to have matters right in this direction.

EALING HORTICULTURAL.

JULY 13.—The twenty-eighth annual summer exhibition of this prosperous suburban Society took place in the grounds of Gunnersbury Park, by the kind permission of the Messrs. de Rothschild on this date.

The show compared favourably with its predecessors, the details incidental to such an exhibition being most satisfactorily carried out by the indefatigable secretaries, Messrs. Cannon and Dawes.

Groups of plants arranged for effect.—1st, with a remarkably pretty arrangement, Mr. Denison, gr. to T. A. Gledstanes, Esq., Manor House; 2nd, Mr. Roberts, gr. to J. Harris, Esq.

Six fine foliage plants.—Here again Mr. Denison led, with well grown examples.

Four flowering plants.—Honours in this class were well taken by Mr. Long.

Some magnificently-flowered specimens of Gloxinias gained the premier position for Mr. J. Beesley, gr. to A. Fraser, Esq.

Twelve bunches of Gloxinias, wonderfully fine flowers, gained 1st place for Mr. T. Shingle, gr. to M. Hulbert, Esq.

Fuchsias were a nice feature, the principal exhibitors being Mr. C. Long, and Mr. A. Jones, gr. to E. Hyde, Esq.

Cut Roses formed a good display, the premier prizes in the trade being secured by Messrs. Paul & Son, Cheshunt, and Mr. C. Turner, Slough.

Mr. George Cannon, manager to Messrs. C. Lee & Son, Ealing, staged (not for competition) a beautiful collection of Rose blooms, representing all the best varieties. The hardy herbaceous plants from Messrs. Lee were also very noteworthy; Messrs. Veitch & Sons, Chelsea, also contributing, not for competition, a charming display.

The Gold Medal of the National Rose Society for eighteen Roses was well taken by Mr. C. Long, and this is the third time he has accomplished this feat; 2nd, Mr. N. Ponting; 3rd, Mr. A. Jones, gr. to E. Hyde, Esq.

Messrs. W. Fromow & Sons, Sutton Court Nursery, Chiswick, staged a bank of flowering and foliage plants, not for competition, in which section Mr. J. Hudson, Gunnersbury House, made quite a new and most effective departure in group exhibiting, by staging a group arranged in a square, and to which we intend to refer on a future occasion. The non-competitive group of Carnations, consisting of finely-flowered plants from Mr. Reynolds, gr., Gunnersbury Park, formed quite a noteworthy feature of the show.

Mr. Cooper, gr. to E. M. Nelson, Esq., staged a pretty group of foliage and flowering plants.

Much interest centred in the class for a collection of vegetables, the 1st prize for which, a Silver Watch offered by Mr. A. Pooley, was, in a keen competition, awarded to Mr. Goldsworthy, 12, Bayham Road; 2nd, Mr. Harman, 8, St. Helen's Road. The cottagers' exhibits of vegetables were worthy of all praise.

SCOTLAND.

CUCUMBER DISEASE IN THE NORTH.

THERE are several diseases which attack Melons, Cucumbers, and Vegetable Marrows. These vexatious maladies were, to practical gardeners, something like a calamity about thirty years ago, and appeared to be most common where the cultivation of Melons had for years been a leading feature in the establishment. It was combated with in earnest by many of the leading cultivators without any apparent satisfactory results. I refer at present to that disease which causes curling up of foliage and young growths; the other two known to me were the sudden death of a whole plant or part of one, and the always common disease known as canker. The first evil indicated above appears to be a fungus, and does not remain alone with the Cucumber family, but extends its destructive powers to Capsicums, Tomatos, French Beans, Celosias, and a few other plants we have associated with Melons grown on shelves in Pine-houses. I notice that Cucumbers (the young shoots of which died off when a few inches long), and most of the Melons suffered more or less, but one which is well-known for robust and hardy habit (Morris' Little Heath) has formed large green foliage, and produced fruit grown in pots 9 lb. and over, while Reid's Scarlet-flesh, our favourite Blenheim Orange, La Favourite, and others have suffered much, but bearing nice fruit from 3 to 4 lb. The Little Heath is a good Melon when ripened, with abundance of large healthy foliage, liberal supplies of air, and not heavily watered at the roots, which is easily managed when grown in pots. Canker I never had on plants in pots. A small handful of charcoal pounded finely and put round the stem helps to ward off this disease, but gross stems and rich soil are productive of canker. The dying-off piecemeal, or all at once hurriedly, is the most perplexing disease of the three. Once, when I was employed in a London nursery (now extinct), this disease was quite masterful over every effort to assuage it, and put me much in mind of the disease which is so common with the Apricot. I have seen

in Suffolk whole beds of ridge Cucumbers cleared off with it, causing consternation among cottagers who grew Cucumbers to pay their house rent. We find Gishurst Compound, with sulphur added, to arrest the progress of the fungus disease. I notice it is very general in these parts (Stirlingshire) especially among Tomatos, Melons, and Cucumbers. *M. Temple.*

METHVEN'S INVERLEITH NURSERIES.

This firm has gigantic nurseries, but the Inverleith glass and grounds may be looked upon as an auxiliary nursery to the larger spaces covered with collections of trees, shrubs, and glass. Having half an hour to spare, I looked in on Mr. McKenzie (the enterprising manager at Inverleith Nursery), and found, as on former visits, the whole of the contents of the glass structures (except large Camellias, Azaleas, and other huge plants, kept for supplying cut flowers in winter and spring, were in the transition state, which means that the plants in flower, ready for sale or for decorative purposes, were being thinned out and re-arranged by adding succession stock, in order to take the place of their departed fellows. When visiting such nurseries, and there are many others around Edinburgh, one may pause and ask themselves the question, "Where can so many thousands of plants in pots be sent to?" It does not, of course, all go to country gardens, nor to the largest of suburban gardens, but the taste for foliage and flowering plants is largely on the increase among most of the middle, and even the working-classes, so that nursery growers must cater for the general public, as well as their aristocratic customers, far and near. It is not only flowering plants that have to be grown in immense numbers; but shrubs, dwarf in habit, or kept dwarf by cultivation, are grown by thousands. At Inverleith, the quantities of Retinosporas (especially *R. plumosa aurea*), Aucubas, Cupressus, Hollies (especially variegated ones), and many other species, indicate that the taste for substantial and permanent plants is increasing, and ordinary bedding-plants do not monopolise space in gardens to the extent they once did. Roses, Carnations, and herbaceous plants, are among the specialties; English Iris, Gladiolus The Bride, and others of this class, are grown in great quantity to meet the growing demand for flowers in a cut state.

Passing by pits filled, or which were lately so, we enter long span-roofed houses filled with Callas, Cliveias, pyramidal *Elaeagnus variegatus*, Euryas (also hardy), Pelargoniums, semi-double especially being much valued for cutting; they seem to have had a new lease of life, as they are now often seen in great numbers in private places as well as in nurseries. Euonymus are being propagated in great numbers for winter use. Chrysanthemums, of course, are in great abundance, both for large and small flowers; long lines are planted out, for September cutting, in the open ground. The larger flowers are not valued so much for general decorative purposes, but are suitable for low glasses on tables, and are much in request for this purpose, whilst smaller flowers when grown in clusters of five or six, with a good stem, are most valued for room decoration.

Though the demand for flowers, cut and in pots, has greatly increased of late years, the means of supplying them have extended proportionately. The Messrs. Methven, like their compeers, have to make special efforts to keep pace with the times, and retain their position. Their wreath, spray, and bouquet-making is a trade in itself. *M. T.*

COLONIAL NOTES.

THE MANGOSTEEN, GARCINIA MANGOSTANA.

THE following article, which appeared in the November number (1891) of the *Trinidad Agricultural Record*, is from the pen of Mr. J. H. Hart, recording the successful transmission of Mangosteen fruits into England during the latter part of 1891. It occurred to me that it might be of some interest to readers of the *Gardeners' Chronicle*.

"The first number of the *Agricultural Record*, published in 1889, contained an account (extracted from the *Gardeners' Chronicle* of November, 1875) of the sending to England by my predecessor, Mr. Prestoe, of two Mangosteen fruits as a trial shipment, it being the first time on record that fruit of the tree had been produced in the western world, and the account states that they arrived in excellent order, and were much appreciated.

"The tree being in fruit in September last (1891), at the time Sir F. Napier Broome, K.C.M.G., was leaving for England, His Excellency expressed the wish to take some of the fruit with him, with the view of presenting it to the Queen, it being reported that the Mangosteen was almost the only fruit worth eating which Her Majesty had never tasted. I received instructions, therefore, to prepare a consignment for the purpose, and to give directions for the care of the fruit during the voyage. The care of the fruit was personally supervised by His Excellency, and with such success that the fruit reached London in excellent condition, and was forwarded at once to Her Majesty at Balmoral. The following will show that it was much appreciated by Her Majesty:—

"Buckingham Palace, October 12, 1891.

"DEAR SIR FREDERICK BROOME,

"The fruit has duly been received at Balmoral, and with your letter, has been given to the Queen.

"I am commanded by Her Majesty to thank you for these Mangosteens, and I may add that the Queen says at the same time 'they were quite excellent.'

"Yours sincerely,

"HENRY F. PONSONBY."

"Can Trinidad claim the honour of being the first of the Queen's possessions to afford Her Majesty the opportunity of tasting what is often called 'the finest fruit in the world?'"

"The tree is a native of Singapore, and besides the specimen growing in the Royal Botanic Gardens, Trinidad, there is only one other fruiting tree known to exist in the Western Hemisphere, and that, a tree of much smaller size than ours, is growing in the Botanic Gardens, Castleton, Jamaica. The fruits were packed in a single layer, in a shallow box, in nests of cotton-wool. Instead of placing them in the ice-closet of the steamer, directions were given that they should be placed in an airy position in an empty cabin, with the lid and upper packing removed until cool weather was encountered. The upper packing was then to be replaced, and the lid screwed down, taking care to keep the box in a warm position as the weather became cooler, and when removed from the ship to be covered with a woollen rug or other covering.

"This was similar treatment to that which resulted in the safe transportation of the No. 11 Mango from Jamaica to England in 1879, and is one which I am confident could be adopted with other tropical fruits much more successfully than the usual course of placing them in the ice chamber of a steamer."

In a paper on "Tropical Fruits," written by Mr. D. Morris, M.A., F.L.S., published in the *Gardeners' Chronicle* for July 24, 1886, reference is there made to the Mangosteen having fruited both in Trinidad and Jamaica. Mr. Morris winds up his very interesting paper—"Hence West Indian Mangosteens and Darians are objects not impossible to be seen in England during the next decade." *W. E. Broadway, Royal Botanic Gardens, Trinidad.*

Obituary.

MR. WILLIAM TOOGOOD.—The death of this well-known member of the horticultural and agricultural seed trade, which took place at his residence, Southampton, on Thursday of last week, removes one who had made, both as a business man and a seedsman, an excellent reputation. There was perhaps some natural pride on the part of the deceased that the Royal patronage bestowed upon his business enabled him to advertise himself as "The Queen's Seedsman," although honours of that description in no sense outweigh the reputation of a wide character for business integrity and ability, which Mr. Toogood possessed in a high degree. A good many years since he was in the service of the once eminent nur-

series and seed firm of Southampton, Messrs. W.B. Page & Sons. Then he became a partner in all that was finally left of the old business, that of the seed trade, with the late Mr. Bridgewater Page, and eventually became sole proprietor. With the well-known exception of the fine nurseries of Messrs. W. Rogers & Son at Red Lodge, Southampton now boasts of no other important nursery establishment, but has a very good seed trade especially of an agricultural kind. The late Mr. Toogood realising the importance of furnishing high class seed stocks to root growers, held every year in the town of Southampton a root exhibition, connecting with it also garden roots, of which good stocks for gardeners are not less important than are root stocks for farmers. Some few years ago Mr. Toogood's health suffered severely, but of late it materially improved. He was sixty-five at his death, and has left sons who now conduct the old and excellent business.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

A GARDENER wishes to know if there are any oil-lamp stoves invented capable of heating a house 36 by 12 feet with hot-water pipes; temperature required about 40° in winter. Position of house, where smoke is objectionable.

Mr. G. Sampson would be very grateful if any of our readers could tell him of any places where an "Allotments Association" is in existence on the co-operative plan.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.				No. of Rainy Days since Jan. 3, 1892.		Percentage of possible Duration for the Week.	
	Above (+) or below (—) the Mean for the week ending July 9.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
0	2 —	72	0	— 9 + 212	9 + 129	22.1	12	29
1	2 —	84	0	— 91 + 241	4 + 103	12.8	24	34
2	1 —	106	0	— 12 + 188	1 + 103	12.3	37	33
3	1 +	132	0	— 8 + 210	0 aver.	95	10.6	48
4	1 —	114	0	+ 20 + 250	0 aver.	87	10.3	39
5	0 aver.	127	0	— 37 + 138	0 aver.	72	7.9	53
6	2 —	88	0	— 53 + 193	11 + 102	20.1	25	35
7	1 —	106	0	— 17 + 165	3 + 102	15.3	32	36
8	1 —	111	0	— 8 + 117	2 + 89	11.7	37	42
9	2 —	90	0	— 53 + 122	8 + 109	17.3	29	33
10	1 —	106	0	— 27 + 132	6 + 97	16.8	34	37
* 1	+ 132	0	+ 33 + 42	2 —	94	12.3	67	49

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—0, Scotland, N.; 1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.

Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending July 9, is furnished from the Meteorological Office:—

"The weather during this week was extremely unsettled, with frequent and rather heavy rain in the western and northern parts of the Kingdom; but in

the south and east the conditions were generally fair, although rain fell during the middle part of the period, and again at some stations towards its close.

"The temperature was rather above the mean in 'England E.' and the 'Channel Islands,' and just equal to it in 'England, S.,' in all other districts, however, there was a slight deficit. The highest of the maxima, which were recorded on the 3rd over England, and on irregular dates in Ireland and Scotland, ranged from 85° in 'England, E.,' and 84° in the 'Midland Counties,' 81° in 'England, S.,' and 80° in 'England, S.W.,' to 68° in 'Ireland, N.,' 66° in 'Scotland, E.,' and 62° in 'Scotland, N. and W.' During the greater part of the period the daily maxima were below 70°. The lowest of the minima were recorded on very irregular dates, and varied from 40° in 'England, N.E.,' and 41° in the 'Midland Counties,' to 48° in 'England, S.W.,' and 52° in the 'Channel Islands.'

"The rainfall exceeded the mean in Ireland, Scotland, and the western and north-eastern parts of England; in the 'Midland Counties' and 'England, S. and E.,' however, it just equalled the normal, while in the 'Channel Islands' it was rather less. In Ireland and the north and west of Scotland, the excess was considerable.

"The bright sunshine continued fairly prevalent over the eastern and southern districts, but showed a decline in the north and west, where it was less than the normal. The percentage of the possible duration ranged from 67 in the 'Channel Islands,' and from between 48 and 53 in the east and south of England, to 29 in 'Ireland, N.,' 24 in 'Scotland, E.,' and to only 12 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, July 14.

TRADE slow, with heavy supplies. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Heliotrope, per doz.	3 0-6 0
Arum, per dozen	6 0-9 0	Hydrangea, per doz.	9 0-18 0
Aspidistra, per doz.	18 0-63 0	Ivy Geraniums, doz.	4 0-6 0
Begonias, per doz.	6 0-12 0	Lilium Harrisii, 12	18 0-30 0
Calceolaria, per doz.	3 0-6 0	Lobelia, per doz.	3 0-6 0
Coleus, per doz.	4 0-6 0	Marguerites, per doz.	6 0-12 0
Cyperus, per dozen	4 0-10 0	Mignonette, doz. pots	4 0-8 0
Dracenas, each	1 0-5 0	Musk, per doz.	2 0-4 0
Echeveria pyramidalis, per doz.	12 0-24 0	Palms, various, each	2 0-10 0
Ericas, various, doz.	12 0-18 0	— specimens, each	10 6 84 0
Ferns, various, doz.	4 0-9 0	Pelargoniums, p. doz.	8 0 12 0
— per 100	8 0-15 0	— scarlet, p. doz.	2 0-4 0
Ficus elastica, each	1 6-7 6	Roses, Fairy, p. doz.	5 0-8 0
Fuchsia, per doz.	4 0-9 0	Spiraeas, per doz.	6 0-13 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Tasmanian, per case	4 0-8 0	Melons, each	1 0-2 6
Cherries, 2½-lb.	3 0-5 0	Peaches, per doz.	3 0-10 0
Grapes, per lb.	1 0-2 0	Pine-apples, St. Michael, each	2 0-6 0
Lemons, per case	12 0-25 0	Strawberries, per lb.	0 3-1 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	2 0-4 0	Myosotis, or Forget-me-not, 12 bunches	1 6-4 0
Canterbury Bells, doz. bunches	2 0-4 0	Pansies	1 0 2 0
Carnations, 12 blms.	0 9-1 6	Pommes, doz. bun.	9 0-18 0
— 12 bunches	3 0-6 0	Pelargoniums, scarlet, per 12 bun.	4 0-6 0
Cornflower, 12 bun.	1 6-3 0	— 12 sprays	0 6-1 0
Eucharis, per dozen	2 6-4 0	Poppies, 12 bunches	2 0-6 0
Gardenias, per dozen	1 6-3 0	Primula, double	4 0-6 0
Heliotrope, 12 sprays	5 0-6 0	Pyrethrum	2 0-4 0
Iris	12 bunches 6 0-12 0	Roses, Tea, per dozen	0 9-2 0
Lilium candidum, 12 bloom	0 6-0 9	— coloured, dozen	1 0-1 6
— 12 bunches	18 0 24 0	— yellow (Maréchal), per doz.	2 0-5 0
— Harrisii, doz.	2 6-4 0	— red, per dozen	1 0-2 0
Maiden Hair Fern, 12 bunches	4 0-6 0	— Moss (French)	12 bunches 6 0-12 0
Marguerites, per doz. bunches	3 0-4 0	— outdoor, 12 bun.	2 0-6 0
Mignonette, 12 bun.	2 0-6 0	Spiraeas, 12 bunches	4 0-6 0
Orchids:—		Stocks, doz. bunches	3 0-6 0
Cattleya, 12 blms.	4 0-8 0	Sweet Peas, doz. bun.	4 0-6 0
Odontoglossum	— Sultan, 12 bun.	2 0-4 0	
crispum, 12 blms.	1 0-4 0	Tuberose, 12 blms.	0 4-0 9

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes Globe, ea.	0 4-0 6	Lettuces, per doz.	1 6-2 0
Asparagus, per bund.	1 6-6 0	Mushrooms, punnet	2 0-...
Beans, French, lb.	2 6-3 0	Mustard and Cress, punnet	0 4-...
Beet, red, per dozen	2 0-3 0	Parsley per bunch...	0 3-0 6
Carrots, per bunch...	0 4-0 6	Shallots, per lb.	0 6-...
Cauliflowers, each	0 3-0 6	Spinach, per bushel	3 6-...
Cucumbers, each	0 6-0 9	Tomatoes, per lb.	0 9-1 3
Endive, per dozen	2 0-3 0	Turnips, per bunch...	0 4-0 0
Herbs, per bunch	0 9-1 0		

POTATOS.

NEW POTATOS.—Kidneys, 5s. to 6s. 6d.; Rounds, 4s. 6d. to 5s. Market dull.

OLD POTATOS.—Season virtually over. Best samples command 100s. to 120s. per ton. *J. B. Thomas.*

SEEDS.

LONDON: July 13.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., state that the seed market to-day was devoid alike of business and of interest. As regards new French Trifolium, buyers anticipating, either rightly or wrongly, lower prices, still hold aloof. Mustard and Rape seed kept firm. The reshipment to America of Canadian blue Peas strengthens the English market. In Canary seed the tendency continues upwards. Hemp and Linseed are neglected. For Spring Tares there is still some sale. Haricot Beans, Dari, Buckwheat, and Millet realise former terms. The Board of Trade Returns give the imports into the United Kingdom of Clover and grass seeds for the first six months of this year as 178,831 cwt., value £400,569 as against 148,945 cwt., value £328,789, for the corresponding period of 1891.

FRUITS AND VEGETABLES.

BOROUGH: July 13.—Quotations:—Cauliflowers, 2s. 6d. to 3s. per dozen; Cabbages, 3s. to 5s. per tally; Peas, 2s. to 3s. 6d. per bushel; Greens, 1s. 6d.; new Carrots, 3s. 6d. to 4s.; Spring Onions, 3s. to 5s. per dozen bunches; Egyptian do., 3s. 6d. to 4s. 6d. per cwt.; English Apples, 3s. per bushel.

FARRINGTON: July 14.—Quotations:—Cabbages, 5s. to 6s. per tally; Carrots (new), 5s. per dozen (large) bunches; do. small, 3s.; Turnips, 5s. per dozen large bunches; spring Onions, 4s. to 5s. per dozen bunches; Egyptian Onions, 5s. per cwt.; Peas, 5s. to 6s. per bag; Cucumbers, frame, 2s. 6d. per dozen; do. natural, 1s. 6d. to 2s. per dozen; foreign Tomatoes, 9d. to 1s. 3d. per 8 lb. box; Cherries (white), 3s. to 5s. per half-sieve; do., black, 3s. 3d. to 7s. do.; Strawberries, 3s. to 4s. 6d. per peck; green Gooseberries, 3s. per half-sieve; red do., 3s. 6d. per half-bushel.

POTATOS.

BOROUGH, July 13.—Quotations:—St. Malos, 3s. 6d. to 4s. 6d.; Jerseys, 4s. 6d. to 5s. 6d.; Cherbouge, 4s. to 5s. per cwt.; English Early Rose, 70s. to 80s.; Hebrons, 80s. to 100s. Old: Bruce Magnums, 90s. to 100s. per ton.

FARRINGTON: July 14.—Quotations:—Magnums, 85s. to 100; Jersey, 90s. to 100s.; White Beauty, 4s. 6d. to 5s. per cwt.

GENERAL AVERAGE: July 13.—English Kidneys, 5s. to 5s. 6d.; Jersey, 4s. 6d. to 5s. 6d.; French, 3s. 6d. to 5s. per cwt. Old: Hebrons, 80s. to 100s.; Magnums, 90s. to 100s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 105s.; inferior, do., 40s. to 75s.; hay, best, 60s. to 98s.; inferior, do., 20s. to 50s.; and straw, 20s. to 38s. per load.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending July 9, and for the corresponding period last year:—1892: Wheat, 29s. 2d.; Barley, 24s. 4d.; Oats, 21s. 7d. 1891: Wheat, 38s. 7d.; Barley, 26s. 2d.; Oats, 20s. 11d.

NOTICES TO CORRESPONDENTS.

* * PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We have been pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

BANANAS: J. D. S. Musa Cavendishi and M. Paradisaica are the varieties grown in hothouses in this country. We doubt if they are grown commercially anywhere out of the tropics. The above species are fairly good, but a much finer-flavoured species is grown in British Guiana, the fruits of which have reached us in the dried state within the past year or two. The fruits are small, half the size of those of Musa Cavendishi, and in the dried state they bear transit admirably. The senders in George Town hope to create a trade in them in this and other temperate countries.

BEGONIA BAUMANNI: C. E. Since answering you in a previous number, a foreign correspondent has kindly furnished the required information. It is to be bought of Mr. Lemoine, at Nancy, for 4 francs each, or 12 for 28 francs.

BOOK ON IRRIGATION IN CALIFORNIA: C. H. R. An enquiry of Messrs. Williams & Norgate, foreign booksellers, might be of value in eliciting an answer. We know of none.

CLEMATIS: Bloomfield. Send the flowers to some one who has a good collection of these plants.

CORRECTION: Show at Earl's Court. Messrs. E. Shuttleworth and Co.'s exhibit, see *Gardeners' Chronicle*, July 9, p. 50, col. a.; for "Silver Medal," read "Gold Medal."

CUCUMBERS DISEASED: F. Hall. The fruits are attacked by a fungus, and you must clear out the soil and the plants. Wash the glass with arsenical water, 1 oz. to the gallon, washing this mixture off with clean water before it is dry; and limewash the walls. The spores of the fungus may be in the soil you have been using, and it will be advisable to procure soil, &c., from another source. The close, humid warmth of the ordinary Cucumber pit is particularly favourable for the development of fungous growth.

FILBERTS: C. E. M. An excellent crop.

INSECT ON POTATOS: C. H. Perkins. An aphid.

NAMES OF PLANTS: John Hopper. Specimens dried up before we received them. So far as we can make out, they are—1, Anthyllis vulneraria; 2, Echium vulgare; 3, Trifolium arvense; 4, Daucus carota; 5, some umbellifera quite undistinguishable in its present state.—S. W. 1, Lychnis chalcidonica; 2, Veronica spicata; 3, Gnaphalium lanatum; 4, Geranium sanguineum; 5, Verbascum thapsus; 6, Lysimachia thyrsiflora; 7, Eschscholtzia californica; 9, Ferula sp.—O. O. Asclepias curassavica.—G. H. 1, Ginkgo biloba, the Maiden-hair tree; 2, Spiraea sp.; 3, Edwardsia microphylla; 4, specimen insufficient.—J. E. 1, (E)nothera Lamarckiana; 2, Geranium pratense; 3, Lysimachia clethroides; 4, Pyrethrum Parthenium; 5, Gnaphalium lanatum.—F. S. Cœlogyne speciosa. The material used is correct. Grow in warm house.—R. S. Orchis foliosa.—R. Y. A. All withered, and labels mostly gone astray. We believe them to be—1, Lotus corniculatus; 2, Achillea Millefolium; 3, Veronica sp.; 4, Stellaria graminea; 5, Centaurea nigra; 6, Prunella vulgaris.—S. B. Send when in flower.—G. S. Cœlogyne speciosa.

PEAS DESTROYED FROM ROOTS UPWARD: F. E. M. Something deleterious may have been applied to the land, as gas-lime, strong manure-water, &c. The roots are intact, but dead.

PELARGONIUM LEAVES: W. H. A peculiar thickening of the skin of the leaf; there may be fungus also. We will report later on.

REPORTS OF SHOWS: J. P. & Sons. We can have no animus against exhibitors, as it would be quite against our interests—of that you may be quite assured; but it is impossible, with the space at our command, for us to report everything at a large show, especially one of an unofficial character.

ROSE LEAF CURLED: G. D. We found a small caterpillar, which has probably caused the mischief.

ROSE SPORT: F. M.—Your sport is distinct and interesting, but there are so many Roses of a similar colour as good as your's, if not better, that we hardly think it would be worth your while to propagate it.

THE APPLICATION OF ARTIFICIAL MANURES, &c. H. W. J. P. M. The pamphlet may be had of H. & E. Albert, 17, Gracechurch Street, E.C.

TOMATO DISEASED: Constant Reader. The fruits are attacked by Cladosporium lycopersici, for description and figure of which, see *Gardeners' Chronicle*, October 1, 1887.

TOMATO LEAVES: H. H. Badly affected with the Tomato fungus. Cut off all the affected leaves, and burn them. We fear it has gone too far for any application to do good.

COMMUNICATIONS RECEIVED.—W. A. Green, Jun.—D. S. T.—D. W. W.—J. B. R.—J. G. B.—Prof. Dehérain.—R. W.—C. B. L. S.—Dr. Bataine, St. Petersburg.—Dr. Kranzlin, Berlin.—C. F. Y.—C. de B.—W. E. G.—A. J. B.—J. K.—J. J. W.—J. D.—F. W. B.—H. W. W.—F. V. D.—Dr. Klebahn, Bremen.—W. W. E.—D. S.—C. Cundy.—M. T.—H. W. W.—H. J. R., Firenze.—J. T. N.—G. W.—J. O'B.—A. P.—A. Dénant.—W. B. H.—W. J. S.—D. T. F.—B. M.—C. T. D.—J. B. W.—E. M.—J. R.—H. E.—J. S.

PHOTOGRAPHS RECEIVED.—A. E. M. E. O., with thanks.—U. S. K.

The GREATEST NOVELTY of the AGE!

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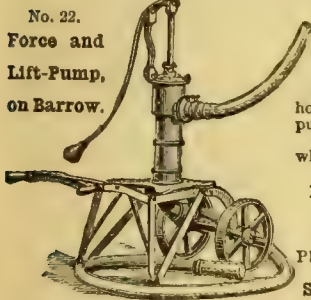
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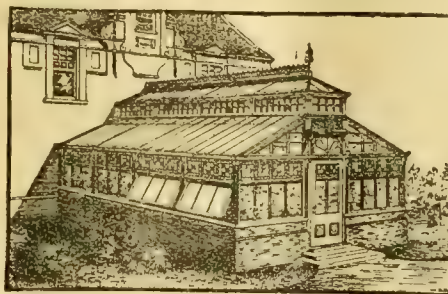
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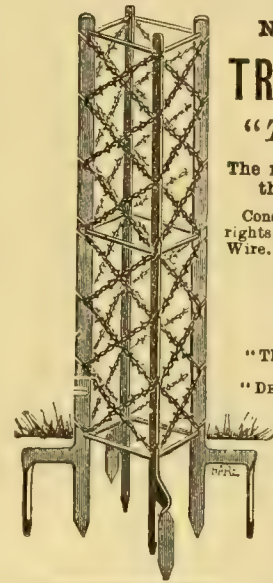
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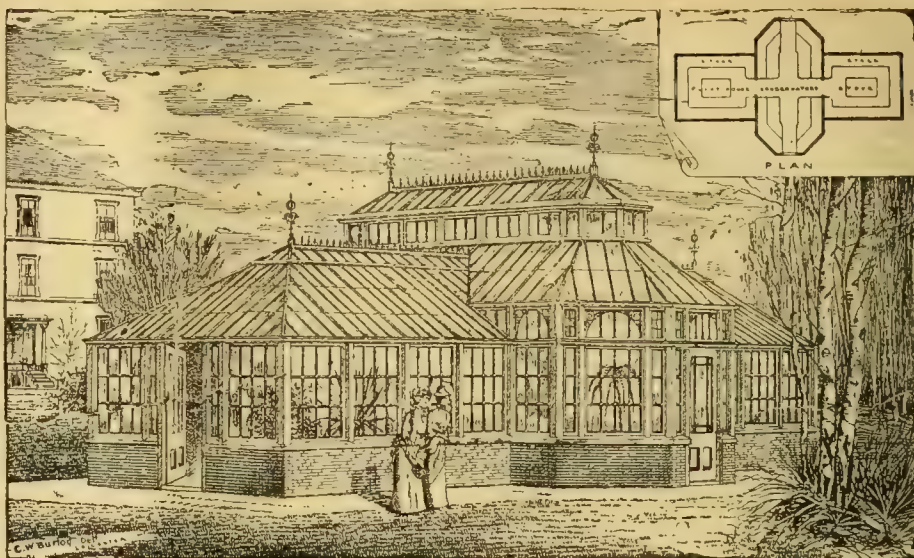


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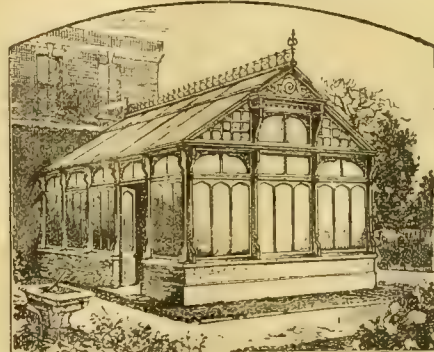
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By order of the Owner, who is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS will sell by Auction on the premises, Hughenden, 19, Palace Road, Streatham Hill, S.W., on **TUESDAY NEXT**, July 26, at 1 o'clock precisely, the whole of the **STOVE and GREENHOUSE PLANTS, CAMELLIAS, and AZALEAS, ASPIDISTRAS, PALMS and FERNS**, a few **ORCHIDS, CHRYSANTHEMUMS**; the erection of Three Greenhouses, Pits, Hot-water Piping, Boiler, Lawn Mower, Garden Tools, Pots, Ladders, Light Spring Bath Chair, and other effects.

On view day prior and morning of Sale. Catalogues may be obtained on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Stamford Hill. Without Reserve.

ABSOLUTE CLEARANCE SALE. By order of the Proprietor, who is going abroad, and relinquishing the Business.

IMPORTANT TO PALM GROWERS, DECORATIVE FLORISTS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION on the Premises, The Palm Nursery, 106, Stamford Hill, N., a few yards from the Stoke Newington Station, G.E.R., on **WEDNESDAY and THURSDAY NEXT**, July 27 and 28, at 12 o'clock precisely each day, without reserve, by order of Mr. W. Owen, the whole of the **STOCK-IN-TRADE**, comprising thousands of well-grown Palms in various sizes, particularly worthy of the attention of the Furnishing Trade and Private Buyers, including 100 Specimen *Lantana borbonica*, 500 fine plants of *Chamaecyparis excelsa*, 2½ feet to 5 feet; 100 *Cocos plumosa*, good plants; large quantities of *Seafortia elegans*, *Areca sapida*, *A. Baueri*, *Corypha australis*, *Phoenix reclinata* and *tenuis*, *Kentia Belmoreana* and *Fosteriana*, 1000 *Dracana congesta* discolor, and rubra, in 48-pots; 200 *D. indivisa*, small plants; *Aspidistra lurida variegata*. The Erections of 6 Greenhouses, about 3600 feet of Hot-water Piping, mostly 4-inch; capital Steam Boiler, also 2 other Boilers, Flower-pots, Office, and other Effects.

May be viewed two days prior to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

N.B.—The Vendor has made arrangements for a large Marquee to be erected at the Nursery into which plants will be removed. The Sale will take place in this Marquee, which will afford ample accommodation for intending purchasers to view the plants, and avoid walking through the Greenhouses.

Building Land at Cheshunt, Herts.

Payment on the twelve years' system, if desired.

MESSRS. PROTHEROE AND MORRIS will offer for SALE by AUCTION, in a Marquee on the Estate, on **THURSDAY**, July 28, 1892, at 5 o'clock precisely, 98 Plots of **FREEHOLD BUILDING LAND**, situated about a mile from Cheshunt Station on the G. E. Railway, and in a district most justly celebrated for its picturesque scenery, for the healthiness and productiveness of its soil, and for the beautiful walks abounding throughout a grandly-timbered country. Though only about 13 miles from the City, and the population of the parish about 10,000, it is, nevertheless, exquisitely rural and scattered, and forms the centre of a large Rose-growing district. The estate is within sight of the park gates of Sir Henry Meux, through whose grounds there are lovely walks accessible to the public, and upon his property Temple Bar has been lately re-erected. The main sewer is laid in all roads, and Local Board's water laid on; and altogether this Sale offers a unique opportunity to City men of obtaining a building site within 35 minutes of town with beautiful surroundings.

Particulars and conditions of Sale may be obtained of Messrs. KERBY, SON and VERDEN, Solicitors, 14, Great Winchester Street, E.C.; of the Freehold Land and Building Corporation (Limited), 14, Wormwood Street, E.C.; and of the Auctioneers, 67 and 68, Cheapside, E.C. Second-class railway tickets may be obtained by intending buyers from the Company at 1s. 10d. each, which will be refunded to purchasers. Conveyances will be in waiting at the station. Dinner will be served to purchasers at the close of the Sale.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT**, July 29, at half-past 12 o'clock, **DENDROBIUM LINGULIFORME**, an extremely rare and interesting species of dwarf habit, with thick tongue-like leaves. Its elegant slender spikes bear each about a score of pure white fragrant flowers. The plants, which were collected in New South Wales, are in fine masses and in fine condition.

ANGRÆCUM ARCUATUM,

a very fine species with wax-like white fragrant flowers.

The fine yellow **POLYSTACHYA SMEDEEYANA**, and other species.

Also various **ESTABLISHED ORCHIDS**.

On view morning of Sale, and Catalogues had.

Friday Next.

A NEW LELIA.

MESSRS. PROTHEROE AND MORRIS will include in their **ORCHID SALE** on **FRIDAY NEXT**, July 29, 150 plants of a **NEW LELIA**, collected and sent home by Mr. F. Pechacek for unreserved sale. The collector writes that he found the plants in the Sierra Madre Mountains, and that they are not *Lelia Arnoldiana*, or *albida*, but quite different, and must be new. Two dried flowers taken from a spike found on one of the plants will be shown at the sale.

On view morning of Sale, and Catalogues had.

Arlesey, Bedfordshire.

On the main line of the Great Northern Railway, midway between Bedford and Baldock, and close to the **ARLESEY Station**, THE "WATERLOO" FARM, a Freehold and Tithe-free Estate of valuable **GARDEN LAND**, containing 330 acres, and having an extensive frontage to the road from Arlesey Station to Stotfold, let to Mr. Daniel at an annual rental of £875, to be SOLD by AUCTION, at the "Sun Hotel," Hitchin, on **TUESDAY**, July 26, 1892, at 4.30 o'clock precisely, by

MR. J. R. EVE and Mr. GEORGE JACKSON (who are jointly concerned).

The "WATERLOO" FARMHOUSE and HOMESTEAD and 230 acres of GRASS and ARABLE LAND will be offered in One Lot, and the remainder in Ten Lots, to suit the convenience of purchasers.

Also, the "OLD OAK" PUBLICHOUSE, Garden and Paddock, within 200 yards of the Arlesey Station, and a Plot of BUILDING LAND adjoining, both now let to Mr. Page, of Ashwell Brewery, at the rental of £50 per annum.

The tenancies of the whole of the Estate will terminate at Michaelmas next. Three-fourths of the purchase money will be advanced (if desired), on mortgage, at 4 per Cent. per ann.

Particulars and Plans can be obtained of Messrs. PRESS AND INSKIP, Solicitors, Bristol; of Mr. J. R. EVE, Bedford, Hitchin, and Luton; and of Mr. GEORGE JACKSON, Hitchin, Baldock, and Royston, Herts.

Ivinghoe, Aston.

Two miles from Cheddington Station, on the London and North-Western Railway.

MESSRS. CUMBERLAND and HOPKINS have received instructions from Mr. W. Ashby, to sell by AUCTION, in Nine Lots, on **FRIDAY**, July 29, 1892, at 4 o'clock, several ORCHARDS of FRUIT, about 25 acres in extent. The Orchards consist of Prunes and Damsons, and there is a capital crop. The usual credit will be given, on approved security.

May be viewed at any time, on application to Mr. ASHBY, of whom Catalogues may be had; also of the Auctioneers, High Street, Leighton Buzzard, Beds.

WANTED to PURCHASE, a genuine NURSERY and FLORIST BUSINESS. Country town preferred.—Reply, A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SEED BUSINESS, for Disposal.—Well situated, and near station in a city in the north of England. Terms moderate.—Apply, B. J., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Nurserymen, Florists, &c.

SUBSTANTIAL NURSERY PREMISES, constructed at great cost (Leasehold—over 60 years to run), to be DISPOSED OF, by Executors, at a small nominal premium. The premises are in working order, and comprise Greenhouses, Dwelling-house, Gardener's Cottage, Stabling, &c.; about 6 miles from Covent Garden, London.

Particulars will be furnished upon application to A. Z., 2, Wisteria Road, Lewisham, S.E.

LEYTON (Essex).—TO BE SOLD, FIVE GREENHOUSES, well-heated, and in good repair, standing on about ½ acre of ground, viz., Span-roof, 47 by 18.47 by 11, 45 by 13; Lean-to, 89 by 12, and 21 by 7½. Lease will be given of ground and six-roomed dwelling-house, and if needed more ground can be had near. Man with small capital could do well; good opening for jobbing.

Apply, **SMALL and CO.**, 23, Lime Street, London, E.C.

FLORIST and NURSERYMAN'S BUSINESS, with large **JOBBER TRADE** attached.—Two compact Nurseries, about 3 acres in extent, 8 Greenhouses, Stabling, 9-roomed Dwelling House. Good position in important fashionable suburb of London. Total rental £196 reduced to £74 by letting off. Price for Stock, Greenhouses, and Building, £1100 or offer.

Particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

ESSEX.—About 12 miles from Covent Garden. To Fruit and Plant Growers. 16 GREENHOUSES, 2 ACRES of GROUNDS, and DWELLING-HOUSE. Rental and particulars on application to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

TO LET, ST. GEORGE'S GARDENS, ST.

Annes-on-the-Sea, 12 Acres in extent. Extensive Vineries, Hothouses, &c., Tennis Lawns, and Bowling Greens. The Directors are prepared to receive offers. Possession, March 1, 1893. Particulars on application to

W. H. NUTTER, St. Annes-on-the-Sea.

TO NURSERYMEN and FLORISTS.—To be LET, at Edmonton, an ACRE of LAND, suitable for Nursery Purposes, adjoining Land Let to Florists. Rent moderate.—Particulars of Mr. ALFRED RICHARDS, Auctioneer, Lower Tottenham. (3-449).

PICTURESQUE ROCK SCENERY.—Forming Waterfalls, Lakes, and Streams, Ferneries, Winter Gardens, Alpineries, &c., as in hundreds of places about the kingdom, including at Aldenham House, Elstree, so faithfully illustrated in this journal of November 21, executed by **PULHAM and SON**, 50, Finsbury Square, London, E.C., and Broxbourne, Herts. Photo Illustrated Book sent for inspection on receipt of twelve stamps.

PROTHEROE and MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

TO be Sold, a Small Collection of **STOVE PLANTS and ORCHIDS**. Must be cleared. Offer wanted. Apply to J. WHELDON, Lord's Meade, Tottenham; Station, Bruce Grove.

EXHIBITIONS.

HESSLE and HOWDENSHERE HORTICULTURAL SOCIETY.

The GRAND SUMMER SHOW will be held in the Grounds of **TRANBY LODGE, HESSLE**, near **HULL**, on **WEDNESDAY and THURSDAY, JULY 27 and 28**.

Valuable Money Prizes, besides Silver Cups and Medals.

Open-Air Space to Let for Horticultural Sundries.

Schedules may be had from—

ERNEST M. CLARKE } Hon. Secs.
R. FALCONER JAMESON }

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EXHIBITION, Earl's Court, S.W.

CARNATIONS, PICOTEEES, and COTTAGE GARDEN PRODUCE.

A SHOW of the above will be held on **AUGUST 1, 2, and 3**, at which numerous Prizes are offered to Cottagers and Artisans. Cottagers and Artisans are those who cultivate their own cottage gardens or allotments, and are in receipt of weekly wages. Intending Exhibitors may be required to furnish proof of this fact.

Schedules may be had on application to **THE SECRETARY, International Horticultural Exhibition, Earl's Court, London, S.W.**

WILTS HORTICULTURAL SOCIETY'S

SHOW at Salisbury, on August 10, 1892.

PRIZES to the value of **ONE HUNDRED and FIFTY-FIVE POUNDS** are offered. Schedules may be obtained of

W. H. WILLIAMS, Hon. Secretary.

The Nurseries, Salisbury.

MAIDENHEAD HORTICULTURAL

SOCIETY.

ANNUAL SHOW at Curtisfield, Maidenhead, on **THURSDAY, August 11, 1892**. Entries close August 4. Schedules and particulars from—

O. KING, Hon. Sec., Ray Park Cottage.

SHREWSBURY GREAT FLORAL FÊTE,

AUGUST 17 and 18, 1892.

Schedules for 1892 are now ready. **SIX HUNDRED AND SEVENTY POUNDS** in PRIZES.

ADNITT and NAUNTON, The Square, Shrewsbury.

Fruit Trees a Specialty.

STRAWBERRIES, one of the largest and best collections in the Trade, including all the best of the New and Old Varieties. Full Descriptive Catalogue on application.

FRUIT TREES of all kinds, a very large stock.

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Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem,

Holland. Wholesale CATALOGUE now ready, and may be had free on application to—

Messrs. **R. SILBERRAD and SON**, 25, Savage Gardens, Crutched Friars, E.C.

N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.



It is absolutely necessary that all lovers of first-class gardening should pay our Nurseries a lengthy visit. Our many displays are splendid, and of the highest possible interest. **BEGONIAS** (The Editor of *Gardeners' Chronicle* says he opines any further improvement in this flower). **CACTUS DAHLIAS**, nothing touches them in the world. Our Stock of everything required for high-class Gardening and Prize Winners is of the first importance to those who intend to succeed. *Catalogues free.*

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THE LIVERPOOL HORTICULTURAL CO.

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HAVE AN

IMMENSE STOCK of ORCHIDS,

All in the finest health and condition,

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The Company earnestly request the inspection of their Stock by intending Purchasers.

New, Descriptive, and Priced CATALOGUES post-free on application to the Company.

THE VINEYARD AND NURSERIES, CARSTON, NEAR LIVERPOOL.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to **SANDER'S**, St. Albans. The finest
stock of Orchids in the World.—30 minutes from St. Pancras.

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HARTLAND'S THIRTY-SIX VARIETIES for **FORCING**
PURPOSES. A Card, giving names and prices per 100,
post-free to all applicants. The Bulbs are now ready, and
simply magnificent.

WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

150,000.—Special Offer of Kentias.
W. ICETON has a large quantity of the
above to offer, very reasonable, at from £7 10s. per
1000. Thumbs, well-established, £10 per 1000; in 60's, well
established, at £30 per 1000.

W. ICETON, Putney, S.W.

FERNS! FERNS!!—Trade.—Greenhouse and
Store, 25 saleable sorts, 12s. per 100; out of pots, 10s.
Strong Seedling Ferns, stores, in variety, 6s. per 100, 50s. per
1000. Large *Adiantum cuneatum*, *Aralias*, *Cyperus*, all in 48's,
6s. per dozen. Palms, *Ficus*, *Hydrangeas*, 1s. each. Large
Ferns, 10 best sorts, 6s. 6d. per dozen, in 48's. *Adiantum*
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2s. per 100. Packed free, Cash with Order.

J. SMITH, London Fern Nurseries, Loughboro' Junction, S.W.

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FLORA.—6-inch pots, three to eight heads of bloom,
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GARDENIAS, absolutely free from bug, set for autumn-
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Eucharis, *Ficus*, *Yucca*, *Chamærops*, *Ocrotia*, *Dracenas*, &c.
Apply, **GARDENER**, Bromley Palace, Kent.

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15,000 COCOS WEDDELIANA.
12 marks per thousand.

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Early Layers, for Winter and Early Spring Flowering.
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1000 **ALLEGATERRIERE**

Apply to **T. PAGE**, Grove Nursery, Teddington, Middlesex.

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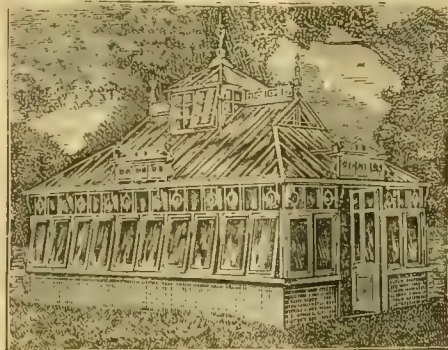
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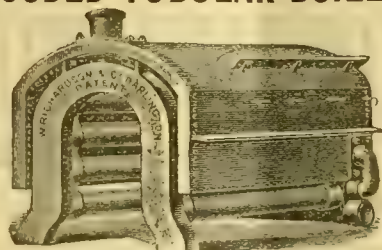
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Have combined in one the advantages of the two best forms of
Boilers hitherto made—the plain Saddle and Tubular Saddle.
They Heat more than Twice the Quantity of Piping
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Highest Awards, Grand Diploma, and Gold Medal, 1891.

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ITS ADVANTAGES ARE—

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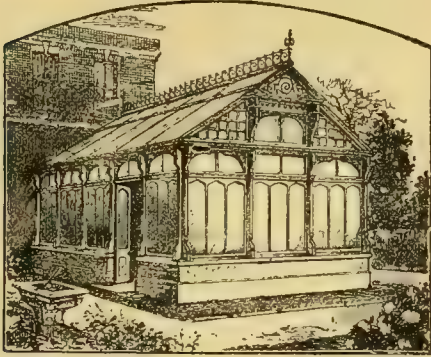
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FOWLER'S LAWN SAND.—For destroying
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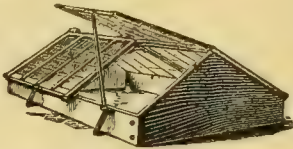
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4 ft. by 6 ft. ... £2 14 0
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BOULTON & PAUL, NORWICH.

EARLY WHITE ROMAN HYACINTHS, Double Roman and Paper-white Narcissus.



JAMES VEITCH & SONS

Beg to announce they have received their usual Consignments of

THE ABOVE VALUABLE BULBS FOR EARLY FORCING,
And will be pleased to receive Orders for Immediate Delivery.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

HORTICULTURAL BUILDER.

Every description of **GREENHOUSES, LIGHTS, &c.**

PIT LIGHTS.

Best quality and workmanship, 2 inches thick, 6 ft. by 4 ft., iron bar across and very strong, 4s. 6d. each, 50s. doz., £10 for 50 lights, free on rail in London. Cash or reference with order.

CUCUMBER HOUSES.

Timber sufficient to build 100 feet by 12 feet house, lights, door, &c. Put on rail in London. Price, £9 10s. Send for detailed specification, to

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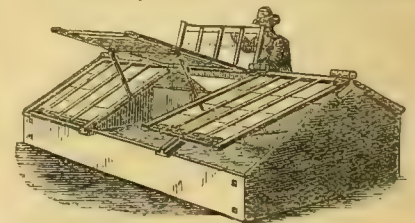
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THE

Gardeners' Chronicle.

SATURDAY, JULY 23, 1892.

COMMERSION.

The story of Philibert Commerson, Botanist and Traveller, and Jeanne Baré (1727—1773).

WHO was Commerson? Who was Jeanne Baré? Alas! how few readers of the *Gardeners' Chronicle*, who can talk glibly enough of the Commersonia, or of the Baretia, of the Bougainvillea, the Poivre, the Lalandia, the Veronia, the Cossignia, the Chazalia, the Jossignia, the Colletia, &c., can tell the inquirer as to the origin of these denominations; who Commerson and Baré were, who can even tell the period when Bougainville or Pierre Poivre lived, who can give the slightest idea of the personalities of Lalande or Véron, who can even suggest the Christian names of Cossigny, of Chazal, or of Jossigny, or Collet. A century ago, this would not have been the case, for, although our modern glote-trotters did not then exist, there were great souls and good, then as now, whose fame extended across the Channel, but whose names were perhaps more familiar to the scientific gardeners and botanists of our comparatively benighted island before the sun of the old French Monarchy had set in the stormy times of "Quatre-vingt-treize." The world was larger then, the names of the philosophers fewer. Now, the world has narrowed to smaller dimensions, whilst the roll-call of philosophers is crowded. Philibert Commerson, according to Du-Petit-Thouars and Emile Vinson, his biographers, was born on November 18, 1727, at Châtillon-lès-Dombes, where his father was Notary and Counsel to the Prince of Dombes. When his literary studies were over, he went to study medicine at Montpellier in 1747; there he took his degree as Doctor, and for four years devoted himself to the study of natural history and botany. At this time he commenced the formation of a herbarium, which was at his death—and, indeed, which is perhaps now—the finest and richest collection of different species gathered in all quarters of the world, that any one man has ever amassed single-handed in one collection. All the young medical students who frequented the College of Montpellier were admiring witnesses of his attainments and wonderful energy, so that his reputation soon spread throughout Europe. Linnæus soon wrote to him, and engaged him to collect and describe the rarer fishes in the Mediterranean Sea, hitherto undescribed and wanting to complete the collection of the then King of Sweden. This work occupied him several years, and formed the completest Ichthyology in those days obtainable by the means at his command. This commission procured for him the opportunities of making an immense amount of observations of the greatest interest. Needless to say, that the King of Sweden was more than satisfied at the results of Commerson's indefatigable labours, and this satisfaction was

shown by royal presents most flattering to the young and ardent naturalist. In 1755, Commerson proceeded to Geneva on a tour for the purpose of collecting alpine plants on the mountains of Savoy and Switzerland; and he also visited Berne, where he met the illustrious Haller, with whom he had been for some time in correspondence.

In the following year, 1756, he established a botanical garden at Châtillon, and thence went on tours over the mountains of Auvergne, and through Dauphiné and Mount Pilate, near Lucerne. Meantime, he struck up an intimate acquaintance with Lalande, the great Lalande, a fellow-countryman, and native of the same province, with whom he ever remained on the most cordial and affectionate terms throughout his lifetime. It was Lalande who persuaded his friend to come to Paris, where he arrived in 1764; and some time afterwards he was selected as an expert naturalist to accompany the expedition which was then being projected to undertake a voyage of discovery under the command of Captain Bougainville.

It was a glorious age for the sciences, for letters, for philosophy, for discovery, in France at this period. Among the savants were to be found Linnaeus, Buffon, Daubenton, and Jussieu; among the first ranks, already Cuvier was coming to the front. Voltaire, although a confirmed valetudinarian, represented literature as Lalande astronomy. Bougainville, who saw his road to fame more surely by discovery than by war, burned to distinguish himself and the French navy by the exploration of new worlds, begged his sovereign, Louis XV., to despatch him at the head of an expedition to exploit the unexploited regions of the globe—and the king consented. Lalande instantly comprehended the advantage of securing the post of naturalist of the expedition for the man best qualified and most competent to undertake the onerous task, and had the satisfaction of obtaining the appointment for his friend—but, that friend he was never to see again—"the path of glory leads only to the grave." Bougainville returned, the riches collected by the naturalist came back to Paris, but his friend never got back to receive the crown he had justly won, he never came back to France.

And now there commenced one of those strange, remarkable, romantic events, which at intervals occur to remind us that true stories of real life are, in fact, far stranger than the fantastic conceptions of fiction. To all intents and purposes, Philibert Commerson was a practical matter-of-fact man, a hard-working, keen observer of life, animal and vegetable, in all its wonderful series of transformations, yet for years in close contact with him, there existed a most surprising case of mimicry, so aptly concealed, that until it was revealed to him by the keener observation of untutored savages in another hemisphere, he never dreamt of its possibility; nor indeed could such a possibility ever have occurred to his mind.

Commerson was at Rochefort, making his preparations for the voyage, before joining his ship at Nantes, when one fine morning, after making enquiries for a servant who could act as his personal attendant on board ship, he was told that a young lad wished to see him, and offer his services. On being told to enter, Commerson beheld a youth, slight, but apparently active, evidently willing and zealous. M. Vinson describes the young fellow, who gave his name as Jean Baret, to have been in appearance profoundly grave and sad, who, although of delicate frame, was evidently endowed with a supernatural energy, and, altogether, a manly, resolute young stripling.

He answered all Commerson's questions satisfactorily; the fame of the unusual expedition round the world had attracted hosts of young adventurers who were willing to go at all hazards, and Commerson was mainly intent on obtaining as an assistant some one less horny-handed than the grim sons of Nep-

tune, who would be likely to tend his much-beloved specimens of natural history with lissome fingers and intelligence. Baret spoke with an accent superior to most of the other applicants, and showed uncommon aptitude for handling and manipulating the savant's instruments and preparations of specimens; and, moreover, he was most earnest in his entreaties to be allowed to accompany the naturalist.

"You will never find anyone who can be more devoted to you!" exclaimed the boy. "I shall do my utmost to obey you, and follow your instructions implicitly. I feel that I shall be really able to assist you, and I care not what dangers I encounter, but in all you may trust me thoroughly in whatever part of the world you take me. I may not have the strength of a full-grown man, but I have intelligence, and am willing to learn whatever you may teach me in the art of preparing your specimens."

"All right," I will take you," said Commerson.

formed a dam across the water with large stones. Immediately below this dam, but not quite touching it, he arched over the stream, for a distance of 9 or 10 feet, with some large boulders of irregular shape. The water flows over this dam, and makes pleasant music as it rushes down and disappears amongst the boulders. It is always a pleasure to watch the trout below the arch, curving their lissome tails, and darting out of sight the moment they perceive a "peeping Tom" or a shadow falling on the water. In this case the stream is remarkably clear and bright, flowing as it does for some miles from its source over sand and gravel. Every pebble at the bottom can be clearly seen, and as some high adjacent hills produce several streams which are all tributaries to that in my friend's garden, the body of water is considerable, and it flows out from amidst the boulders with exhilarating force. The fast flow of water prevents the dammed-up part of



FIG. 13.—GLADIOLUS COLVILLEI: PRODUCING WHITE FLOWERS ON THE SAME SPIKE WITH THE RED.
(SEE P. 91.)

"*C'est une chose entendue.*" According to Vinson, Commerson did not even look at the boy, when thus engaging him as servant; but this is not likely. S. P. O.

(To be continued.)

TROUT IN GARDENS.

A FAST-RUNNING stream of clear water is always a welcome ornament in a garden, and so are the trout which thrive in such water, the handsomest of the trout family being *Salmo fario*, the common brown trout with red spots. The *Salmo leuvenensis*, the Loch Leven trout, is less ornamental than the above, though equal to it in flavour. Some years since, a gentleman of much good taste in landscape gardening, greatly improved his lawn by adding to it water and trout. Having diverted a stream, he brought it through the midst of the lawn, and at a distance of two-thirds from the point of entry he

the stream from becoming stagnant, and here some of the biggest trout are found. On the margin of the lawn several tall clumps of *Osmunda regalis*, and some handsome specimens of deciduous Cypress are fed by the water below, and are making rapid growth.

The trout have certainly added largely to the interest of my friend's garden, and although he requires a certain number of them to yield up their lives every year, they have continued to increase. I would remind those who have the opportunity and desire to follow my friend's example, that trout love shelter in the form of over-hanging foliage and over-lapping banks, or jagged roots of trees, or large stones in the water. In streams that run through meadows the sod upon the margin prevents the ground from caving in, even when the earth beneath has been undermined by the current, and this is the sort of shelter the trout delights in. In a lawn, however, the banks should be kept neat and

in good repair, and with this object my friend has embanked the stream with walls of sandstone, laying the stones roughly, so that Ferns, Sedums, and other plants may grow in the crevices and drape the banks, while the top of the wall is partly covered by a carpet of alpine. Among the most attractive of these may be mentioned that charming Thyme, which clothes itself thickly with small white blossoms in June; *T. Serpyllum*, and another plant of the same family, *T. lanuginosa*, which clings tightly to the rock, and is so exceedingly neat and pleasing that its relatively inconspicuous blossom detracts nothing from its beauty.

It seems that the gardens of South Africa will soon obtain the trout as an ornament. An attempt was made to introduce trout at the Cape eight years ago, and fish of 3 lb. weight were afterwards taken in the Breede River. Most of the fry were poisoned, however, by the action of the soft water of the river on the zinc lining of the hatching boxes, and the

piece of fine muslin. The ova are placed on the muslin, and the process is repeated twice with each box. Several boxes are enclosed in a large case, perforated top and bottom, and ice is used continually to keep the temperature sufficiently low to arrest hatching during the voyage. Hatching recommences within twenty-four hours of the arrival of the ova at their destination, and in two or three days the embryo trout begin to appear. The fry are fed on baked liver, meat, &c., chopped fine, and in about a year they become fit for removal to the rivers. It is intended to send out some salmon ova to the Cape next January, but it seems doubtful whether salmon will succeed anywhere in the southern hemisphere. They have not done so in any part of Australasia, where thousands of ova have been successfully hatched, and the young salmon "parrs" turned into the rivers. In about a year the parrs become "smolt," and commence their journey to the sea, and this annual migration has

conditions? In some cases it may arise from the dissociation of previously mixed elements. But this will not explain the following case, noted by Mr. Burbidge, who sends us a *Gladiolus Colvillei*, "The Bride, bearing a typical red flower of *G. Colvillei* in the middle of the spike, i.e., both white flowers and one red flower are borne on the same spike. This 'break' or 'sport' seems to show that the characters of *G. Colvillei* proper (especially the colour so often a shifting quantity in *Gladioli* and other flowers) really lie latent in its offspring 'The Bride'; but why they so seldom become evident is not so well known." (See fig. 13.)

Another curiosity of a cognate character we have seen several times in *Azalea mollis*. Our illustration, (fig. 14) taken from a specimen sent to us last year, is precisely similar to one exhibited this spring by Messrs. Paul & Son. Some of the flowers of the truss, as will be seen, are on shorter stalks, much smaller than their fellows, of a white colour, and with very short stamens and style, so that both are included within the flower-tube. Whether these white flowers indicate a reversion to an earlier state, or whether they are merely cases of degeneration, is more than can be told. As throwing a little light on this subject, we notice the prevalence of "running" in flake and bizarre Carnations, the latter being the worse. This departure from the normal colouring of these flowers is caused, say the growers, by the low temperature that prevailed at certain periods during the formation of the flowers, and to the recent heavy rains, and the fact that "run" blooms are rarely found in plants which have been grown from the first under glass protection, seems to favour the supposition of the growers.



FIG. 14.—AZALEA MOLLIS, WITH DIMORPHIC FLOWERS, THE LARGER ONES BUFF-COLOURED, THE SMALLER PURE WHITE.

surviving fish have since disappeared through neglect. The introduction of fresh ova has now been accomplished, and a spring of water having a uniform temperature of 62° Fahr. has been utilised, as it was found that the fish are liable to succumb from the effects of heat when the water in their ponds and streams has been allowed to run too low. Early in the present year, 100,000 trout ova were obtained from the famous breeding establishment in the Wey, near Haslemere, belonging to Mr. Thomas Andrews, of Guildford, and an expert to superintend the experiment, has been sent out from this country by the Agent-General of the colony. The process of hatching the ova commences in England. In fact, the freshly-deposited ova are too frail to be handled. After thirty days' hatching, the eggs become firm enough to be moved, and they are then packed in thin iron boxes 12 inches by 9 inches, perforated at the sides and bottom. The bottom of each box is covered with moss, on which is laid a

been observed in Australia, but unfortunately the salmon have never come back to the rivers again. The salmon, however, is not a very frequent ornament of gardens, though we could mention several gardens whose attractiveness is greatly enhanced by their presence. As for trout, we could name a garden where the Loch Leven variety prospers in a pool partly concealed amidst shrubs. Water is kept always flowing into the pool by a small pipe, and the fish are regularly fed, and grow amazingly. They are tame, and, if not particularly ornamental, they are, at all events, amusing. *H. E.*

DISTRIBUTION OF COLOUR IN FLOWERS.

ONE of the many mysteries attendant upon plant-life concerns the distribution of colour in certain cells. Why should it be present in some cases, why absent in others, under what seem to be precisely similar

CULTURE OF THE TUBEROSE.

THERE are few cultivated bulbous plants that are so easily managed—when their treatment is properly understood—as the Tuberose, and there are fewer still that command such a ready sale, and yield such good returns. It ranks, as it justly deserves to do, among the choicest and most useful of flowering plants in summer, autumn, and winter months, and to say that the individual blooms of the Tuberose—of which the spike of a well-grown plant contains from forty to fifty—are almost equal to Gardenias, would not be an exaggeration. As a decorative plant, the Tuberose, when associated with Ferns and other suitable plants, is very effective, but it is for purposes of personal adornment and in bouquet-making that its flowers are especially useful; and, owing to their flowers expanding in succession daily at the bottom of each spike, a dozen or two of plants in bloom would suffice for the requirements of a private family for a period of four or five weeks. By potting about one dozen tubers at intervals of a fortnight or three weeks from February to the end of June or July, the supply of flowers may be extended from May well into the new year.

The Pearl, a dwarf American variety, growing from 3 to 4 feet high, is the best one to cultivate. It should be potted in 3-inch pots, burying three-parts of the bulb in the soil, which should consist of sandy loam and a little sweet leaf-mould; and previous to being potted, the bulbs should have the old roots cut away, and all the bulblets rubbed off, and afterwards all the suckers excepting the principal one, which springs from the crown as soon as they appear, otherwise failure to flower may result. After potting, plunge the pots to the rim in a propagating pit, Melon or Cucumber frame, watering them then, but afterwards keeping the soil on the dry side till top-growth begins. I have been very successful with early batches of plants started in boxes about 30 inches long, 10 inches wide, and 6 inches deep, and three-parts filled with clean sawdust, in which the pots were plunged, the boxes being placed over hot-water pipes in the Melon and Cucumber-houses, and covered with glass.

Later in the season Melon and Cucumber frames are well adapted to the requirements of the plants till they require more head room, and although

the plants start better and more regularly into growth when the pots are plunged in a bed with a gentle bottom-heat, I may say that during the months of June and July the plants will do satisfactorily without bottom-heat, simply standing the pots on the soil in what may be called cool Melon pits, that is, pits in which the necessary degree of heat for the growth of the Melons is obtained by husbanding solar heat. As soon as the flower spike has attained to a height of about 6 inches, the plants, being sufficiently moist at the roots, should be shifted into 6-inch pots—their flowering pots—and water withheld from the roots for a few days, until the roots have seized on the new soil, and as the pots become filled with roots, weak liquid manure should be afforded, and occasionally a surface-dressing of Thomson's Vine and Plant Manure immediately before applying clear water, and keeping the stems clean of the manure. I have also found applications of Farmer & Co.'s manure productive of large spikes of good flowers, the change of stimulating manure acting beneficially. After the plants become too tall to stand any longer in the Melon pits, &c., they should be transferred to a forcing-house, where they should stand as near to the glass and light as circumstances will permit, syringing them thoroughly morning and afternoon at closing time with tepid water so as to keep them free from red-spider, an insect that is liable to infest the foliage in the temperature of a forcing-house if not washed overhead as recommended. As soon as the plants begin to flower, they should be placed in the greenhouse or conservatory, the drier and airier atmosphere there maintained being congenial at that stage. In conclusion, I may say that the plants should be afforded sufficient air to insure a sturdy growth, and supports afforded the flower spikes in due time.

Treatment of the Bulbs before being Potted.—The bulbs when received from the dealer should be all trimmed in the manner described, and then spread out on a shelf in a cool but dry house, where the temperature is not likely to fall much below 35°, putting them in the order in which they are to be potted up in batches during the interval from the beginning of January to the end of July. In this way it will be easy to examine them whenever a batch is to be potted, removing any offsets that may be showing on any of them. This examination of the bulbs is of value. Should those intended for potting in June and July be overlooked until potting time has arrived, several of the bulbets will be found to have pushed into growth, thereby wasting the forces of the bulb and ensuring weak flower-spikes. I annually flower about 400 bulbs of the *Tuberose*, which are potted in successive lots of from thirty to fifty, at intervals of about a fortnight from the beginning of the year to the end of the month of July. Should any of the late-potted bulbs fail to flower during the winter months, all being well, they will send up good spikes the following summer. *H. W. Ward, Longford Castle Gardens.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA MENDELI "MRS. BROOMAN WHITE."

The chief things on which the Arddarroch collection of Orchids at Garelochhead, Dumbartonshire, prides itself are the fine collection of varieties of *Cattleya Mendeli*, and of *Odontoglossum crispum*, and in both these specialties they excel. Yet another superbly-coloured form of *Cattleya Mendeli*, named in honour of the wife of the proprietor, comes to hand. It is a well-formed flower, sepals and petals white, tinged with lavender colour. The front and basal part of the interior of the broad and beautifully-crippled labellum is almost entirely of a rich purplish-crimson, there being only two patches of yellow, one on each side of the throat. The upper part of the side lobes folded over the column is white. A noble-spotted form of *Odontoglossum crispum*, of great size, also comes from Mr. Brooman White.

REMOVING THE FLOWER-SPIKES OF ORCHIDS.

I was admiring some very pretty flowering plants of *Oncidium concolor* at the great exhibition of Orchids in the Temple Gardens, when an eminent orchidist remarked, that he never could maintain his plants of that species long in good health and vigour unless the flower-spikes were cut off, or, rather, pinched off, before the flowers opened, this being done in alternate years. *O. concolor* is not the only species of Orchid that is benefited by this kind of treatment. I was some years ago much interested in well cultivating a fine specimen of *Oncidium macranthum hastiferum* for an exhibition in June; one year it was exhibited splendidly in flower, and the flower-spike—a very long one—was allowed to remain with all the flowers until they passed away naturally. I found the next season that the spikes were not so long as in the previous year, and the flowers opened too late for the exhibition, which was held at about the same date as before. These spikes were allowed to remain, and next year we were like to have had a still later bloom, so I cut off all the spikes as soon as they showed out of the sheathing leaves, with the result that the new growth was more vigorous, and the pseudobulbs earlier in forming, giving us strong early spikes the next year; we lost, of course, the bloom of one season. The way to obtain these *Oncidiums* early in the year would be to grow plenty of plants, and allow a few to rest annually. Some cultivators may say that this *Oncidium* or that, which many

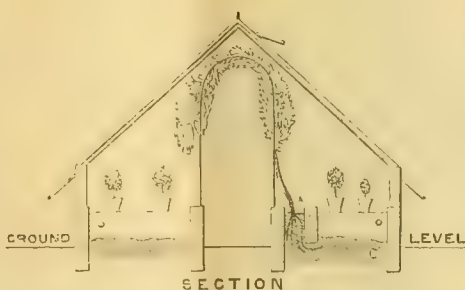


FIG. 15.—BOUGAINVILLEA HOUSE, AT CLIVEDEN, BUCKS.

cultivators fail to manage, is no trouble to them, and that they flower well every year, and grow freely. This is so, for either owing to the construction of the houses, or some trait in the culture of the plants, one man may succeed and another fail with certain Orchids difficult to manage. I wrote in the *Gardeners' Chronicle* some years ago about the success obtained by the Rev. F. D. Horner in his garden at Low Fields with *Cattleya citrina*; this year the plants were better than ever, producing flowers freely, and sending roots down 18 inches below the blocks on which they are growing; and few specialists, if any, have ever obtained such excellent results. Mr. Horner has nothing particular to say about his treatment; the plants are hung up close to the glass over the path, and never suffer for want of water—he does not believe in drying them off, even in winter. *J. Douglas.*

BOUGAINVILLEAS.

The perplexity that exists in India and elsewhere as to the correct names to be applied to the species and varieties of Bougainvillea, has induced us to apply to Mr. Watson, of Kew, for the benefit of his experience in the matter, and which he has kindly afforded in the subjoined note. When the Bougainvillea was first flowered in this country, at Swyncombe, under the care of Mr. Daniell, great was the excitement. Mr. Daniell grew his plant in great heat, and especially with great bottom heat. We now know that great heat is not required, and Mr. Fleming, of Cliveden, was one of the first to show that it will grow in an ordinary greenhouse, with no

bottom heat at all. Our illustration (fig. 15) shows how this may be effected, the roots being at first confined in a brick cage, but subsequently extending beneath the stage into a border of brick rubbish mixed with soil, which affords ample drainage. The Bougainvilleas are natives of Mexico and tropical South America, but are now universally diffused in warm countries. Who Bougainville was is told in the article on Commerson in another column.

"There are," says Mr. Watson, "only two distinct species of Bougainvillea in cultivation in England, or anywhere else, so far as I know, and the correct names for these two are *B. glabra* and *B. spectabilis*. Unfortunately, the latter has received several other specific names, and as cultivators insist upon retaining these several names for what they consider quite distinct kinds, we have as a consequence a confusion of names.

"With regard to *B. glabra*, it is unnecessary to say more than that it is a well-marked species, and one of the very best of climbers for the warm greenhouse or stove, and a popular garden plant in all parts of the tropics where the European dwells. Although a Brazilian plant, it is said to have been introduced into England from Mauritius in 1861 by Mr. J. Daniells, of Swyncombe Gardens, Henley-on-Thames, who obtained a First-class Certificate for it from the Royal Horticultural Society in September of the same year.

"*B. spectabilis* was first flowered in England at Chatsworth in 1844, by Sir Joseph Paxton who published a figure and description of it in his *Magazine of Botany*, vol. xii. In 1854 it was figured in the *Botanical Magazine*, where Sir William Hooker stated that, 'in respect of colour, the bracts (flowers) are exceedingly variable.' I have seen them pure rosy-pink, rosy-purple, and almost crimson, but I have never seen any that could be called rich purplish-blue, the description given by Mr. J. H. Veitch in his notes from Bombay, published in the *Gardeners' Chronicle* on April 2. In Madeira and at the Cape I have seen magnificent specimens of this species, covering the fronts of houses, scrambling over verandahs, or draping high walls with its flower-laden branches. The leaves vary in size and in hairiness, and in some plants the branches are much more spinous than in others. But all these variations are of a minor character, and are certainly not worth distinguishing with names. Dr. Lindley described in the *Gardeners' Chronicle* in 1861 a plant which he called *B. speciosa*, and which he said differed from *B. spectabilis* in having compact heads of flowers on very hairy stalks, the latter species being characterised as having a loose and sparse inflorescence. But this distinction is not now considered good enough, and latterly all botanists call by the name of *B. spectabilis* all those plants which had previously been called *B. bracteata*, *B. braziliensis*, *B. speciosa*, *B. splendens*, and *B. peruviana*.

"There is, however, a very distinct variety of *spectabilis*, which was figured in the *Floral Magazine* in 1865, t. 260, and in the *Illustration Horticole* the year following, under the name of *B. lateritia*, this name, which means brick-red, having allusion to the colour of the bracts (flowers), which are the colour of bright red bricks; or, as some one has described it, dull flame. In all other respects this plant is identical with the ordinary *B. spectabilis*. I have had specimens of it from Madeira, Egypt, the Riviera, and several English gardens, and Mr. Goldring informs me that it is a common plant in India. It is in cultivation at Kew. Some people prefer its flowers to those of *B. spectabilis*, others do not, and some cultivators call this the true *B. spectabilis*, retaining the name *speciosa* for the rosy-purple plant. Briefly, the nomenclature of garden Bougainvilleas is as follows:—

"*B. glabra*, a loose grower, with thin branches, pale green, nearly glabrous leaves, and rosy-mauve bracts.

"*B. spectabilis*, a very woody climber, with stout spines, rather thick leaves, more or less hairy, and large bracts, sometimes 2 inches long, coloured rich rosy-purple, or rosy-crimson.

"*B. var. lateritia* differs from the type in having the bracts coloured brick-red or dull-flame." *W. W.*

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1892.]

The words "average," "over," or "under," as the case may be, indicate the amount of the crop; and "good," "very good," or "bad," indicate the quality.

The counties are arranged in numbered groups, to correspond with those adopted in the Weather Reports of the Meteorological Department, and followed in our weekly Weather Tables.

* * Fuller details will be given in the following number. See also Leading Article on page 100.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND—										
0, Scotland, N.										
MORAYSHIRE	Under average	Under	Average; good	Average	Average	Under average; very good	Average; except Gooseberries	Over average	.....	Chas. Webster, Gordon Castle, Fochabers
	Under	Under	Average	Average	Good crop	Under	Average	Average	.....	D. Cunningham, Darnaway Castle Gardens, Forres
NAIRNSHIRE	Over; good	Under; good	Under; good	Over; very good	Average; good	Under; good	Over; very good	Over; very good	.....	Wm. Morrison, Kilravock, Fort George Station
	Average	Under	Over	Average	Under	Under	Average	Over	.....	James Maitland, Cawder Castle, Nairn
ORKNEY	Heavy crop	Under average	.....	Under average	Average; good	.....	Over average; Gooseberries heavy crop	Under average	.....	Thos. McDonald, Balfour Castle Gardens, Kirkwall
ROSS-SHIRE	Under	Under	Under	Under	Under	.....	Average	Average	.....	Robert Massie, Andross Castle Gardens, Alness
SUTHERLAND	Over	Average	Over	Average	.....	.....	Over	Average	Average	D. Melville, Dunrobin Castle Gardens, Golspie
1, Scotland, E.										
ABERDEENSHIRE	Average; good	Under average	Under average; good	Average; good	.....	.....	Over average; very good	Average; good	.....	J. Forrest, Haddo House Gardens, Aberdeen
	Under	Bad	Bad	Under	.....	Bad	Very good	Very good	.....	Simon Campbell, The Gardens, Fyvie Castle, Aberdeen
CLACKMANNANSHIRE...	Under	Under	Under	Average	.....	.....	Average	Under	Under	T. Ormiston, Alloa House Gardens
EAST LOTHIAN	Average; good	Under; good	Under; good	Average; good	Average; good	Under; good	Over; very good	Average; good	.....	R. P. Brotherston, Tynninghame Gardens, East Lothian
	Under; good	Under average; good	Under	Under	Over average; good	Over average; good	Average; good	Average; good	Under average	L. Dow, Newbyth Gardens, Prestonkirk
FIFESHIRE	Average	Average	Under	Average; good	.....	Under	Under; very good	Average	.....	George Ramsay, Fordell Gardens, Inverkeithing
	Under	Under	Under	Under	Under	Under	Under	Under	.....	Robert Gossip, Crawford Priory, Cupar
	Under	Under average	Under	Average	None grown outside; over average inside	Under average	Over average	Average	.....	W. Henderson, Balbirnie, Markinch
FORFARSHIRE	Under	Under	Under	Average; good	.....	Average	Average	Over; good	.....	Wm. McDowall, Brechin Castle Gardens, Brechin
	Under	Under	Under	Under; bad	Under	Under	Average	Under; bad	.....	Jas. Whitton, Glamis Castle Gardens, Glamis
KINCARDINESHIRE	Average	Average	Under	Over	.....	.....	Over	Under	.....	J. M. Gairns, Arbuthnott, Fouldoun
KINROSS-SHIRE	Under; good	Under; good	Under; bad	Average; very good	.....	.....	Over; very good	Under; good	.....	John Fortune, Blair Adam Gardens
MIDLOTHIAN	Under; very good	Average; very good	Over; very fine	Over; very fine	Under; good	Over; very good	Average; very good	Over; very fine	Thin; good	Malcolm Dunn, Dalkeith Gardens, Midlothian
PEEBLESSHIRE	Under	.....	Average	Under	.....	.....	Good	Under	.....	Malcolm McIntyre, The Glen, Inverleithen
PERTHSHIRE	Under; bad	Under; bad	Under; bad	Over; good	Average; good	Average; good	Over; very good	Average; good	.....	G. Goodfellow, Kinfauns Castle Gardens, Perth
	Under; all sorts, standard and on wall	Under	Under	Under; very good	.....	.....	Average; good	Very promising. I have only late varieties	.....	John Robb, Drummond Castle Gardens, Crieff
	Under; failure	Under	Under on walls; average on standard	Average	.....	.....	Gooseberries under; Currants plentiful	Average	.....	George Croucher, Ochtertyre, Crieff
	Under	Under	Under	Under	Under	Under	Gooseberries good	Good	.....	P. W. Fairgrieve, Dunkeld House Gardens, Dunkeld
	Under	Under	Average	Average	.....	Under	Under; Raspberries excepted	Average	.....	J. King, Blair Drummond Gardens
ROXBURGH	Under	Under	Under	Under	Under	Under	Average	Average	.....	R. G. Milne, The Gardens, Minto
SELKIRK	Under	Average	Average	Under	Very few grown outside	Under	Average; good	Average; good	.....	Wm. G. Pirie, Sunderland Hall Gardens, Selkirk
6, Scotland, W.										
AYRSHIRE	Under average; should be good	Under average	Under	Average	.....	.....	Under average; good	Under average; good	.....	W. Priest, Eglinton Gardens, Irvine
	Under	Under	Under	Average	.....	Under	Average	Average	.....	David Murray, Culzean Castle, Maybole
ARGYLLSHIRE	Under	Under	Under	Average	.....	.....	Under	Average	.....	G. Taylor, Castle Gardens, Inverary
DUMFRIESSHIRE	Under	Bad; good under glass	Under out-doors; good under glass	Under	Very good in orchard house	.....	Average	Good, but unusually late	.....	D. Thomson, Drumlanrig, Thornhill
LANARKSHIRE	Under; bad	Under; good	Over; good	Over; very good	Under; bad	Under; bad	Over; very good	Over; very good	.....	A. Angus, Dalziel Gardens, Motherwell
RENFREWSHIRE	Under; bad	Under; bad	Average; good	Under; good	.....	.....	Average; good	Over; very good	.....	F. Fulford, Eastwood Park, Giffnock, Glasgow
	Under; bad	Under; bad	Under; bad	Average; good	.....	.....	Under; good	Under; bad	.....	T. Lunt, Ardgowan Gardens, Greenock
	Under	Under	Under	Average	Under	Under	Average	Average	.....	John Methven, Blythswood
	Under	Average	Average	Over	.....	.....	Average	Average	.....	Henry Maxwell, Ralston Gardens, Paisley
STIRLINGSHIRE	Under	Under	Average	Average	Under glass extra	Under	Average	Average	.....	M. Temple, Carron House, Falkirk
	Under	Under average	Average	Under average	Under average	Average	Under average	Average	.....	Maurice Fitzgerald, Dunmore, Larbert
WIGTOWNSHIRE	Under; good	Under; bad	Under; good	Average; very good	.....	.....	Average; very good	Over; very good	.....	W. Cruden, Castle Kennedy

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
ENGLAND—										
2, England, N.E.										
DURHAM.....	Average	Under average	Good; average	Over average	.....	Under average	Average; very good	Average	.....	James Tullett, Raby Castle, Darlington
	Under	Under	Under	Under	Under	Under	Average	Average	.....	J. Hunter, Lambton Gardens Fence Houses
	Under; bad	Under; good	Average; good	Average; good	.....	Under; good	Over; good	Average; very good	.....	John Short, Hummersknott, Darlington
	Over	Over	Over	.....	.....	.....	Average	Average	.....	R. Draper, Seaham Hall Gardens
NORTHUMBERLAND.....	Under	Under	Average; under	Over; good	Over; good	Under	Average; good	Average; over; good	.....	J. Moore, Castle Hill Gardens, Wylam-on-Tyne
	Average; over	Under	Average; good	Average; good	Average	Average	Very good	Average	.....	George Harris, The Castle Gar- dens, Alnwick
	Average	Under	Under	Average	.....	Average	Very good	Over; good	Average	William Fell & Co., Royal Seed and Nursery Establishment, Hexham
	Under	Under	Average	Average	Over; very good	Over; very good	Average; good	Average	Under	David Inglis, Howick Hall, Lesbury
YORKSHIRE.....	Under; good	Under; good	Average; good	Average; good	Over; very good	Average; good	Average; good	Under; good	Under; good	Henry J. Clayton, Grimston Park Gardens, Tadcaster
	Average; good	Under; good	Under	Average	Over; very good	Average; good	Over; very good	Over; very good	Under	Wm. Chuck, The Gardens, Brodsworth Hall, Doncaster
	Under	Under	Under	Over	Average	Under	Average	Average	Average	Thos. Lambert, Burton Con- stable
	Under	Over	Over	Over	Under	Under	Over	Average	Under	J. Riddell, The Gardens, Castle Howard
	Under; good	Under; good	Over; good	Under; good	Average; good	Average; good	Over; good	Under; good	.....	Thomas Jones, Ribston Gar- dens, Wetherby
	Average	Average	Under	Good	Under	Under	Very good	Good	.....	Bailey Wadds, Birdsall House Gardens, York
	Average	Bad	Average	Bad	Good	Average	Good	Good	Bad	William Culverwell, Thorpe Perrow, Bedale
	Average	Under	Average	Good	Good	Good	Good	Good	Under	Robt. C. Kingston, Branting- ham Thorpe, Brough
3, England, E.										
CAMBRIDGESHIRE.....	Under; bad	Under; bad	Under	Over; good	.....	.....	Average	Over	Over	A. Grant, The Vineries, Wil- lingham
	Under	Under	Under	Average	Average	Under	Average	Good	Average	J. Hull, Babraham Gardens
ESSEX.....	Under; good	Under; good	Under	Average; very good	Average; good	Under; bad	Under; good	Under; good	Under; good	James Vert, Audley End Gar- dens, Saffron Walden
	Average; very good	Under; good	Under; bad	Average; very good	Over; good	Over; good	Average; good	Over; good	Under; good	Jas. Douglas, Great Gearies, Ilford
	Under; good	Under; bad	Under; bad	Over; very good	Over; very good	Average; good	Under	Average; good	Under	William Earley, Double House, Ilford
	Under; good	Under; good	Under	Average; good	Average; good	Under; bad	Average; good	Average; good	Average; good	Chas. Butter, Parndon Hall Gardens, Harlow
	Under; good	Under; good	.....	Average; good	Average; good	Average; good	Over; good	Under; bad	.....	Arthur Ocock, Havering Park Gardens, Romford
LINCOLNSHIRE.....	Under	Under	Under	Under	Average; good	Average; good	Average	Over; good	Average	David Lumsden, The Gardens, Bloxham Hall, Lincoln
	Average; good	Under	Under	Under average	Under average	.....	Average; good	Average; good	Under average	R. Gilbert, Burghley Gardens, Stamford
	Under	Under	Under	Over	Average	Under	Under average	Average; good	.....	William Ingram, Belvoir Castle Gardens, Grantham
	Under	Under	Under	Over Average	Average Under	Average Under	Over Average	Over Average	Average	James Seth, Thurlby, Bourne Thomas Vinden, Harlaxton Manor, Grantham
	Under	Under	Under	Average	.....	Under	Average	Average	Average	J. Rowlands, Manor Gardens, Bardney, Lincoln
NORFOLK.....	Under	Under	Under	Average	Under	Under	Over	Average; good	Over	H. Batchelor, Catton Park, Norwich
	Under	Under	Under	Average; good	Average	Under	Over; good	Average	Under	Geo. Nisbet, Hunstanton Hall Gardens, King's Lynn
	Average; good	Under; good	Under; good	Average; very good	Average	Under; good	Over; very good	Over; good	Average; good	A. Lancaster, Holkham Gar- dens, Wells
	Average	Under	Under	Good	.....	Bad	Very good	Good	Under	F. Lee, Lynford Hall, Mund- ford
SUFFOLK.....	Under	Under	Under	Under	Over	Under	Over	Over	Average	Thos. Blair, Shrubland Park, Needham Market
	Under; good	Under; bad	Under; good	Average; good	Under; bad	Under; good	Average very good	Over; very good	Under	Sydney J. Burgess, Dalham Hall Gardens, Newmarket
	Under	Under	Over	Over; good	Over	Under	Over; good	Over; good	Average	H. Fisher, The Gardens, Flixton Hall, Bungay
	Under	Under	Under	Average	Average; good	Under	Average	Average	Under	J. Sheppard, Woolverstone Park, Ipswich
	Under; very good	Average; good	Under; very good	Average; good	Over; good	Average; very good	Average; good	Over; very good	Under	G. W. Eden, Henham Gardens, Wangford
	Under; good	Under; good	Under	Over; very good	Average; good	Under; bad	Average; good	Average; good	Under	D. T. Fish, Bury St. Edmunds
	Average; good	Under average	Average; good	Average	Average; good	Under	Average; good	Average	Under average	John Wallis, Orwell Park Gar- dens, near Ipswich
4, Midland Counties										
BEDFORDSHIRE.....	Under; good	Under; good	Under; good	Average; good	Under; good	Under; good	Average	Average; good	Under	G. Ford, Wrest Park, Ampt- hill
	Average; good	Under	Under	Average	.....	.....	Average; good	Average	Average	Thomas Hedley, Putteridge Park Gardens, Luton
	Under	Under	Average	Average; good	Average	Under	Average	Over; good	Average	C. Turner, Cranfield Court Gardens, Newport Pagnell
	Under	Under	Under	Average Good	..... Under	Under Under	Average Average; good	Average; good Average; small	Under	A. McKay, Woburn
BUCKS.....	Over; very good	Under	Under	Average; good	Over; good	Under	Average; good	Average; good	Average; good	H. W. Nutt, Flitwick Gardens, Amphill
	Average	Under	Average	Over average	.....	Bad	Under; good	Above average	Under average	Charles Herrin, Dropmore, Maidenhead
	Average	Under	Under	Above average	Average	Under average	Average	Average	Average	G. Bloxham, Brickhill Manor, Bletchley
	Under; good	Under; clean	.....	Under; good	.....	Under	Average; good	Under; small	.....	Geo. Thos. Miles, Wycombe Abbey, High Wycombe
	Average	Average	Under	Average	Good	Under	Very good	Over; good	Average	J. Jaques, Waddesdon Manor, Aylesbury
	Under	.....	Under	.....	.....	.....	Average	Average	Over average	W. Waters, Bulstrode Gardens, Gerrard's Cross, Slough
	Under; very bad	Under; very bad	Under; very bad	Over; very good	Under	Under; bad	Average; good	Average; good	Average; very good	J. W. Shrimpton, Aston Clin- ton Gardens, Tring
	Average; very good	Under average	Under average	Over average; very good	Average; good	Much under average	Average; very good	Over average; good	Average	J. Thomas, Shardloes Gardens, Amersham
CHESHIRE.....	Under	Under	Under	Under	Under	Under	Under	Average	.....	J. Smith, Mentmore, Leighton Buzzard
										Jno. V. Smith, Arley Hall Gar- dens, Northwich

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
4, Midland Counties.										
CHESHIRE	Much under	Much under	Under	Under	.....	.....	Average	Average	.....	Robt. Mackellar, Abney Hall Gardens, Cheadle
	Under	Under	Under	Average; good	Average	.....	Average	Average; very good	.....	Chas. Terry, Tatton Park Gardens, Knutsford
	Under	Under	Under	Average	Average	Under	Under	Average; good	Under	W. Whitaker, Crewe Hall Gardens, Crewe
DERBYSHIRE	Under	Under	Under	Average	Average	Under	Average	Average	Under	J. H. Goodacre, Elvaston Hall Gardens, Derby
	Under; poor	Under; bad	Over; good	Average; good	.....	Under	Average	Average	.....	G. F. Jeal, Willersley Gardens, Cromford, Derby
	Under	Under	Under	Average; good	.....	Under	Average; good	Average; very good	Under	T. Keetley, The Darley Abbey, Derby
HERTFORDSHIRE	Under	Under	Average	Average	.....	Under	Average; good	Average; good	Under	Wm. Elphinstone, Shipley Hall Gardens, Derby
	Average	Under	Under	Under	Over; very good	Average	Over; very good	Average; good	Over; very good	C. E. Martin, The Hoo Gardens, Welwyn
	Good	Under	Under	Over; very good	Average; good	Good	Abundant	Under	Under	J. Kipling, Knebworth, Stevenage
	Under	Under	Under	Average; good	.....	Under	Average; good	Under; good	Under	J. C. Mundell, Moor Park Gardens, Rickmansworth
	Average; good	Under	Under	Over; good	Over	.....	Under	Average	Under	E. Hill, The Gardens, Tring Park, Tring
	Under average	Under	Average	Average; good	Average	Under	Over; good	Average	Under	G. Norman, Hatfield House Gardens
LEICESTERSHIRE	Under	Under	.....	Average	Under	.....	Under	Average; very good	.....	J. Ritt, Panshanger Gardens, Hertford
NORTHAMPTONSHIRE...	Under; good	Average; good	Under; very good	Average; bad	Average; good	Over; very good	Average; good	Average; good	.....	A. Hamshire, Beau-Manor Park Gardens, Loughborough
	Under; good	Under; very good	Under; good	Over; good	Average; very good	Under; good	Over; very good	Under; very good	Over; very good	Thomas Wilson, Wakefield Gardens, Stony Stratford
	Under	Under	Average	Average	.....	.....	Average; good	Average; good	Under	S. Cole, Althorp Park Gardens, Northampton
	Under; good	Under; bad	Under	Under; bad	Under; good	Under	Over; very good	Average; very good	Under average; good	W. S. Miller, Whittlebury Lodge Gardens, Towcester
	Under	Under	Under	Under	Under	Under	Average	Average	Average	H. Turner, Fineshade Abbey Gardens, Stamford
	Average; good	Under; bad	Under; bad	Over; very good	Over; good	Average; good	Over; very good	Over; very good	Under; poor	J. Trigger, Milton Park Gardens, Peterborough
NOTTINGHAMSHIRE, ...	Under	Under	Under	Very good	.....	Under	Plentiful	Very good	Under	Chas. Slade, Clumber Gardens, Worksop
	Under; bad	Under; bad	Average	Average; over	.....	.....	Average; good	Average; good	Average; good	A. Henderson, Thoresby Gardens, Ollerton
	Under; bad	Under; good	Under; good	Average; good	Under; good	Under; good	Average; good	Average; good	Under; bad	John Horton, Welbeck Abbey Gardens, Worksop
	Under	Under	Under	Average; good	Average	Average	Average; good	Average; very good	Under	Amos Farr, Holme Pierrepont, Nottingham
	Over; good	Under; good	Average; good	Average; good	Over; very good	Under	Average; good	Average; good	Average	S. A. Woods, Osberton Gardens, Worksop
	Under; good	Under	Under	Average; good	.....	Under; good	Over; very good	Over; very good	Under	George Stanton, Park Place Gardens, Henley-on-Thames
RUTLANDSHIRE	Under	Under	Average; good	Average; good	Average	Under	Average; good	Average; good	Average	W. H. Divers, Ketton Hall Gardens, Stamford
SHROPSHIRE	Average	Average	Average	Over	Average	Over	Over	Average	Over	H. Mason, Bisbrook Hall Gardens, Uppingham
	Under; good	Under; good	Under; bad	Average; good	Over; good	Under	Average; good	Average; good	Under	James Louden, The Quinta Gardens, Chirk
	Under; bad	Under; bad	Under; bad	Under	Under	Under	Very good	Average	Bad	A. S. Kemp, Broadway, Shifnal
STAFFORDSHIRE	Under; bad	Under; bad	Under; bad	Average; good	.....	Under; bad	Under; good	Over; bad	.....	Neil Sinclair, Park Hall Gardens, Oswestry
	Under; bad	Under; bad	Under; bad	Average; bad	Under	Average; good	Average; good	Over; very good	Average; good	John Wallis, Keele Gardens, Newcastle
	Average	Under	Under	Over	Average	Under	Over	Very good	Under	Wm. Halliday, Patshull House Gardens, Wolverhampton
	Under	Under	Under	Average	Under	Under	Average	Average	Under	E. Gilman, Ingestre Gardens, Stafford
	Under	Under	Under	Average	Under	.....	Over	Average	.....	H. G. Wilks, Sandon Hall, Stone
	Under	Under	Under	Average	.....	Under	Good	Very good	Under	J. Campbell, Biddulph Grange Gardens, near Congleton
WARWICKSHIRE	Under	Under	Under	Average	.....	Under	Good	Very good	Under	J. Bowler, Caldecote Gardens, Nuneaton
	Under; good	Under; bad	Under	Average; good	Over average	Under; good	Under	Under; good	Under average	J. Rodger, Charlecote Park Gardens, Warwick
	Under	Under	Under	Over	.....	Under	Under	Over; good	Over	W. Miller, Combe Abbey, Coventry
5, Southern Counties.										
BERKSHIRE	Average	Bad	Under	Under	Good	Good	Good	Under	Good	Robt. Fenn, Sulhamstead, near Reading
	Under; good	Under; bad	Average; good	Over; very good	Over; very good	Average; good	Over; very good	Average; good small	Under; good	Owen Thomas, Royal Gardens, Windsor
	Average	Under; bad	Under; bad	Average	Average; good	Under	Average	Average	Under	J. Tegg, Bearwood, Wokingham
	Average	Under	Under	Very good; average	Under	Under	Average	Average	Average	J. Strachan, Rose Hill Gardens, Henley-on-Thames
	Under; bad	Under; good	Under	Over; good	Average; good	Over; good	Average; good	Under	Average; good	J. H. Rose, Lockinge Gardens, Wantage
	Under	Under	Under	Average	Under	Under	Average; good	Average; good	Average	T. H. Crisp, Canford Manor Gardens, Wimborne
DORSETSHIRE	Over; very good	Under	Under; good	Over; very good	Over; good	.....	Over; very good	Average; good	Over	E. Molyneux, Swanmore Park Gardens, Bishop's Waltham
HAMPSHIRE	Average; good	Under	Under	Average	Over; good	Over; good	Average	Average	Average	A. Maxim, Heckfield Place Gardens, Winchester
	Average; small	Under; very bad	Under	Good crop	Average; good	Average; good	Average	Under; fruit small	Average	J. Bowerman, Hackwood Park, Basingstoke
	Average; good	Under	Over; good	Average; good	Average; good	Under average	Over; good	Under average	.....	Wm. Smythe, Basing Park Gardens, Alton
KENT	Under; good	Under; good	Under; good	Average	Under; good	Under; good	Average; good	Average; small fruit	Under	G. A. Don, Beddegbury Park, Hawkhurst
	Average; good	Under; poor	Under	Average; good	Average; good	.....	Average; good	Average; good	.....	F. Moore, Blendon Hall Gardens, Bexley
	Average; good	Under	Under	Over; good	Average; good	Under	Under; good	Under; good	Average	Wm. Craik, Hothfield Place, Ashford
	Under	Under	Under	Average; good	.....	.....	Under	Average; good	.....	V. Court, Lynsted, Sittingbourne
	Average; very good	Under; good	Under; bad	Average; good	Over; very good	.....	Over; good	Average; good	.....	A. J. Ballhatchet, Fulham Palace Gardens, London, S.W.
	Over average	Average; good	Under	Average; good	Average; good	Average; good	Over average; good	Average; very good	.....	J. W. Odell, The Grove, Stanmore

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5, Southern Counties.										
MIDDLESEX	Average; good	Under; bad	Under; bad	Over; very good	Over; very good	Over; good	Under; good	Over; good	.....	G. Wythes, Syon House Gardens, Brentford, W.
	Average	None	Average	Average	Average	Under	Under	Under	Under	W. Bates, Cross Deep, Twickenham
SURREY	Over; good	Average; good	Over; good	Over	Over	Under	Over; very good	Over; good	Average	A. Evans, Lythe Hill, Haslemere
	Average; good	Under average	Under average	Under average	Average; good	Under	Over average; good	Average; good	Average; good	J. Tanner, Tandridge Court Gardens, Godstone
SUSSEX	Average; very good	Average; very good	Much under	Average	Average	Under	Average; very good	Average	Under	F. Rutland, Cross Deep, Chichester
	Average	Under average	Under average	Average	.....	.....	Average	Average	Average	Geo. Goldsmith, Leonardslee Gardens, Horsham
	Average	Under	Average	Excellent	Average	Under	Average	Under	Average	J. Rust, Eridge Castle Gardens, Tunbridge Wells
	Under	Under	Under	Under	Over	Under	Under	Average	Average; Walnuts under	F. Geeson, Cowdray Park Gardens, Midhurst
	Average; good	Average; good	Average; good	Full average; good	Average; good	.....	Average; good	Average; good	Under average	Alex. Reid, jun., Possingworth Gardens, Cross-in-Hand, Hawkhurst
	Over	Under	Very thin	Average; good	Over; good	Average; good	Over; very good	Average; good	Under	E. Burbury, Castle Gardens, Arundel
WILTSHIRE	Average; good	Under	Under	Average	Over; good	Average; good	Average; good	Average	Average	H. W. Ward, Longford Castle, Salisbury
	Under	Under	Under	Average	Under	Under	Under	Under	Under	F. King, The Castle Gardens, Devizes
7, England, N.W.										
LANCASHIRE	Under	Under	Under	Average	Average; good	.....	Under	Average; good	Under	J. Hathaway, Lathom House, Ormskirk
	Under; good	Under; good	Over; good	Average; very good	.....	.....	Average; good	Average; good	Under; good	Wm. P. Roberts, The Gardens, Cuerden Hall, Preston
	Under	Under	Under	Under	.....	.....	Under	Average	.....	W. B. Upjohn, Worsley Hall Gardens, Worsley, Manchester
	Under; good	Average; good	Average; good	Over; good	Under; bad	Under; bad	Over; very good	Over; good	Under; good	T. Hargreaves, The Gardens, Ashton Hall, Lancaster
	Under	Under	.....	Average	.....	.....	Under	Over; very good	.....	B. Burham, The Gardens, Croxteth Hall, Liverpool
	Under	Under	Under	Under	.....	.....	Average	Good	.....	S. M. Master, Gawthorpe Hall, Burnley
WESTMORELAND	Under	Under	Under	Under	.....	.....	Under	Average	Under	W. A. Miller, Underley Gardens, Kirkby Lonsdale
8, England, S.W.										
CORNWALL	Under	Under	Average	Under; bad	Average; good	.....	Average; good	Over; very good	Under	G. Hall, Port Eliot Gardens, St. Germans
	Average	Average	.....	Morellos over	Average	.....	Over	Under	.....	A. Mitchell, Tehidy Park, Camborne
	Average	Under	Under; bad	Average; good	Under; bad	.....	Under; bad	Average; bad	Under; late	Chas. Lee, Boconnoc, Lostwithiel
	Under	Under	Under	Under	Over	.....	Over; good	Under; very good	Average	James Murton, Pencalenick, Truro
DEVONSHIRE	Average	Under; bad	Under; bad	Average	Bad	.....	Over; very good	Good	.....	George Baker, Membland, near Plymouth
	Average; good	Under	Under	Over	Under	Under	Good	Over; good	Under	James En-tone, 38, Temple Road, Exeter
	Under	Under	Under	Average	Under	.....	Average	Average	.....	T. Feun, Stoodleigh Court, Tiverton
GLOUCESTERSHIRE	Under; good	Under; bad	Under; bad	Average; good	Over; good	Average; very good	Average; good	Average; good	Under average	Alexander Scott, Sherborne House Gardens, Northleach
	Average; good	Under; bad	Average; good	Average; good	Under; bad	Under; bad	Under; good	Under; good	Under	J. Clare, Toddington, Winchcombe
	Under	Under average	Under	Average	Under average	Under average	Average	Under average	Average	W. Greenaway, Dodington Gardens, Chipping Sodbury
	Under	Under	Under	Morellos under	Average	Under	Very good	Very good	Under	T. Arnold, Cirencester House Gardens, Cirencester
	Average	Under	Average	Average	Average; good	Under	Over	Average	Bad	A. Chapman, Westonbirt, Tetbury
	Under	Under	Under	Average	Average; good	Under	Average	Over	Average	J. Sowray, Highnam Court Gardens, Gloucester
	Average	Under	Under	Under; bad	Average	Average; good	Over	Average	Under	W. Nash, Badminton Gardens, Chippingham
HEREFORDSHIRE	Under; middling	Under; bad	Average; good	Over; very good	Average; good	Under; good	Under; good	Average	Average	J. Watkins, Pomona Farm, Withington, Hereford
	Average; good	Average; good	Under; good	Over; good	Over; good	Average; good	Average; very good	Over; good	Over	K. McKenzie, Allensmore Court, Hereford
	Over; good	Under	Under	Average; good	Average	Under; good	Average	Average; good	Over; good	Thos. Spencer, Goodrich Court Gardens, Ross
	Average; good	Under; good	Under; good	Over; good	Average; good	Under	Over; good	Over; good	Average; good	A. Ward, Stoke Edith Gardens, Hereford
MONMOUTHSHIRE	Average; very good	Under; bad	Under; bad	Average; good	Over; very good	Under; good	Under; bad	Average; good	Average; good	W. E. Bartlett, Glen Usk Park, Caerleon
	Average	Under; clean	Under	Average; good	.....	Under	Average; good	Over; good	Average	F. Coomber, The Hendre Gardens, Monmouth
SOMERSETSHIRE	Average	Under	Under	Under	Over	Average	Average	Under	Average	W. Iggulden, Marston Gardens, Frome
	Average; good	Under	Under	Average	Under	Average	Average	Average	Under	W. Hallett, Cossington House Farm, near Bridgewater
WORCESTERSHIRE	Under; good	Under; good	Under; very good	Over; good	Over; very good	Under; bad	Average; good	Average; very good	Average; good	J. Austen, Witley Court, Stourport
	Under	Under	Over; good	Over; very good	Over; very good	Under	Over; good	Over; very good	.....	A. Young, Abberley Hall Gardens, Stourport
	Under; very good	Under; good	Average; good	Over; very good	Average; very good	Under; none	Average; good	Average; very good	Under; good	W. Crump, Madresfield Court, Malvern
	Average	Under	Average	Average; good	Average	Under	Over; good	Over; good	Under	J. Aston, Cotheridge Court Gardens, Worcester
	Under	Under	Under	Under	Bad	Bad	Average	Very good	.....	J. Matthews, Burford Gardens, Tenbury
	Average; good	Under; bad	Average	Over; very good	Average; good	Under; bad	Over; very good	Over; very good	Over; good	W. Child, Croome Court Gardens, Severn Stoke
	Under	Under average	Average	Very good	Average	Average	Bad	Under average	Few grown	J. Masters, Market Gardener, Evesham
	Under; good	Under; good	Average; good	Under; good	Over; very good	Under; bad	Average; good	Under; bad	Under; good	F. Harris, The Gardens, Eastnor Castle, Ledbury
WALES.										
ANGLESEY	Under	Under	Under	Good	Under	Average	Good	Good	Under	J. Owen, Henlly's Gardens, Beaumaris
BRECONSHIRE	Under; good	Under; bad	Under; good	Average; good	Average; very good	Average; very good	Under; good	Average; very good	.....	A. Ballard, Glanusk Park

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
WALES.										
CARDIGANSHIRE	Under	Under; bad	Under	Average	Average	Average	Over; very good	Average	Poor	R. C. Williams, Crosswood Park, Aberystwith
CARMARTHEN	Very bad	Bad	Under	Under average	Average	.....	Average	Average	Under	Lewis Bowen, Edwinstford, Llandilo
CARNARVON	Under	Under	Under	Under	Under	Under	Average	Average	.....	A. Calder, Vaynol, Bagnor
DENBIGHSHIRE	Average; good	Under; good	Average; good	Average; good	Average; good	Over average; good	Over; very good	Average; very good	Under; bad	P. Middleton, The Gardens, Wynnstay, Ruabon
	Under	Under	Under	Average	Over	Average	Over	Under	Under	Walter Weir, Acton Park Gar- dens, Wrexham
GLAMORGANSHIRE	Under; good	Average; good	Under; good	Over; very good	Average; good	Under	Over; very good	Over; very good	Average	R. Milner, Penrice Castle Gar- dens, Swansea
	Average; good	Under	Under	Under	Over	.....	Average	Over	.....	A. Pettigrew, Castle Gardens, Cardiff
	Over; good	Bad	Good	Good	Good	.....	Very good	Good	Very good	J. Muir, Margam Park, Port Talbot
MERIONETHSHIRE	Under	Under	Average	Average	.....	.....	Average; very good	Over; good	Under	J. Bennett, Rhug, Corwen
PEMBROKESHIRE	Under	Under	Under	Over; good	.....	.....	Good	Average	Under; good	Geo. Griffin, Slebeck Park, Haverfordwest
IRELAND—										
9. Ireland, N.										
ANTRIM	Under	Under	Under	Under	.....	.....	Average; good	Under; good	.....	G. Porteous, Garron Tower, Belfast
ARMAGH	Under	Under	Under	Average	Under	Under	Under	Under	Under	T. Sheasby, Castle Tilon
DOWN	Under	Under	Under	Average	.....	Average	Average	Average	.....	J. Taylor, Mount Stewart
WESTMEATH	Under; bad	Under	Under	Under	Under; bad	Under; bad	Average	Bad	Under	J. Igoo, Garden Vale, Athlone
10. Ireland, S.										
CORK	Under; bad	Average; good	Average; good	Over; good	Not grown outside	.....	Average; good	Under; good	.....	J. Woolford, Castle Bernard, Bandon
	Average	Under	Under	Average	Average	Under	Average	Over	Average	R. Wilson, Mitchelstown Castle, Cork
KILKENNY	Average; good	Very bad	Under; bad	Average	.....	Under	Very good	Very good	Average	H. Carlton, Kilkenny Castle Gardens
	Average	Under average	Under average	Under average; good	.....	Average where protected	Under average	Average; bad	Average	William Gray, Woodstock, Inistioge
TIPPERARY	Under	Under	Very good	Very good	Very good	Under	Average	Under	Good	W. Ryan, Knocklifty, Clon- mel
WICKLOW	Average	Under	Under	Average; good	None outside	Under	Abundant; very good	Average; good	.....	W. Cooper, Killrudy, Bray
CHANNEL ISLANDS.										
ISLAND OF JERSEY	Under	Under	Average	Average	Average	Under	Average; good	Under; good	.....	C. B. Saunders, St. Saviour's, Jersey
ISLAND OF GUERNSEY	Average; good	Average; good	Over; good	Average; good	Over; good	.....	Over; good	Average; good	.....	C. Smith & Son, Caledonian Nursery, Guernsey
ISLES OF SCILLY	Under	Average	Average	.....	.....	.....	Average	Under	.....	J. Jenkin, Tresco Abbey Gar- dens

FLORISTS' FLOWERS.

LARGE-FLOWERING PELARGONIUMS.

THE time has arrived for hardening off and cutting down large-flowering Pelargoniums which bloomed in May and June. Cutting down is regulated to some extent by the time when it is required that the plants should be in bloom the next season; those required to be in flower in May and June should be cut down early; those to flower in July and August should be cut down later. Previous to cutting down, it is the practice to "dry off" the plants, that is, water is withheld, a practice which matures the wood, both old and young. If the plants can be put out in the open, and laid upon their sides, they will do as well there as anywhere else. A good ripening of the wood is better both for the old stool and the wood out of which cuttings are made; for the harder the wood for cuttings the better do they strike, and there is no art in rooting them. They can be put into a bed of light sandy soil in a frame, or into pots of the same compost, and stood on a greenhouse shelf; or, for the matter of that, they can be put out on an open border, and shaded from the sun, and they will quickly root. I have seen cuttings of large-flowered Pelargoniums put in which looked like pieces of dry sticks, but they rooted quickly, and made excellent plants.

After the plants have been cut down, they should be put into a cool frame and sprinkled overhead every morning until they begin to break into growth, and then they can be potted. Those first cut down will be sufficiently broken to be repotted towards the end of August, turning the plants out of the pots, shaking the soil from the roots, and trimming them somewhat, and then repotting in pots that will just contain the roots, using a compost made up of

fine yellow loam, leaf soil, and sand, taking care in the act of potting not to break off any of the young shoots being put forth from the old wood. The plants should be placed in a cold frame, be kept close for a few days, and shaded from the sun, and occasionally have a gentle sprinkle. As soon as they show signs of growth they can be taken to a cool well-ventilated plant house. The plants required for early flowering should be placed in their blooming pots about the end of September or early in October; on this occasion using such a compost as that before mentioned, but adding some well-decomposed manure. As the plants have made considerable progress in growth, repotting should be done with great caution. During the latter part of September and during October, the plants should be well housed on a lean-to stage, without crowding them, and where there is plenty of light; they being kept warm, that is a night temperature of 50° is permissible, and 65° by day, so as to encourage growth, and have plenty of air during the morning. It should always be borne in mind that specimen Pelargoniums in order to flower them well, must make their principal growth before Christmas.

Cuttings, as soon as sufficiently rooted, should be potted singly into small pots in a compost made light by the addition of leaf-mould; and as soon as established, shifted into large 60 or 48-sized pots. They should be kept warm and encouraged to make a free growth, and as soon as well-established after the second shift, the top of the leading shoot should be pinched-out, which causes it to break into side shoots, and thus bushy plants are formed. Such plants as these, if obtained from a nursery in November, can be grown on into excellent flowering specimens by June. A dozen fine large flowering varieties will be found in Ambassador (Foster), Amethyst (Brebant), a variety remarkable for its rich purple colour; Claribel (Hoyle), pure white;

Corsair (Foster), Despot (Foster), deep crimson, fine in colour; Duke of Norfolk (Foster), deep crimson-scarlet, very bright; Fortitude, (Foster), Maid of Honour (Foster), Martial (Brebant), Outlaw (Foster), Ritualist (Foster), and Sister of Mercy (Foster).

Among what is known as the decorative section, there are some very fine varieties, well worthy cultivation either for exhibition or house decoration; and a good selection will be found in Duchess of Edinburgh, Empress of India, Formosa, Gold Mine, probably representing the nearest approach to an orange Pelargonium yet raised; Lady Isabel, bright lilac, very distinct and attractive; Maggie, Mons. Desmoulin, Nellie Hayes, Radiant, Rosetta, rosy-purple, quite distinct; Spotted Beauty, and Triomphe de St. Maude, deep crimson, an excellent grower, and very free. R. D.

DWARF CHRYSANTHEMUMS.

These are the most useful of all varieties of the Chrysanthemum to those who have limited space in which to flower the plants. The present fashionable craze for large blooms causes the plants in a general way to be grown very tall, in some instances exceptionally so, and persons with low pitched houses find themselves prohibited from growing their plants in this manner. Fortunately for them, there are some new varieties which are of a dwarf character; take for instance, Mdle. Marie Hoste, one of the latest to bloom, and the finest of the new Japanese varieties, which is of comparatively dwarf habit. At the present date my plants of Mdle. M. Hoste are but 2½ feet high, whereas plants of A. H. Neve, and Cleopatra are 6 feet in height, which makes them quite unsuitable for growers with small houses. I could give other instances of the progress now being made in this direction, and a little later I hope to be able to give a list sufficiently extensive

for most small growers of the dwarf-growing varieties, and which will comprise those with blooms equalling in size and in good quality any of the taller-growing ones. I think I hear some one say, "But cannot we have equally good blooms from the naturally tall-growing sorts by a system of culture known as the dwarfing process?" I say, no, we cannot, except in a very few instances, as it appears to be necessary for most of these plants to be allowed to assume their natural mode of growth if blooms of the finest size and quality are required. It is certainly possible to grow the plants as dwarfs and get good blooms, as long as the grower does not aspire to the exhibition-table. There are two ways of obtaining dwarf plants: one is by cutting down plants in the months of May and June to within a few inches of the ground, and allowing them to carry from three to six shoots, each one to develop a single bloom. This is the best way of obtaining plants from 2 to 5 feet high of the leading varieties; and plants so treated will have their new growth well advanced by this date, all that is now necessary being the removal of all side shoots as fast as they appear, so as to concentrate the energy of the plant in these growths, each of which will in due time produce a flower-bud at the point. This bud should form some time during the month of August, as a rule, according to the variety and the manner in which the plants have been treated. Pots 8 inches, and 9 inches for the largest, are sufficiently large for the strongest plants, carrying, say, six blooms each. The second method is to pinch out the point of the shoot, presuming the plant was grown at first with one stem until 6 inches or 1 foot high; the result of such topping is the production of additional shoots, which must be limited to three, four, or more, according to the natural size of the variety, and for the purpose the blooms are required. It is needless for me to say, the fewer the blooms the finer.

Where plants are looked to, to furnish a quantity of bloom, rather than blooms of fine quality, they may yet be dwarf, and there are two methods by which it is possible to obtain them. The cuttings are rooted, say, about the middle of the month of January, and the point of each is removed when the cutting is 4 inches high, and the resulting shoots are restricted to four on a plant. These shoots are allowed to grow without stopping till a natural break is made, and they are restricted to, say, three to each main branch, which is a total of twelve; and these in time break without being forced so to do, sending out numerous small side-growth; and these and the central shoot are allowed to develop all the blooms which form, the result being a mass of bloom on long stems which are more useful for cutting purposes than the same number of blossoms on shorter stems would be, obtained by continually topping the shoots at 4 inches up to the middle of the month of July. These latter may give a large quantity of bloom, but the plants occupy a great deal of space; and for cutting purposes the blooms are not so useful, the stalks being short and weak. I have now described my method of obtaining dwarf plants, and the culture that is necessary at the present time is to attend most carefully to affording the plants water at the roots—want of attention in this respect spoiling the foliage and ruining the appearance of the plants. Too much water at the roots has much the same result, and although the Chrysanthemum is a moisture-loving plant, it can get too much; it is surprising how long a time the plants will go and look well without water, provided they are properly potted, the soil rightly chosen, and it is rammed hard into the pots—in this state the moisture does not pass away nearly so quickly as when the soil is potted loosely. *E. Molgoux.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

HERBACEOUS BORDERS.—Delphiniums, Thalictrums, Potentillas, Tradescantias, Spiræa palmata, C. gans, &c., are now rendering good service, and

the only attention which the plants growing in these borders are likely to require during the next two or three months is that of keeping the ground free from weeds, removing decayed leaves and spent flowers, and affording the necessary support to the stems of Delphiniums, Thalictrums, Helianthus, Phloxes, &c., and watering them at the roots when and where necessary.

BEDDING PLANTS.—Owing to the recent heavy rains which we have had, bedding plants of every kind have made rapid and satisfactory growth, and, having discontinued picking off the blooms, the beds which are filled exclusively with flowering plants are now looking quite gay. The only after-attention necessary, until the time for taking cuttings has arrived, is to remove all faded flowers and leaves, and weeds, and to give them water when this is thought necessary. Pinch the points out of extra strong growths, so as to promote and maintain a symmetrical surface in the floral display of beds filled with Pelargoniums, Calceolarias, Verbenas, Ageratums, Heliotropes, &c., and peg down the shoots of trailing plants as occasion may arise. In the case of mixed beds, in which standard, bushy, and trailing plants are used in variety, care must be taken not to allow the stronger growers to smother the weaker ones, but each must have ample space to develop and appear to advantage. Large beds of mixed plants of irregular heights, with colours somewhat regularly distributed, are certainly very telling, and contrast well when viewed in proximity to masses of colour.

BUDDING ROSES.—The present is a capital time for carrying out this process, as the bark of both Briars and Roses is in good condition for operating upon. Although the method of budding is generally understood by gardeners and a great number of amateurs, there may be, nevertheless, some among the many readers of the *Gardeners' Chronicle* who would like to be initiated into the way of doing it. I will therefore repeat the details set forth on a previous occasion. Select shoots containing plump buds of the desired varieties of the Rose to be budded, cut off the leaves and half the leaf-stalk, label and stand them on their butt-ends in a can containing water, so that they may be kept fresh until used. Then make a transverse incision about $1\frac{1}{2}$ inch from the main stem on the upper side of a stout shoot, and from the middle of this a longitudinal one extending to about 1 inch in the direction of the stem. Next remove a bud from one of the shoots referred to by taking it in the left hand, and inserting the knife about half an inch below the bud, and with a clean sloping cut, pass the knife inwards well under the bud, and then slope outwards, so that the eye shall be in the centre of the shield thus removed. In doing this, the knife will necessarily cut off a thin slice of wood with the bud; this should be removed by turning the cut surface upwards, holding the piece between the forefinger and the thumb of the left hand. Then enter the point of the knife between the inner bark and the upper extremity of the wood, which raise a little to enable it to be laid hold of between the point of the knife and the nail of the thumb, and then with a sort of twitch, remove the wood, being careful not to injure the base of the bud. This done, with the thin handle of the budding-knife raise the bark on each side of the incision, commencing at the corners immediately below the cross-cuts. In raising the bark sufficiently to admit of the bud (held by the petiole) being gently pushed into position, be careful not to injure the cambium with the handle of the knife. Should the bark on either side of the bud be longer than the incision in the stock, cut a piece off the top end, so that the bark and cambium of the bud and stock may fit closely together; binding the bud in position with bands of soft matting or worsted, in such a manner as to exclude air, and keep the bud on the albumen, beginning at the end of the incision, and binding round and round to the top, allowing the bud ample room between the turns, and passing the end of the tying material under the last turn, so as to secure it. An expert budder can pass a large quantity through his hands in one day.

GENERAL WORK.—This will consist in mowing and sweeping lawns, weeding, and rolling the gravel walks, and hoeing them—where they are made of shell or sea-sand.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

AMARYLLIS.—Much depends upon the time these plants are started. Those which were started

in heat early in the season, and have been kept growing in a nice genial temperature, will now have completed their growth; still, great care must be taken that the leaves are thoroughly matured. If the plants have been stood in a light position, and they have had the necessary amount of air and water, the leaves should have plenty of substance in them. Avoid giving more shade than will prevent the foliage being injured by bright sun, as on the thorough maturity of last season's growth depends the amount of bloom to be looked for next year. Syringe the plants overhead every afternoon when the weather is bright, to keep the foliage clear of thrips and spider, which, under the drier conditions the plants from this time are subjected to, are almost certain to put in an appearance. Plants which were started late should be encouraged to make their growths; close the ventilators early in the afternoon, syringing the plants thoroughly to keep insects in check. Young seedlings should be sponged occasionally to keep the foliage thoroughly clean, and any seed which may be ripe may now be sown, afterwards plunging the pots in a gentle hot-bed made from fermenting materials.

NERINES.—This most useful plant is very seldom seen in a satisfactory condition. When the plants have completed their growth, instead of keeping them in a cold frame or pit, stand them at the foot of a south wall, so that they will get the full rays of the sun, plunging them to half their depth in coal-ashes. By treating them in this way, the bulbs will get thoroughly matured. They may remain under these conditions until the end of the summer, when they should be placed in the greenhouse, where they are intended to bloom.

SPARMANNIA AFRICANA.—Young spring-struck plants of the above which are now growing in 4-inch pots, may be shifted into pots two or three sizes larger, as soon as they are ready, and afterwards place them in a cold frame for a few days until the roots take possession of the fresh soil, when they may be stood outside on a bed of coal-ashes. Old stock which were cut back, and have started into growth, should be shaken out and repotted in a compost of three parts loam, and one each of leaf-soil and decayed manure, with sufficient sand to keep the same porous; place them in a cool house or pit until established, shade them during bright weather, and syringe the plants overhead when closing the ventilators in the afternoon. When they have commenced to make new growth, gradually harden them off before removing them outside.

EUPATORIUM WEINMANNIANUM AND E. RIPARIUM.—Shift these into larger pots as soon as they are ready—5 or 6-inch will be found large enough for young stock propagated this spring, but for plants which bloomed last year, and have been cut back, 9 or 10-inch will be required. Pinch out the points until the necessary number of shoots is obtained, but by no means carry the pinching too far, as five or six strong growths are preferable to a larger number of smaller ones. After repotting, keep them rather close for a few days, then gradually admit more air, so as to prepare them for the open.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

ONIONS.—The preparation of the beds for the autumn-sown Onions should now be made by digging it deeply, employing plenty of rich, partly-decayed manure. If the maggot is feared, a slight quantity of gas-lime should be dug in. It is yet full early to sow the seed of Onions, but there is much to be gained by having the ground got into good condition for its reception. The flat and globe Tripolis, including the larger varieties of these, as the Giant Rocca, and the white Portugal, and Lisbon. The yellow Trebon is a mild flavoured, sweet, and agreeable sort, answers well for autumn sowing. By sowing a good breadth of autumn Onions, there is always a supply after the stored Onions are come to an end, or if the summer crop should fail.

CARROTS.—Seed of Early Horn Carrots may now be sown for drawing whilst young, or to supplement the spring sowings; a greater quantity of land being sown if that sowing has failed to a large extent. If the weather be dry at sowing time, germination will be assisted by covering the beds with mats, &c. As Carrots suffer from various enemies, a change of ground is advisable, using such materials as soot, common salt, wood ashes, as a dressing in preference to rank manures.

PEAS.—Those Peas which are in bloom should be well mulched in light soils with stable dung; the mulching will be more effectual if it is preceded by a good watering of the soil on both sides of the rows, first loosening the soil with a digging-fork. Tall kinds of Peas should be topped when the desired height has been reached, thereby inducing haulm to branch out. As a preventive of mildew in Peas, a thorough watering once or twice a week will be of much service. A small quantity of the dwarf kinds of Peas may still be sown on warm borders, in rows 3 or 4 feet apart. To enable a fair crop to be gathered, good cultivation is essential.

POTATOS.—Early kinds should be lifted as soon as ripe, and stored in a cool place. The varieties, Victor and Veitch's Ashleaf, have turned out excellently this season, and, though a little late, there is no trouble, so far, with the disease. Those roots that are required for seed should be carefully lifted, and laid out in the sun, and allowed to get dry before putting them into store. Care should be taken to obtain the seed true. A change of seed will frequently give better crops than seed saved of the same year by year, and should be arranged for with other gardeners at a distance. If the early Potato-ground is to be planted with winter vegetables, fresh manure may not be necessary for all of these, but deep digging will certainly be necessary.

CELERY.—To have Celery in good condition for a long period at different seasons, it requires to be planted in succession, and the earliest lot will now be large enough to receive liquid manure occasionally, or a surface dressing of some good kind of artificial manure, flooding the row with water after the application. Earthing-up should not be done too early, but as the first lot of Celery is quickly used, there is less danger in doing it than would be the case with later crops; and as it is necessary to have well-blanching sticks, the earthing-up of the earliest plants must soon be undertaken. See that the soil is well moistened before beginning operations. Late Celery should be planted as soon as large enough to lift, it being best to put out the plants before they get drawn, and there is but little check given by this early transplantation.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

THE COOL-HOUSE.—*Odontoglossum crispum* is a universal favourite, and no Orchid is imported in such large numbers, or which finds so ready a sale. Many persons are engaged in growing the plants for market purposes, and find their cultivation a sound investment, the cut flowers being at all times in great request. Large and well-shaped, as well as beautifully-spotted, varieties occur in every importation of the plants, and these, if sold, often realise high prices. Few other species of Orchids are more easily or more cheaply grown than *O. crispum* when the right treatment has been hit upon; but this is sometimes missed, and then it is no easy task. The structure I prefer for this species of *Odontoglossum* is a plain and simple one. A span-roofed house running north and south is just the right one, and should be of sufficient width to admit of side-stages, and a stage in the middle, which should be brought well up to the light—that is, the top of the stages should not be more than 3 or 4 feet from the glass, and they should be stepped on each side. Ventilation should be provided at the top and the bottom, and there should be a door at each end of the structure; the side-lights need not be made to open. I have previously advised the grower to have as few obstructions to a free admission and circulation of air as possible, and that is best obtained by having simple stages for the plants, the more obstructive stage covered with moisture-retaining materials directly underneath the plants, which some growers favour, and others think absolutely indispensable, finding no place in the house. For aerial moisture, dependence should be had on a floor and paths consisting of moisture-holding substances, as coal-ashes, fine gravel, or sand, which can be moistened as may be required. The blinds, which should be fixed to rollers, if they are run down on strips of wood or wires raised 6 inches above the roof, will cause the air to circulate between the glass and blind, and thereby tend to keep the house cool in warm weather. By paying attention to the plants, the right position for them will soon be ascertained, and position is of as much or more importance in Orchid growing as the nature of the compost or the amount of water supplied to the plants. In a former Calendar

the beginning of the month of September was advised as the proper time to repot plants of *O. crispum*, that is, supposing them to be growing in a house such as I have described; but if it be a lean-to, facing north, it is different. In a house of this kind the plants thrive during the summer months without much trouble, but more care is necessary during the winter-time, and September is too late in the year to re-pot the plants; and if they were not re-potted early in the spring, it should be undertaken forthwith. There is no better compost for this species than Orchid peat and sphagnum-moss, to which very small crocks are added. The old compost should be entirely removed, and the new pressed down firmly, so as to make the plant steady in the pot. If the sphagnum-moss is growing too freely, and smothering the pseudobulbs, as it sometimes will do on the early spring-potted plants, it should be pressed down whilst wet with the thumb and finger, and a layer of finely-pounded crocks sprinkled on it, which will have the effect of checking its growth. The new growths must be kept free from thrips and aphides.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

STRAWBERRY BEDS.—The plants of most varieties having been cropped heavily, should be attended to so soon as the fruits have been gathered, for if good strong and well-matured crowns are not prepared by the end of the season, there will be but a scanty crop next year. Remove all runners not required, a portion of the lower leaves, and all weeds, after which spread a good thickness of manure over the roots and between the rows, and if the soil be dry, as is frequently the case, beneath the plants, give a thorough soaking of water, repeating the watering at intervals till the roots have got well moistened to a good depth. Finish the layering of all young plants required if such has been delayed, get the ground prepared in readiness for planting them when in a fit condition, and lose no time in getting the early plants put out so that they may have plenty of time to grow and build up good crowns. When planting (if the young plants have been layered in small pots), give each a good watering before turning them out, and loosen the roots. Plant very firmly, especially if the soil is light and shallow; water a few times until the roots have taken to the new soil, and keep the ground free of weeds, by hoeing between the plants, and in every way possible encourage a free growth. Young plants may also be dibbled out 6 inches apart on a shady border for planting later, but these seldom bear fruit to any extent the following year. Water overhead should be frequently supplied on bright days till rooted, and the runners kept pinched out. Nets which have been in use for Strawberries should now be put over Gooseberries, Morello Cherries, &c., and any not required for further use stored away in some dry, airy shed, when perfectly dry.

GATHERING FRUIT will need daily attention, and on favourable occasions all hands should be put to this work. The fruits should at all times be gathered when perfectly dry, alike for bottling, preserving, and for the market. Cherries, and Black and Red Currants are usually forwarded, carefully packed in half-sieves, and sieves containing 24 lb. and 48 lb. net. These are supplied by the fruit salesmen. All baskets should be fastened down (first placing over the top two sheets of thick packing-paper) with sticks, and properly secured.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

PEACHES AND NECTARINES.—These fruits coming on in late houses should have the fruits well exposed to the sun, the sublaterals being pinched at the first leaf from the base. It is important that Peaches and Nectarines for the late supplies should be well-coloured, sunlight being each day less; moreover, we may have a repetition of the wet, sunless autumn of last year, and every ray of direct sunshine should be utilised to give colour and flavour to the fruit. Borders that may be getting in a dry state about the roots of the trees must be thoroughly watered, liquid manure being employed if trees are weakly, or crops very heavy. By liquid manure, I do not mean that which is obtained from the farmyard tank, as this fosters the production of succulent wood at this season, if applied in a strong state; and maintain a free circulation of air at all times in the house until the

stoning period be passed. Houses in which the fruit has commenced their second swelling may be shut up early in the afternoon, and the trees syringed; this will hasten ripening, and add size in the fruits. See that the fruit in this house is not unduly shaded with leaves. When the fruits are ripening, go over the trees daily and gather the ripest, placing them in the fruit-room for a few days, if they are to be used at home; but should they have some distance to travel, it will be better to pack them when gathered. Discontinue syringing trees when the fruit becomes ripe, and only employ the syringe again to keep the trees free from the ravages of insects after it has been gathered. In such houses, however, the condition of the trees should be a guide as to treatment from the present time till the fall of the leaf, exceptionally strong wood requiring a dry atmosphere, with a fair amount of light to secure due solidity. When the plants are less vigorous, a more humid air may be afforded, but the ventilators should not be closed on any account.

THE APIARY.

By EXPERT.

SALEABLE HONEY.—It should be the aim of every producer of honey for sale to put up the article in the neatest, cleanest, and most attractive form consistent with smallness of cost, so as to keep the price to the consumer as low as possible. Although sections put up in boxes made of cardboard, ornamented with gold-lace paper and other adornments, or metal cases enamelled in various tints, look very nice, all the extra cost this entails, generally amounting to 2d. per section, has to go on to the price of the honey, and is simply so much waste, as the whole is afterwards thrown away. Good sections are really so attractive in themselves, that it seems almost superfluous to want to add anything to artificially enhance their appearance; and if we can devise something that will protect the delicate comb from damage when handled, and keep flies, bees, or wasps from injuring it, this seems all that is really necessary. It may be taken for granted that glass on each side of the section is indispensable for showing off its beauty to the best advantage, and the next thing is to fix it so that it will keep in position. This may be done by having the glass cut the exact size of the section, $4\frac{1}{2}$ by $4\frac{1}{4}$ inches, and pasting a lace paper, which may be bought for the purpose, round the edges, taking care that it does not overlap more than three-eighths of an inch, in accordance with the regulation laid down by the British Bee-keepers' Association. The chief objection to this way, however, is, that it is not always possible to produce sections free from propolis, unless they are hung in the frames when in the hive, so as to have all the outside covered. There is a cheap wooden show-case made similar to a one-piece section, with a groove on each side to slide in the glass. This would seem to answer every purpose, as it could obviously be sold at about the same price as ordinary sections, to which, adding the cost of the glass, a serviceable section-case could be procured at about a quarter of the price of cardboard or metal ones, if a general demand was made, so that manufacturers could stock them in quantity.

HONEY-BOTTLES.—The best kind of bottles to use for extracted honey are undoubtedly those with screw-caps, as, although the cost is a trifle more than a cork or tie-over one, the purchaser will prefer them, as they look nicer on the table, are more handy for closing up when the honey is put away, and are more useful for various household purposes when it is consumed.

PLANT PORTRAITS.

ANTHURIUM ATRO-SANGUINEUM, *Garden*, July 9.—In connection with this, Mr. Gower makes the interesting statement that it was he who brought the first *Anthurium Scherzerianum* to Kew, where he flowered it. He obtained it in 1862, from Herr Wendland, its discoverer. Those who remember the illustration of the plant as it first flowered, may well be astonished at the progress made.

ASPLENIUM MONTANUM, *Meehan's Monthly*, July.

CATTELYA MOSSIAE VESTALIS, *Orchidophile*, April.

ODONTOGLOSSUM HASTILABIMUM, *Orchidophile*, May, 1892.

PEAR FONDANTE DU PANISEL, STRIPED, *Bulletin d'Arboriculture*, &c., June.

EDITORIAL NOTICES.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, JULY 26 { Royal Horticultural Society; all Committees. Lecture on "Insect-eating Plants," at 3 P.M.

SHOWS.

TUESDAY, JULY 26 { Carnation and Picotee, at the Drill Hall, James Street, Westminster.

WEDNESDAY, JULY 27 { Beckenham.
Hessel (two days).
Royal Botanic Society, Regent's Park, Musical Promenade.

THURSDAY, JULY 28 { Southwell Rose and Horticultural.
Halifax Rose.
Salterhebble (York) Horticultural.

SATURDAY, JULY 30 { Southampton Horticultural (two days).
Ripley Horticultural and Rose.

SALES.

TUESDAY, JULY 26 { Stove and Greenhouse Plants, at "Hughenden," Palace Road, Streatham Hill, S.W., at 1, by Protheroe & Morris.

WEDNESDAY, JULY 27 { Unreserved Clearance Sale, at the Palm Nursery, 106, Stamford Hill, N., at 12, by Protheroe & Morris (two days).

FRIDAY, JULY 28 { Established Orchids, at Protheroe & Morris' Rooms, at half-past 12.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°·3.

By the courtesy of our correspondents, we are now enabled to give in tabular form a rough estimate of the fruit crops for the year throughout the British Islands. Next week we hope to publish some of the more extended comments with which our correspondents have favoured us.

We may range the records of the most important commercial crops—Apples and Plums—as follows:—

Apples.

	Average.	Over.	Under.
Scotland	5	3	29
England and Wales...	55	8	101

Plums.

	Average.	Over.	Under.
Scotland	8	5	23
England and Wales...	31	10	114

Pears are almost universally greatly deficient. Cherries, on the other hand, have yielded generally a good average crop. Peaches, Nectarines, and Apricots are thin.

Small fruits, such as Gooseberries, Currants, Raspberries have been fairly good, as have also Strawberries, but the season has been short.

The general results are the same in Ireland as in Great Britain.

It remains now to be seen what prices have been, or which will be obtained, in the market before we can form any estimate of the commercial value of the fruit crops of the season, and of the profit they have yielded to the grower. We fear the result will not be so satisfactory either to producer or to consumer as sundry enthusiasts would endeavour to persuade us.

Instruction in Gardening.

A GREAT deal was said some time ago in these columns and elsewhere as to the action of certain of the County Councils in commissioning instructors in gardening to visit various districts with a view of imparting information of a character likely to be useful to the auditors. Some there were who derided the whole scheme; others who threw cold water upon it; others who performed the much more useful office of showing how, and where, and why, failure was likely to occur; and still others who pointed out the best means of achieving success. The affair was evidently one of a tentative and experimental character. For our own parts, we warmly encouraged the scheme for many reasons, the most potent among them being that it seemed to us that, if properly carried out, such a scheme could not fail to be the means of diffusing and promoting a knowledge of gardening among the rural population, a knowledge which would in the end largely contribute to their own benefit, and to the general welfare.

Another reason which commended the scheme to our approval was, that we saw in it a means of raising the position of gardeners and gardening in the eyes of the public.

The time has now come when we may appropriately take a brief survey of what has been accomplished. And from this survey, it is probable that some hints for the future may be obtained. In response to our enquiries, many of the teachers were good enough to forward to us programmes showing the subjects upon which they lectured, and to give us information as to the manner in which they treated their subject.

We have scanned these programmes with very great interest, because they were drawn up by the lecturers themselves. The lecturers were mostly practical gardeners, and as such conversant with the requirements of their auditors. So far as we know, the course to be followed was in no case prescribed by the County Council, but each man followed the course he thought best under the circumstances. Now, when we come to compare the schedules before us it is very interesting, and we may say, very satisfactory to find how nearly they resemble each other in essentials. There are, of course, little differences of detail, but the main principles followed are the same throughout. The number of lectures given and varying local circumstances, sufficiently account for what differences there are. These principles are the same that we have consistently advocated, as the appropriate ones to be followed in this particular matter.

As in reply to our request we received so many similar accounts, it might be thought invidious for us to single out any one for special comment; but by way of illustrating our remarks we may print the subjoined letter without appending to it the name of the writer:—

"The system I follow is to talk in quite plain language, avoiding as far as possible technical terms. It is a difficult matter to overcome the prejudices of some persons in rural places, and to convince them that they need instruction in the management of their gardens or allotments. The subjects for the present course are, "Advantages of Cottage Gardens and Allotments," "Apples and Pears for Profit and Home Use," "Profitable Fruit Culture," "Useful Vegetables." My plan is to point out by practical illustrations what to avoid and what to do. I find that, for future guidance, persons like to know the wrong way as well as the right to follow, to achieve the best results.

"The most important point is to teach the right methods of cultivation, mainly with a view to provide a full home supply of vegetables and fruit, rather than to attempt to teach how to make a fortune from a small plot of land, which of course is quite out of the bounds of possibility. Such ideas do more to imbue the listeners with scepticism than aught else. I also find that the mere reading of a paper is not sufficient to enlist the attention of an audience. Something more is needed to give interest to those who are in almost total ignorance of how to manage a garden, however small. In all rural districts, there are strictly local methods of dealing with the manner of cropping, pruning trees, and so on, which a stranger would find some difficulty in understanding.

"The thorough preparation of the soil—such as trenching, for instance—is but imperfectly understood, and the reasons for so doing, and the results of good and bad methods, are not well understood. Much ignorance is displayed regarding the procuring, planting, and after-management of fruit trees, especially Apples. As a rule, the sorts are ill-chosen, no regard being paid to the selection of those sorts which will succeed in certain soils. The kind of tree bought is, as a rule, anything but the best. Cheapness is a point which receives far more attention than it should, as it is a well-known fact that cheap things are often the dearest in the end. Some growers of fruit trees appear to cater specially for this class of customers, selling trees at 9d. and 1s. each, which are simply maidens allowed to grow the second year without any cutting down, simply topping them; the result is, in many cases, a tree 4 to 5 feet high, with just a few shoots near the top (a mere apology for a bush). These, if planted in an exposed position, are in a sore plight after a strong south-westerly wind has swept the bulk of the fruit off. Then the trees are indifferently planted, often a mere hole is dug out, the roots crammed in anyhow, much too deeply, and as for mulching that is a point never heard of. Of course, it is understood that I am now alluding to persons in a general way—there are exceptions even in this; some men have gleaned knowledge, and strive to put it into practice. The lecturers would do well to find out, and point out to the audience, all such discrepancies as here named, making himself acquainted with the nature of the soil in the neighbourhood if possible, then to illustrate either by the aid of diagrams, or by the actual bushes and trees, how to properly plant, prune, and manage the trees afterwards. No matter how clearly the methods to be adopted are explained, if ocular demonstration is given the subject is fixed much deeper in the mind of the listener; for instance, in treating upon Apple culture, both as standards and bushes, my plan has been to provide an illustration and bush tree, which is easily done. Abundance of wild Cherries grow in the woods here; the young growths are capital representations of standards. I point out the importance of early staking newly-planted trees of the last-named, and not only tell them how to stake them on the most approved principle, but demonstrate the operation on the platform.

I am aware there are varied opinions as to the advisability of non-pruning over pruning the first year. I have heard them expressed pretty freely among the audience. I always provide for any argument of this kind by carrying with me sample branches or shoots from pruned, unpruned, or simply topped shoots, which demonstrate clearly to any who has a doubt as to the system adopted. Such proofs as these cannot fail to give satisfaction. Then, again, in pruning established trees, where space will allow, I advocate extension of growth in preference to root-pruning, laying especial stress upon the desirability of ample branch space, avoiding overcrowding. I generally commence by showing a shoot of last year's growth 2 feet long, the result of cutting back to within, say, 4 inches of the base for the past three years, for instance, without root-pruning. After explaining the error of such treatment, showing no prospect of fruit-spurs forming

on the previous year's growths left, I advise an extension principle of pruning in the place of root-pruning. One night a well-to-do amateur interrupted me by flatly contradicting the method I was explaining; he had no doubt managed his trees by judicious root-pruning, but when I produced afterwards specimens of shoots and branches showing the results of extension, these being thickly studded

of the persons they are intended for. Such a plan as this only leads to confusion in the minds of the audience. Some knowledge ought to be previously gleaned from the locality respecting this point, of the sorts which do succeed; improvements can then be sometimes made, and the lecturer places himself more in touch with his audience and by a far better chance of gaining their confidence. *Lecturer.*"

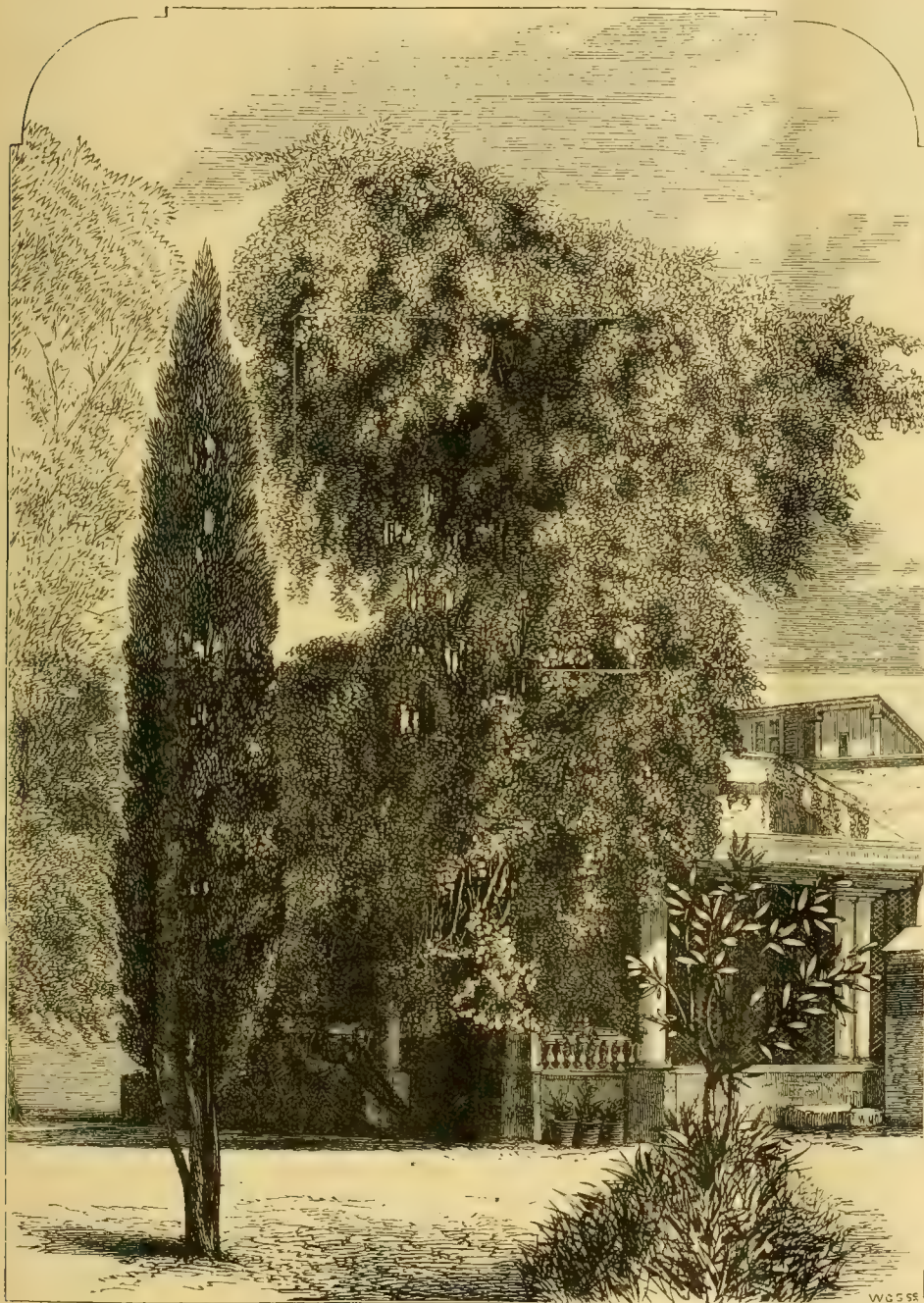


FIG. 16.—BOUGAINVILLEA SPECTABILIS AT BANGALORE, GROWING OVER A CASUARINA TREE 40 FEET HIGH. (SEE P. 92.)

with fruit-buds, and the length of the annual growth perceptibly decreasing, the tree altogether rendered fertile without touching the roots, my critic collapsed. Of course, I always take care to explain that the roots must be kept near to the surface, especially in heavy soil by surface dressings rather than digging manure in deeply. Well-executed diagrams will, of course, illustrate the ideas of a lecturer equally well. It is a mistake for any lecturer to go into a strange neighbourhood and give a long list of names of any kind of fruit or vegetable without knowing whether they are applicable to the soil or the requirements

This is what was said by the local Secretary of the East Suffolk Technical Instruction centre, regarding the class conducted by Mr. JORDAN, gardener to Rev. H. BERNERS, Harkstead Rectory, Ipswich:—

"But the class which was the most useful in a purely agricultural district, I consider to be that of horticulture, for the lessons in this subject were not lectures only, but practical demonstrations, e.g., when the lecturer treated of thinning and pruning, he not only told the students how to do it, but

brought Gooseberry and Currant bushes and young fruit trees with him, and actually went through the process before their eyes, initiating them into the mysteries of stopping, spur-pruning, root-pruning, &c., in such a practical manner, that he must indeed have been a dillard who could not afterwards go and do likewise. Then, when on the subject of fruit trees, he had examples of the various sorts with him, such as standard, pyramid, espalier, cordon, &c., and showed the class the points to be observed in choosing a healthy tree, told them the most valuable sorts to grow, and how to plant, train, and treat them when obtained. The same plan was followed with regard to budding and grafting, a quantity of scions, stocks, &c., were brought, and the students not only saw the lecturer so deftly perform the operations himself, but they tried their 'prentice hands themselves, and after a few trials under supervision, accomplished them with a fair amount of dexterity.

"In preparing seed-beds, soil and seed were brought; in propagation by the various methods, e.g., by cuttings and layerings, &c., examples of each were taken off the parent plant before the students' eyes, and, in short, the same plan was followed, whether it was in allotment gardening, the subduing of pests, or any other subject taken during the course; everything that was of service in explanation was brought forward, and practice combined with theory in such a manner that everyone must learn.

"Now, is it to be considered that the money spent upon such classes as the foregoing, and reaching 131 students, is entirely wasted? Surely not. And when it is remembered that, by the East Suffolk Scheme every hole and corner of the county can be touched, and every one instructed that has a desire to be, I think that the money is as usefully spent as in making large grants to central institutions, which can at the most be attended by only a very small percentage of the population."

This being the sort of information that is given, let us see who were the instructors, and from what class of men they were taken. It is necessary to do this, as one of the objections raised was that there would be a dearth of competent teachers. This seemed likely enough, and no doubt some few would-be teachers found out that they were not fitted for their duties, or that they had taken a wrong view of the requirements of their auditory.

It will suffice to mention the names only of those who kindly communicated with us on the subject:—Messrs. A. Dean, R. Dean, Dutton, Fraser, D. T. Fish, Jordan, J. Knight, Luckhurst, Macmillan, Milsom, Molyneux, Palmer, Udale, Woodcock, and J. Wright.

We are sure that, taking one with another, no better set of instructors could have been found, and the mention of their names is sufficient to show that the apprehensions of those who feared the teachers would be incompetent, and would take erroneous views as to their duties, were happily not realised.

"What was the result of all this?" it may be asked. Of course, it is too soon to judge of the practical benefit that has or will ensue, but we have at least some means of forming an opinion on the subject—one by ascertaining the numbers that attended, and by noting the reception the lecturer met with; the other, by testing the result of the examinations.

The number that attended of course varied, according to locality, state of the weather, and other considerations, not forgetting the influenza, which was very prevalent at the time when the lectures were in progress. But, speaking generally, the attendance was very good, men coming often for several miles to be present. We have no record of a smaller attendance than 12 on any one occasion in any county; the next lowest is 20, the highest 120, and the general average throughout the country, 40 to 50. Of course,

these are rough enumerations, but they are precise enough to show that considerable interest was felt in the matter by the auditory. Often the lectures were invested with a little ceremonial—the County Councillor of the district, the rector, the squire, or other local magnate occupied the chair, regulated the subsequent discussion, and tendered a vote of thanks to the lecturer. Some of the lecturers wrote to us at the time in warm terms of the kindness and encouragement they received at the hands of the country gentlemen and others with whom they came into contact.

We have not much information as to the results of examinations. In East Suffolk, the prize was awarded at Hoxne to GEORGE ISMAY; and various other prizes and certificates were awarded at Metfield in the same county, where Mr. PLEASANT held a course of lectures. JAMES KERRISON obtained the first prize, and many others secured honours. At this examination (we are quoting from a local paper), one of the examiners, Mr. BRYANT, of Laxfield, spoke in high terms of the practical work done by the students, emphasising particularly budding and cleft grafting. One examination we are in a position to speak of from personal knowledge—the one conducted under the auspices of the Royal Horticultural Society for the Surrey County Council. This has already been alluded to in our columns. Its result was to show conclusively that instruction of an excellent character, well suited for its purpose, had been conveyed by the lecturers to a class of persons as a rule not reached by the gardening press, nor by any other means known to us.

Considering the novelty of the scheme, and the various obstacles in the way of carrying it out, we can but congratulate all concerned. They have not allowed themselves to be discouraged, but they have gone to work so earnestly and ably that they have laid an excellent foundation on which they and their successors will erect a superstructure that will be of the greatest service in the diffusion of useful horticultural knowledge in increasing the welfare of the community, and indirectly in raising the status of gardening and gardeners.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the above Society will be held in the Drill Hall, James Street, Victoria Street, S.W., on Tuesday, July 26. In addition to the ordinary exhibits, the National Carnation and Picotee Society will hold its annual show, in which the special prizes offered by Mr. MARTIN SMITH will be competed for. At 3 P.M., Mr. A. J. MANDA, of the United States Nurseries, Hextable, Swanley, will give a lecture on "Insect-eating Plants," in connection with which many exhibits are expected.

A HYBRID LILY, "FRANCIS FELL."—Mr. WARE, of Tottenham, sends us for examination a flower of a Lily raised by him by crossing *L. pardalinum* and *L. Parryi*, together with flowers of the parents for comparison. Great interest attaches to hybrid Lilies, as they are rare in Nature, and not yet common in gardens. In this particular instance also, the cross is interesting, as the two parents have marked characteristics, and although *L. pardalinum* presents numerous variations, yet none of them, so far as we know, is at all likely to be confounded with *L. Parryi*. Lily "Francis Fell, hort. Ware," has linear-lanceolate very acute leaves, like those of *L. Parryi*, the lower ones in whorls of nine, each leaf measuring about $3\frac{1}{2}$ by $\frac{1}{2}$ inch. The upper leaves are smaller, scattered, continued up the stem to the base of the inflorescence. Peduncles somewhat umbellate, longest about 4 inches long, erect, four or five times longer than the lanceolate bract.

Flowers horizontal or ascending, about 3 inches long, orange-coloured, flask-shaped at the base, contracted about the middle, bell-shaped in the upper third segments, linear lanceolate, orange-coloured, and with a prominent midrib externally, internally of a brighter orange, with numerous small brownish spots. Filaments very slender, anthers protruding, deep brown, with very larger pollen grains. Ovary very slender. In *L. Parryi* the perianth segments are about one-fifth longer, pale yellow, with only a few spots at the base, and the small veins are, in the specimen before us, remarkably sinuous, much more so than in *pardalinum*, or in the hybrid. Whether this is merely accidental or no we cannot tell. It is to be noted that the peduncles of *L. Parryi* of Mr. WARE's plant are very much longer than they are represented in the plate in Mr. ELWES' *Monograph*, but that was taken, he tells us, from a dried specimen. The specimen of *pardalinum* sent us by Mr. WARE, appears to us to be the variety *angustifolium*.

UNDER THE BLOSSOM.—Mr. F. W. BURRIDGE contributes to the current number of *Good Words* a paper entitled "Under the Blossom," which treats in popular language of the fertilisation of flowers, and the relations between plants and insects. There are several sketches of members of the natural order Rosaceæ, which should beguile the unscientific reader into improving his mind by reading the article which they illustrate.

NATIONAL CARNATION AND PICOTEE SOCIETY.—The sixteenth annual exhibition of the southern section of the above Society will be held in the Drill Hall of the London Scottish Volunteers, James Street, Westminster, on Tuesday, July 26. Seventy-four prizes are offered in sixteen classes. Special prizes are also offered for border Carnations by MARTIN R. SMITH, Esq. The exhibition will be open to visitors at 1 P.M. A luncheon is provided at the Hotel Windsor, adjoining the Hall, at 1.30 P.M., for members and their friends. Tickets are 2s. 6d. each. The *Carnation Manual*, which has been in preparation for some time, is nearly ready, and will be published by CASSELL & Co., Limited, about the first week in August.

BOTANICAL NOMENCLATURE.—We have received from Berlin the following propositions for an amendment of the "Lois de Nomenclature Botanique":—"Since the time of LINNÆUS, botanists have continually endeavoured to gain a uniform nomenclature, and these endeavours have been completely justified on account of an easier mutual understanding. We know very well that certain differences will always remain, because the decision on some questions only depends on the author's subjective opinion. But we hope that a gradual and continual reformation will result in an essential improvement. O. KUNTZE's *Revisio Generum* has raised an evident perturbation, and will cause a complete confusion; we have therefore thought it necessary to propose the following four resolutions, which refer only to genera:—

"1. The starting-point of the priority of genera as well as species is the year 1752, resp. 1753.

"2. Nomina nudæ and seminudæ are to be rejected. Pictures (illustrations) alone without diagnoses do not claim any priority for a genus.

"3. Similar names are to be conserved, if they differ by ever so little in the last syllable; if they only differ in the mode of spelling, the newer one must fall.

"4. The names of the following larger or universally known genera [appended, but not here reprinted] are to be conserved, though after the strictest rules of priority they must be rejected; in many of them the change of the names now used is by no means sufficiently proved.

"The Committee: P. ARCHERSON, A. ENGLER, K. SCHUMANN, I. URBAN."

We do not suppose that there will be any great difference of opinion as to the last three proposals; but as to the first, it must be remembered that the authors of the *Genera Plantarum* (BENTHAM and HOOKER), adopt as their starting-point for genera, LINNÆUS' *Genera Plantarum*, published in 1737. If we mistake not, in the vast Kew Index now in preparation, the same date is adopted. Now, as these two works are

already practically completed, and are likely to be the standard for working botanists for many years to come, it is preferable to follow the same plan rather than set up another. The whole matter is one of convenience, not of science, nor of ethics. Neither convenience, however, nor science, will be promoted by variation of usage in the great botanical centres.

"**ICONOGRAPHIA FLORÆ JAPONICÆ.**"—This work, otherwise entitled *Descriptions with Figures of Plants indigenous to Japan*, is edited by Dr. RYOKICHI YATABE, and published in Tokyo by Z. P. MARUYA & Co. It contains excellent lithographic illustrations with botanical details, while the text is rendered both in English and Japanese. It will be indispensable to all botanists interested in the Japanese flora, and as so many garden plants are derived from Japan, it should be included in all good garden libraries.

POTATO DISEASE.—The report published by the Board of Agriculture on recent experiments in checking Potato disease (EYRE & SPOTTISWOODE) is a useful summary of what has been done by the Royal Agricultural Society, and by private individuals, to test the value of the copper treatment of mildewed Potatoes. Another year's trial at least, it is evident, must be made in different parts of the country, and greater care taken to secure a solution of the right strength, and that it shall be applied at the right season. The Jensen system is here and there alluded to, but no mention is made of the remarkable experiments carried out at Chiswick. "The proper method of making the Bordeaux Mixture is to hang the sulphate of copper in a coarse bag in cold water in a tub or other vessel [wooden or earthenware, not metal], and allow it to melt gradually. The quick-lime is put into another vessel, and slaked by degrees. The milky liquid should then be poured through a sieve into the sulphate of copper solution, and the whole well stirred." The sulphate of copper must be pure, the lime also should be of good quality; and the resultant fluid beautifully blue. A 2-per-cent. solution—that is, 20 lb. of copper sulphate, and 10 lb. of lime, to 100 gallons of water—is about the right proportion, but the appropriate strength varies with the variety of Potato, the character of the season, &c.

ZURICH.—Dr. HANS SCHINZ has been appointed Professor of Systematic Botany in the University of Zurich. Dr. SCHINZ has travelled in South Africa, and is well known for his researches into the botany of that country.

BRAUNSBURG.—Dr. NICDENZU, of the Berlin Herbarium, has recently been appointed Professor at Braunsberg.

POISON IN TINNED PEAS.—Attention has recently been called to the way in which the poor people are poisoned by the bright green Peas and pickles which adorn some of the grocer's shops in our large towns. From some proceedings which took place at Liverpool a few days since, it would appear that the preserved Peas which the poor consume with so much relish are injurious, owing to the sulphate of copper that is present in them. A Liverpool grocer was fined for selling a one-pound tin of Peas, which contained as much as two and a-half grains of this poison. The medical evidence was both startling and interesting. One doctor testified that not only had this dangerous chemical coloured the skin of the Peas, but it had penetrated the Pea itself. Peas treated with sulphur became green in half-an-hour. The borough analyst said that the evil arose from the astringent effect produced by the sulphate, which resembled that caused by alum when present in bread. It is suggested that the municipal authorities should grapple with more vigour the matters of this kind as they appear to possess the power so to do. It is an old practice, which the parochial analysts might do much to prevent.

THE PICOTEE AND THE CARNATION will soon, in Southern England, have about reached their greatest perfection for the present year, a fact which was

quite evident on the occasion of a recent visit to the very nice collection of these favourites to be found at Messrs. VERRICH & SON'S Nursery, Chelsea. Picotees, both red and purple edges, do very well as treated there, and they seemed to have withstood wind and heavy rain even better than their reputed hardier relations, the Carnations. Of the former, Dr. Epps, one of the best of the heavy red-edged varieties; Liddington Favourite, the finest wire-edged variety of the same section; J. B. Bryant, red heavy-edged variety, were in excellent form and preservation. The popular varieties Mrs. Sharp and Mrs. D'Ombrian were likewise very nice, and furnished the best reasons for their popularity. Mrs. May is a Picotee with a rosy-purple edge. It is very dwarf—a matter of some moment with certain growers. Of the same class is Clara Penson, one equally in request with those; and also Mary, a pretty thing. Flaked Carnations come more and more to the fore, the Bizarres retiring in a proportionate degree; but the popular fancy just now leans most towards those varieties which the florist names fancies; that is those flowers that do not range themselves under what may be called the primaries, which are crimson, yellow, scarlet, rose, and white; hence fawns, salmon-reds, slaty crimsons, and a few other not easily-described tints have to be kept in stock in considerable numbers. However, good distinct colours in self find numerous admirers, such varieties are the Imperial Purple, Cara Roma (Turner), of good form and slightly fragrant; Queen of Bedders (Turner) a bright free-flowering variety, useful for cutting, and the habit is good; Ruby is like the last-named, but it is a smaller bloom; the habit is good, and the plant does well—at Chelsea; Germania, for which a great demand exists, does splendidly there, both indoors and out; Mr. Gifford's seedlings, viz., Mrs. Gifford, after the style of Gloire de Nancy; Amy Herbert, cerise pink, not very full, a robust grower; Leander resembling Germania, but standing rain better than that variety; and Montague, a flower of a bright shade of scarlet, but not possessing such substance in the petals as some of the older varieties of the same shade of colour. Crimson Pet is a beautiful deep crimson Carnation, not large, but of good quality. Border Maid is a perpetual blush-coloured self, running out to white at the edge of the flower, dwarf in habit, and growing well. Winter Cheer every one knows. It is a very bright scarlet, very dwarf, even when grown under glass, where it seldom reaches 2 feet in height; out-of-doors it will flower up to September. Frank Watts is rather taller than the last-named, and is a white, full flower. Among white-flowered varieties we noted Mrs. Donaldson, W. P. Milner, and The Bride. One of the best red Carnations is Magnum Bonum; it will succeed out-of-doors, is dwarf and floriferous, and the grass is abundant. Others noted were Joe Willett, a bright scarlet; Beauty of Foxhall, a variety that was fast disappearing, but which is now being taken in hand, and increased; it has the nicest of purple shades; W. Toby, a very dark sport from Lord Beaconsfield; Brilliant, an old variety, this year dwarfer than usual; Dr. Park, a good grower, rose-pink in hue, very free and fragrant. These, with Lotbair, Celia, Alice, Agnes, Thalia—a fine flaked Carnation, and Colonial Beauty, comprise the pick of the beds at Chelsea.

PHOTOGRAPHING THE MOVEMENTS OF PLANTS.—By means of an ingenious contrivance described by MM. DERVÈRE and BORDAGE in the *Rev. Gén. de Botanique*, 1892, p. 65, it is now possible to make photographic observations on the movements of the growing parts of plants. These scientists have obtained some especially interesting results in examining climbing plants, e.g., *Humulus Lupulus*, *Ipomœa purpurea*, *Convolvulus sepium*. They find that the nutation of the young stem consists of a succession of irregular circular or elliptical curves which vary every moment, even in their direction, and which are caused by unequal growth in different parts of the stem. Distinct Heliotropism was discovered in the case of *Ipomœa purpurea*.

Observations were made of a similar character in the case of roots grown in water and "aërial" roots, the latter being illustrated by the Orchideæ, Aroideæ and Bignoniaceæ. The sleep-movements of leaves may be examined in the same way. These movements appear to be by no means uninterrupted movements, but to consist of alternate upward and downward movements, the oscillation becoming less in amplitude, and of greater frequency as they progress.

SPECIES OF THE ROSE.—The following species of Roses were shown by the Director of Kew Gardens at the Drill Hall, Westminster, on July 12, 1892. The exhibit was of the most interesting and instructive character. It is to be regretted that someone conversant with the subject was not told off to speak on the subject:—

<i>Rosa agrestis</i> (sepium)	<i>Rosa lucida</i>
" <i>alpina</i> var. <i>inermis</i>	" <i>fl. plena</i>
" <i>anemoneflora</i>	" <i>macrophylla</i>
" <i>arvensis</i> var. <i>capreolata</i>	" <i>microcarpa</i>
" <i>fl. plena</i>	" <i>microphylla</i> , fruits of
" <i>Beggeriana</i>	" <i>moschata</i> (R. Brunonii)
" <i>belgradensis</i>	" <i>mundi</i>
" <i>blanda</i>	" <i>nitida</i> var.
" <i>canina</i>	" <i>nivea</i>
" <i>californica</i>	" <i>Noisettiana</i>
" <i>carolina</i>	" <i>Nutkana</i>
" <i>centifolia</i> and vars.	" <i>pisiformis</i>
" <i>cinnamomea</i>	" <i>Pissardi</i>
" <i>damascena</i>	" <i>provincialis</i>
" <i>gallica</i> and vars.	" <i>rugosa</i>
" <i>var. byzantina</i>	" <i>var. alba</i>
" <i>hibernica</i>	" <i>fl. plena</i>
" <i>indica</i>	" <i>sempervirens</i>
" <i>var. cannabifolia</i>	" <i>tomentosa</i>
" <i>mon-trosa</i> (Rose vert)	" <i>var. nivea</i>
	" <i>versicolor</i>

All of these were in flower except *R. microphylla*, which was sent to show its curious fruits.

COPPER DRESSING IN THE TREATMENT OF FUNGID DISEASES OF PLANTS.—Perhaps the greatest difficulty in the successful treatment of such diseases as the "Potato-blight" and mildew of Vines, is the action of heavy rains, which dissolve and wash away the dressings before they have had time to take effect. It is under these circumstances well to know what remedies are the most resistant and what the most ineffectual. The most easily displaced amongst the various preparations which have been used in combating the Potato disease is, according to Mons. ARMÉ GIRARD (vide *Bulletin de la Société d'Encouragement pour l'Industrie Nationale*), the well-known "Bordeaux broth," i.e., that composition which is composed of the following ingredients:—

Copper sulphate...	2 kilos.
Slacked lime (weighed as quicklime)...	2 kilos.
Water ...	100 litres

The most resistant solutions that have hitherto been employed are the so-called "Burgundian broth," "Perret's solution," and the Montpellier mixture; these are composed of the following ingredients:—

<i>Burgundian Broth.</i>	
Copper sulphate...	2 kilos.
Soda crystals ...	3 kilos.
Water ...	100 litres

<i>Perret's Solution.</i>	
Coppersulphate...	2 kilos.
Lime ...	2 kilos.
Troncle ...	2 kilos.
Water ...	100 litres

<i>Montpellier Mixture.</i>	
Verdigris ...	1 kilo. 6 grammes.
Water ...	100 litres.

Our readers should make a note of these last three solutions.

SOME NEW OBSERVATIONS ON MUSCINEÆ.—If mosses are cultivated in the air or in water, and the conditions of illumination and of the position of the stem are varied, the stems are seen to be endowed with very fully negative geotropic, and with strong positive heliotropic properties. The heliotropism is always preponderant, and the stems always direct their growth towards the source of light, whatever its direction. In a moist air the leaves of certain mosses take two positions on the stem; one when the air is nearly saturated with moisture, the other when the air is comparatively dry; the latter is the closed position, or that of sleep. The movements of one of their positions to the other depend on the contraction or turgor of its chlorophyll tissues. In both states of the leaf

mosses disengage carbon dioxide in the dark, but the process is less active in the sleep condition; and this is also true of the process of assimilation. The relation of the volume of carbon dioxide disengaged to that of oxygen absorbed is constant and normal. It is in the spring and autumn when mosses are moistest that their vital functions are most active, and that the sexual organs are formed. [*Rev. Gén. de Bot.* (Bonnier) iii., pp. 255, &c.]

FLOWER FORMATION.—Professor SACHS' theory that the substances which go to the formation of the flower are already formed in the green leaves, receives support from a fresh series of experiments recently carried out by him in the case of buds formed on the leaves of the Begonia. From these experiments he concludes that the materials which take part in the formation of the flowers are present in the leaves in the summer, but not in the early spring. For further details, and for other interesting information upon the period of the formation of the flower, consult the *Rev. Gén. de Botanique*, p. 18, 1892.

ENTOMOLOGY.—The reports of the Division of Entomology of the U.S. Department of Agriculture for 1891 contains some valuable information relating to scale insects of various kinds. The fluted scale, *Icerya Purchasi*, has been kept in check in California by "lady-birds" (*Vedalia cardinalis*), imported from California for the purpose, so that the friendly character of these little beetles is now well established.

LEWIS A. LEE.—Few appreciate the value of a magazine. Let us illustrate by the old *Gardener's Monthly*. In September, 1869, it announced the discovery by a Chicago gardener, LEWIS LEE, that Paris Green was a sure protection against the ravages of the Colorado Potato beetle. It is safe to say that millions of dollars have been saved to our country by this discovery. Had Mr. LEE been a Frenchman, his government would have adorned him with crosses, and he would have been placed on a par with Parmentier, who made the first Potatoes popular. Chicago should look him up, and do him some honour yet if living. He ought to be one of the lions of the exhibition, says *Meehan's Monthly*, Philadelphia.

NEBRASKA.—The annual report of the State Horticultural Society for the year 1891 contains in addition to matters of purely local interest, articles which are of value to cultivators in all parts of the world, as, for instance, the Entomologists' Report by Professor BRUNER, and the botanical articles of Professor BESSEY. Of the special rules for nomenclature and judging we have already spoken. If in some districts there is a fear that noble and priceless forests will be destroyed by reckless felling and other causes, it is satisfactory to find that, in the prairies a great deal of planting is being done. In one part of Nebraska, as late as 1872, a region of treeless plains, there are nearly 5000 acres of cultivated timber, and more is being planted each year. Mr. A. J. BROWN, speaking of the results obtained, says, "Plant freely of the better sorts; give good care and thorough cultivation for a few years, and great will be your reward."

DOES GIRDLING NECESSARILY KILL A TREE IN A SHORT TIME?—According to American exchanges, this question must be answered in the negative. Professor MEEHAN, in his *Monthly*, figures and describes a case of the white Pine, in which the upper part of the branch above the denuded portion has grown for at least six years, whilst the lower part has not increased in size. This looks as if the leaves and young bark absorbed moisture from the atmosphere sufficient to enable the shoot to dispense for a time with root-supplies. We are assuming that the girdling has been so efficiently done as to cut off all communication with the root.

DEVIZES BENEVOLENT SOCIETY.—The annual exhibition of Chrysanthemums, Primulas, Cyclamens, &c., which is held in connection with a bazaar in support of the above Society, will take place in the Corn Exchange, Devizes, on Tuesday,

November 8. Probably at no other exhibition held in the West of England can better trained specimen plants be seen than that at Devizes; while the table of baskets of hardy autumn foliage is a delightful exhibition in itself.

BEDDINGTON, CARSHALTON, AND WALLINGTON HORTICULTURAL SOCIETY.—A Conference, under the auspices of the Surrey County Council, will be held on Monday, August 1, at 4 o'clock, when short lectures will be given by the judges (Mr. JOHN WRIGHT and Mr. GEORGE GORDON) on cottage gardens and allotments, with special reference to those inspected, in which strong and weak points in culture will be pointed out, and suggestions made for future action. The County Council has also appointed Mr. ALEXANDER DEAN and Mr. EDWARD LUCKHURST for short lectures, and will provide any diagrams or models that may be necessary. The committee of the Society have made arrangements to have a flower stall for the sale of cut flowers, fruit, &c., in connection with the show, the proceeds to be devoted to the Gardeners' Orphan Fund.

ROSE AND HORTICULTURAL SHOWS.—Moseley (Birmingham) Rose Show was held on Tuesday and Wednesday last, the 19th and 20th inst., in what is known as the Moseley Botanical Gardens and College Grounds, which is an important addition to the places of public resort in Birmingham. The show was a very good one, and in the class for seventy-two distinct, single trusses, there was a keen fight between Mr. F. CANT and Mr. B. R. CANT, both of Colchester; by a few points, Mr. F. CANT was eventually awarded 1st position. The Portsmouth Horticultural was held in the Victoria Park on the 13th, 14th, and 15th, and was a thorough success. Horleston Horticultural was held on July 14; and on the 19th inst., the annual show took place at Bray, "the Brighton of Ireland." We have received reports of all these exhibitions, but regret from want of space, we are able only to refer to them in the briefest manner possible.

BALSAMS AT CHISWICK.—A very excellent batch of Balsams are now in bloom in the Paxton-house of the Royal Horticultural Society at Chiswick. They are in 24's, and are producing a wonderful amount of large and extra-double flowers.

BRIGHTON AND SUSSEX NEW HORTICULTURAL AND MUTUAL IMPROVEMENT SOCIETY.—At a meeting of the above society a letter from the committee of the Chrysanthemum Society was read, to the effect that that society was in favour of the amalgamation of the two societies at the end of the financial year, and it was resolved that the first joint committee should be held on the 21st inst. to discuss details. Fifteen new members were elected, and the general proceedings and the various interesting exhibits show that the horticulturists of Brighton are sensible of the advantages to be gained by mutual improvement.

HOME CORRESPONDENCE.

JAMES VEITCH STRAWBERRY UNDER FRUIT TREES.—Accident has revealed the fact that James Veitch Strawberry is capable of producing heavy crops of rich fruit on ground underneath fruit trees, in the following manner:—About five years since, some Strawberry plants which had been forced were planted in a row at the south end of a small piece of land on which had been planted two or three years previously some pyramid fruit trees on dwarfing stocks for permanent fruiting. Among several other varieties in the row were two or three plants of James Veitch. All the sorts did fairly well, but after two or three years it was found that the James Veitch were overrunning and driving out the others. Very little time could be spared to keep the land under the pyramid fruit trees clean, and consequently runners from the Strawberry row roamed at will all over it. The plants now under the trees are all found to be of the James Veitch variety, and many of their leaf-stalks measure 15 inches long. Fruit of excellent quality is now (July 11) ripening fast, even in places

where direct sunshine can hardly at all if ever find its way; the berries are not highly coloured, and are somewhat too soft for market purposes; but the latter characteristic is one which appertains to this variety even when grown in more open positions. The flavour is most excellent. The land, which these Strawberries cover close up to the fruit-tree stems, has been exceptionally well done in the matter of manure; but I doubt if there is any other sort which would ripen fruit of good quality in dense shade under the drip of fruit trees, no matter what manure had been applied. This land was deeply dug between the trees for the first few years after the latter were planted, care being taken not to go close enough to damage the roots, and crops of vegetables were taken off it. Heavy dressings of earth-closet manure were applied each winter during this time. Every winter since the trees were planted, one or more soakings of sewage have been given, and during the winter just past, in addition, a very heavy coat of cow-yard dung was applied and spread over the surface and left, without notice or care being taken of the Strawberries; the prunings of the trees have been left on the ground to rot with the leaves for several years. The Pears are splendidly handsome and healthy-looking trees, and flower profusely every year, but for some reason or other are not satisfactory; only once in eight years have they borne a really heavy crop, and then the fruit did not keep well. Plums occasionally bear tremendously, and at other times, as this year, the crop gets destroyed by spring frosts happening when the trees are in flower. Apples, however, are thoroughly at home, and there is always a crop; this year it is exceptionally heavy, and the fruit is well scattered over every part of the trees, showing how advisable it is to admit sun and air to every part of an Apple tree. These trees have had their branches well thinned out, so that they cannot unduly shade one another, the consequence is that fruit buds form all over the tree, instead of only outside at the extremity of the branches where it is so liable to be blown off when heavy winds prevail. Apples were gathered for cooking purposes off some of these trees on June 29. Lord Suffield, Lord Grosvenor, Potts' Seedling, Ecklinville Seedling, and others have already good sized fruit on them. *J. E. Ewing, Havant.*

BERBERIS DARWINII AS A HEDGE PLANT.—It may not be generally known that this Barberry makes a capital hedge plant. We have some hedges of it here (Swanmore Park, Hants), on each side of a grass path 70 yards long, which were planted fourteen years ago, and they are very pretty when the plants are covered with their bright orange-coloured flowers, which are followed with berries of the same colour as Sloes. Thinking it might not prove thoroughly hardy, we at planting time put in one common Holly to every two of the Berberis, thinking the former would act as a protection to the latter in severe winters, and right well has the plan answered, as, until the last two years, none of the plants suffered in the least; but two have died since, while a branch or so of another shed its leaves during last winter; but as *B. Darwinii* is a quick grower, often sending up strong growths from the base, any gaps that may occur will soon be made good again. The hedge is now 5 feet 6 inches high, and about 15 inches broad, with perpendicular sides and flat at the top. It is a hedge that is easily kept, being amenable to clipping, which is done two or three times in a season, if excessive neatness is a point of study. The point to bear in mind is not to cut off the flower shoots and spikes until the flowering season—the middle of the month of April to the same period in the following month. It flowers again, sometimes, in the autumn. It will be understood that not quite so much flower can be seen on a hedge of it when clipped, as would be the case with plants unpruned; but as an evergreen hedge plant, it is alike suitable and uncommon. *E. M.*

PEACHES, WATERLOO AND ALEXANDER.—Both these were ripe on the open walls on the 16th of July. They are this season very fine, and if gathered a little under ripe and kept in an airy place a few days, the flavour is very fair. The trees should never be over-cropped, one large fruit being better than two small ones. *H. Markham.*

MARKETING FLOWERS.—In reply to the letter of "Rector" in your last week's paper in reference to the sale of cut flowers in Birmingham, we should like to say that much of his disappointment is the result of want of experience; for instance, what man of knowledge of the flower trade would send to market such flowers as white Snapdragon, red Snap-

dragon, white Rockets, rock Roses, Escallonias, Ribbon grass, single Pelargoniums, Sweet William, Honeysuckle, Day Lilies, Canterbury Bells, and Pansies, unless they were in bloom in February or March, as they would not pay their carriage fare to any market in England. Only imagine the state of Cistus and single-flowered Pelargoniums after a short journey. We can only add that if the Roses had been sent well packed to any respectable and established flower salesman at the times appointed for their sales, "Rector" would certainly have obtained fair value for his flowers, which at all times is variable, and greatly subject to the influx of large quantities from France, the Scilly Islands, and the overflow of the London market, which sometimes nearly deluges our market. However, there are growers, and they on the increase, who continue to send, and are content with the fluctuations of the auction sales. *Pope & Sons, floral auctioneers, &c., Birmingham.*

CHERRY, FROGMORE BIGARREAU.—This is a very useful early dessert Cherry, and is fit for use soon after that valuable Rivers' Early. The fruits are of pale amber, with a bright flush of red on the upper side, the flesh is sweet when gathered at the right time, but if left on the trees too long they become somewhat watery. It is notwithstanding a most valuable early fruit, and well deserves a place in every collection. It is a heavy cropper, and the individual fruits are large and handsome. Black Tartarian ripens its large black and delicious fruits in close succession to the first named, and is altogether a truly fine sort, while Kentish Bigarreau and Napoleon Bigarreau are both excellent, the latter hanging a long time in good condition. Both are sure and lasting croppers; the fruits are large and especially fine on walls. Napoleon being a darker red and firmer flesh. *H. Markham.*

PLANTS FOR WINTER AND SPRING FLOWERING.

DURING the summer season, while flowers abound in such profusion, many, except the oldest and most experienced gardeners, are apt to leave this important question until too late in the season for proper justice to be done to it. It is of little use to propagate a good supply of plants for winter flowering, unless they receive the requisite attention throughout the whole summer and autumn. I have known more than one instance where a person has been stimulated into making grand preparations for a showy and useful display in his conservatory during the ensuing winter, simply because he saw one or two subjects well done in a neighbour's garden. The sight of good examples of any suitable winter-flowering plants naturally induces all lovers of flowers to attempt a similar supply, but too often, as the busy time of late spring and early summer comes round, such subjects have been somewhat neglected, with the inevitable result that the show of winter flowers is little if any improvement upon previous years. No neglect during summer and autumn should be allowed to affect any plants intended to produce flowers during the dull days of winter, and when they must perforce be under artificial treatment. Indeed, I may say that the chief secret of a good winter supply is careful attention at the present time.

Much of the propagation should have been done before this, but there are still several very useful subjects that may be prepared between the present time and the early part of November, when winter-blooming plants may be said to commence the most useful part of their existence.

Small pots are by far the best in which to grow the majority of flowering subjects, and this more particularly applies to those intended for winter cultivation, as in that case small and well-matured plants result, and the closer confinement of their roots is conducive to a better supply of bloom. Small pot-bound plants may also be more beneficially assisted by applications of weak manure-water. This cannot be given with the same good results if the soil is not thoroughly permeated with roots; liquid-manure being deleterious instead of beneficial under such conditions, as it is apt to make the soil stagnant and sour.

Poinsettias are far better if grown under much

cooler treatment than they generally receive, and at the present time will do very well without the aid of artificial heat. They grow more slowly, retaining their foliage much better when removed to warmer houses in the late autumn. This should always be done before the colder nights have affected them in any way; at the same time, care should be taken not to introduce these, and *Euphorbia Jacquinædora*, into too strong a heat. An advance of 10° from their autumn quarters in some deep pit or frame will be ample; too often these are placed into a stove temperature at once, and the result is not nearly so satisfactory as if a cooler treatment had been afforded them until the bracts and flowers were showing more prominently.

Then there are the zonal *Pelargoniums*, *Abutilons*, *Echeverias*, winter-flowering *Begonias*, *Azaleas*, *Ericas*, *Clerodendrons*, and numerous other subjects, all of which require special attention at the present time if good and free-flowering specimens are to be had during the winter. To give even a brief outline of the treatment suitable to the various winter-flowering subjects, would take up far more space than the limits of my paper can afford, and I trust that these few remarks may serve their purpose in reminding my readers of the great importance of a careful summer and autumn cultivation.

Abutilons, zonal *Pelargoniums*, *Oleanders*, and many others, will respond very quickly to a rise of a few degrees in the temperature at any time a more abundant supply of flowers may be wanted; indeed, I think that the two first-named are still among the most useful of all winter-flowering plants, and the great diversity of their forms and colours, together with their freedom from diseases and insect pests, renders them particularly suitable for amateur cultivators. Both of these are ever-blooming; but if kept from flowering during the present time, and frequently headed to secure numerous points of growth, they are certain to repay you for such slight attention. A. P.

THE CEDARS, HARROW WEALD.

THE gardens of T. F. Blackwell, Esq., under the management of Mr. J. Dinsmore, gives a noteworthy example of what is commonly called all-round gardening, and one in which the interests of any department is not allowed to encroach unduly on the others. Since the erection of fine ranges of vineries and plant-houses over two years ago by Mr. James Gray, of Danvers Street, Chelsea, S.W., and which have proved eminently successful, Mr. Dinsmore has had more scope to display his abilities as a plantsman and fruit-grower, and well has he availed himself of the better accommodation provided.

In the stove-houses in which *Orchids* are grown, mingled with foliage and flowering plants, there is a show of *Cattleya Gaskelliana*; some good varieties of *Miltonia Roezlii*, an elegant specimen of the old *Brassia verrucosa*, with ten spikes; some good *Epidendrum vitellinum majus*, with *Acineta Barkerii*, *Dendrobium Pierardi*, and other species suspended overhead; while the showy flowers of *Allamandas* and *Dipladenias* on the roof, and the bright foliage of *Dracænas* and *Crotons*, mingled with *Palms* and flowering plants of *Gardenias*, *Anthuriums*, *Tabernaemontana coronaria flore-pleno*, &c., form a suitable setting to the showier flowers of the *Orchids*.

In the new range of plant-houses, plants for conservatory, indoor and table decoration, are chiefly grown, and among them the *Begonias* and *Gloxinias* are especially well grown.

In these houses, too, a manner of growing *Dracænas*, *Crotons*, and other plants useful for decoration, and which require a good light, should be noted, as by these means the desired object is accomplished, and space made use of which would otherwise be void. These coloured-leaved table plants it is Mr. Dinsmore's practice, when they receive the shift into 48's, to suspend by wires in rows along the roof over the sides of the walk, and so placed and carefully looked after with respect to water, they form neat dwarf plants in which their respective

colours are highly developed, and which are said to withstand a sojourn in the dwelling-house or conservatory far better than those grown on the stages, and consequently at a much greater distance from the glass.

The conservatory, the stonework of which matches the style of the mansion, has a fine show of flowering plants, arranged with *Palms* and *Tree Ferns*. In front of the door stands a specimen of *Erica Cavendishii*, and on the side-stages are good examples of *E. Aitonii* and many other *Heaths*, with here and there a specimen *Clerodendron Balfourii*, some good *Anthuriums*, and well-grown *Achimenes*, &c. Outside the conservatory is the summer bedding-plant arrangement, brilliant and effective. In this the different colours of *Pelargoniums* play a leading part, and several beds of silver variegated *Pelargonium*, mixed with purple *Viola*, are telling features. Running past the Rosery is the long border of mixed herbaceous plants, biennials, and annuals, and the whole length of it is crowded with gay and fragrant flowers, such as *Delphiniums*, *Stocks*, *Pyrethrums*, *Mignonette*, &c. But the display of hardy flowers is not confined to this part of the garden, for, on the other side, is a cleverly-planned garden, in which all the showy hardy flowers, and especially those denominated "old-fashioned," are planted, with backings of effective shrubs. Among these the *Cypress* and *Juniper*, and the golden *Elder* and silver variegated *Maple* are very effective, and throughout the whole of the borders and beds which flank the tortuous walks, the rich colours of the fragrant *Roses*, the tall spikes of *Delphiniums* and *Hollyhocks*, the neat clumps of *Phloxes* and showy *Pæonies*, the *Antirrhinums*, *Pentstemons*, *Pinks*, *Sweet Williams*, *Campanulas*, the scented sprays of the *Honeysuckle*, the tall spikes of the *Foxgloves*, and innumerable other beautiful and favourite flowers appear in rich profusion.

The new range of vineries, not yet three years planted, have heavy crops of fine bunches. The progress of these Vines since they were first planted has been great, proving alike the good treatment and proper planting of the gardener, and that they liked the houses in which they are grown. The *Peach-houses* also are well-cropped, the *Melons*, *Cucumbers*, &c., in good condition, and the kitchen gardens well furnished, and kept in a neat and tidy manner.

FOREIGN CORRESPONDENCE.

NOTES FROM PROFESSOR SARGENT.

Boston.—The name of Professor C. S. Sargent is so intimately associated with trees and forestry that we seldom think of him as being the owner of one of the finest and most extensive private gardens in the country.

He is great on *Rhododendrons* and *Azaleas*, and every year in June endeavours to have a large display of these as well as of *Indian Azaleas* in bloom together. Then he invites his friends to come and feast their eyes upon his pets.

His *Indian Azaleas* are now (middle of June) in splendid bloom, and arranged under a spacious conservatory-shaped canvas attached to his residence. Having them in bloom so late as this is caused by late growth, setting their flower-buds late, and wintering them in cool pits. On the verandah beside the *Azalea* tent were specimens of *Rhynchospermum* 7 to 8 feet high. "Plant them out in summer," said the professor, "that's the secret of success." *Bambusa aurea*, 12 feet high in tubs was also placed on the verandah, but because it is continually dropping its old leaves or scale bracts of the young growth, and making a mess, it is not regarded with much favour. *Wistarias* grown in tubs and trained as standards are used about the house when they are in bloom, and are liked very much.

Among the best of the outdoor *Rhododendrons* were *Lady Armstrong*, *Everestianum*, *Mrs. Milner*, *Charles Dickens*, *E. S. Rand*, *Lady Grey Egerton*, *Delicatissimum*, and *Alexander Dancer*. Along the

side of a walk at the back of his *Rhododendron* border, beside the pond, is a stone wall supporting a bank of earth, and this wall is completely hidden in a rank growth of poison Ivy. "Why do you have that villainous thing there, Professor?" I asked him. "Well, it's beautiful in the fall, when its leaves begin to turn," he answered. "Yes, it poisons me badly, too," he continued. Well, a man can do what he likes with his own; but my advice to you one and all is, erase every vestige of that vile plant from your property. Its presence is too great a price to pay for a streak of Nature's glow in our garden.

Syringa villosa, a very beautiful and late-blooming *Lilac* from Northern China, was in good bloom, or rather past its best. Professor S. tells me that the longer-known Himalayan plant known in gardens as *S. Emodi* is the same as, or at most a form of, *S. villosa*. Botanically this may be so, but horticulturally they are decidedly distinct, and *villosa* is the better one of the two by far.

Pointing to a handsome specimen of *Syringa japonica*, he remarked, "But that's the beauty." So it is, I admit, and the latest blooming; but where *Rose-bugs* are a plague, as they now are with us, we get no good from *Japonica's* flowers, as the panicles are alive with the vermin. These insects are more partial to the flowers of this section of *Lilacs*, namely, *Amurensis* (which is past) and *Pekinensis* and *Japonica* (both of which are now in bloom) than any other parts of any other plants with us.

The Professor is down upon *Retinosporas*, they are not reliably hardy. Well, they may be sour *Grapes* at Boston, but at Glen Cove, I can assure you we think they are pretty nice evergreens.

And he is severe upon Japanese *Maples*, that is, the polymorphum and *Japonicum* sections, because they die out so. He used to have lots of them, but they have dwindled down to two handsome specimens of crimson-leaved varieties. These *Maples* are, as far north as New York, I know, considerably affected by the Japanese die-back (we call it this because we know of no better name). A branch will die off this year, another next year, and so on unaccountably, and in summer as much as in winter. Dryness at the root particularly induces this evil. With good ground, abundant moisture summer and winter, protection from hot sunshine and bleak winds, one can grow these *Maples* well enough. If they are short-lived, by growing them low-branched, and elbowing the branches into the ground, we can keep on renewing and invigorating them, for they root quite readily from layers.

He has a very fine specimen of *Acer cissifolium*, a species seldom heard of. It makes a dense, broad-headed tree, 10 or 11 feet high, is in perfect health, and apparently perfectly happy with its lot at Brookline, and is seeding freely.

"The only unique tree I have got is that dwarf *Picea pungens* there," he said, pointing to a dense little plant, 2 or 3 feet high. It was one of the young plants raised from that lot of Colorado seed nearly thirty years ago, from which all the "first" fine blue specimens were raised.

He is getting solicitous about the value of the blue *Spruce* (*Picea pungens*) as a permanent garden plant, the indications are that it will lose its lower branches *à la Balsam Fir*. But, well treated, it will not do that under thirty years old, so I do not see the use of worrying much about it.

Syringa Alberti looked fine as a plant, and so it did too at the Arboretum, but when I ventured to suggest that it did not appear as if it had many blooms on it this year, I found I was treading on somebody's corns, for this little shrub is highly prized around Boston. Its rose-lilac flowers are really pretty, and delightfully fragrant; but, say what you will, it does not blossom very full every year. Wm. Falconer, in the "American Florist."

CALOCHORTUS VENUSTUS VESTA.

Haarlem.—Mr. C. G. van Tubergen, jun., Zwanenburg, Haarlem, writes, "I have much pleasure in again sending you a new type of *Calochortus*. Last autumn my collector sent me a number of bulbs of a

variety of *C. venustus*, which are now in bloom here, and as they are entirely distinct from the other forms in cultivation, they will be sent out under a separate name. It is proposed to call this beauty *C. venustus Vesta*. As you will see from the specimens forwarded to you, this new variety has no eye-like spots like the others, but it has a very richly-coloured band in the centre of the flower; it is also much the largest flowered of the whole Mariposa section. Judging from its vigorous growth and very free-blooming qualities, it promises much for the future, and will, I hope, help in more popularising this beautiful tribe of bulbs, which in good light soil can be grown as easily as Tulips, and which recent extensive importations have rendered much cheaper than they formerly were."

[The variety sent has flowers about 3 inches (8 cm.) across. The petals are flushed with pale lilac, externally, destitute, in the upper half, of the numerous small spots which form so conspicuous a feature in some of the varieties. The lower half of the inner surface of the petals is of a pale primrose hue, and marked in the centre with a deep crescentic or somewhat triangular blotch of chestnut-brown, with numerous minute spots and streaks of the same colour at the sides. Near the base is a crescentic corona, consisting of several rows of short brown threads, and beneath these the sharply-tapering stalk of the petal is marked with small purplish-brown blotches. When compared with other varieties, the most striking differences are the larger size of the flower, the absence of spots on the upper part of the outer surface of the petal, and the broad aureole of primrose colour, which instead of being confined to the centre, stretches across the whole of the lower half of the petal, and sets off the chestnut blotch and its attendant streaks. Ed.]

WEST INDIES.

THE UNITED STATES TROPICAL NURSERIES, TRINIDAD.

FOURTEEN miles by railway from the town of Port of Spain, and close to the Dabadie station, are situated the nurseries of the United States Tropical Nursery Company. The establishment forms a branch of the well-known and enterprising firm of Messrs. Siebrecht and Wadley, New York, U.S.A., and is under the management of Mr. H. W. C. Dihm.

Early in the present year, I had the pleasure of visiting this gentleman, and found him living in a complete paradise of Palms, *Dracænas*, *Ravenalas*, *Pandanads*, and thousands of other plants, all of which are cultivated for export to New York during the months of June, July, and August. The plants are, generally speaking, grown in pots, from thumbs to the 16-inch size; but beds, containing two or three thousand each, were planted out, to be again lifted, and potted hereafter as demand may arise.

For transit purposes, the firm has a contract with a line of steamers, who set apart a certain portion of their space for special storage. The plants are carefully packed on this side by Mr. Dihm, and I am told that each consignment is immediately taken over by the home firm on arrival at the port of New York, thus reducing risk of handling and bad treatment to a minimum. The average percentage of loss is very small. Among other plants, a few large Coconut Palms (*Cocos nucifera*) were successfully landed in New York in good condition last year. Flower pots and manures are returned by the firm by each steamer for the use of their Trinidad Nursery.

On the advice of Mr. Hart, who has taken a great interest in this enterprise, Mr. Dihm has built a small glasshouse for propagating purposes, and especially for the germination of seeds. This house is kept very close all the year round, little or no ventilation being allowed to the occupants of the house; in fact, treated in a similar manner as a propagating house in England during the summer season. In speaking of the germination of seeds,

Mr. Dihm informed me that he could "beat Nature by three months," meaning that if a seed was sown in the open ground at the same time that others were sown in the glass house, the latter would be fully three months in advance of the former which is a great advantage. That the plants raised in this artificial way are thrifty and strong is well shown by the excellent condition of those which had passed the ordeal, and been potted and placed in the open air. *Dracæna Goldiana* was represented by a few small plants, which do not appear to be much of a success. The same may be said of *Cocos Weddelliana*. *Dracænas* and *Asparagus plumosus* were being propagated from cuttings; and a few pans of Water Lilies, from seeds lately received from New York, were commencing to grow. A glass house of some description is indispensable in the tropics, for were it not for something of this kind, it would be quite impossible to raise many valuable seeds. So heavy are the tropical rains, that all seeds sown without covering are almost sure to be washed away. Like protection is also necessary for the successful growth of *Adiantum Farleyense*, and other tender Ferns, but for this purpose it must be understood that a completely closed house is not required; on the contrary, one where plenty of air can always be admitted, and one which can be readily shaded from the sun, is best suited to the purpose. In a well-drained bed were numerous seedlings of the best kinds of *Hippeastrum*, popularly known as *Amaryllis*. These were in fair condition, but the results of the experiment could not be accurately determined.

Palms are the principal plants grown at this nursery, followed in number by *Dracænas*. After the Palms are placed in pots from the seed-pans they are placed in permanent beds, where they are shaded with leaves of the Cocorite Palm (*Maximiliana caribæa*), raised on frames 8 feet above the ground, for protection against the sun. It is a somewhat difficult matter to procure these leaves, as this Palm, though once very plentiful, is fast disappearing, and a substitute will soon have to be found. A light wooden roof made of laths, say, 2 or 3 inches wide, and placed at a distance of 1 or 2 inches apart, to allow light to penetrate, might be suggested; and from an economic point of view, it would appear that by using such, a saving of labour might be effected. The beds under this shade are raised and sloped sufficiently to allow superfluous water to escape the walks and canals intersecting each other. The pots are partly plunged in the soil, which is of a very adhesive nature, with an opening scooped out underneath each pot by a trowel for the sake of drainage. First and foremost among the Palms is *Livistona chinensis* (*Latania borbonica*). This was present in all sizes, from 6 inches to 8 feet high in from 2 to 16-inch pots. This favourite is always in demand in New York, and is shipped by thousands during the summer months in all sizes, the larger specimens having an average of ten leaves each. Many plants of *Archontophoenix Cunninghamiana* (*Seaforthia elegans*), *Howea Forsteriana* (*Kentia Forsteriana*), *H. Belmoreana* (*K. Belmoreana*), *Rhapis flabelliformis*, *Phoenix sylvestris*, *P. rupicola*, *Stevensonsonia grandifolia* (*Phœnicophorium sechellarum*), and *Licuala peltata*, were noticed, and among small plants several hundred of *Chamærops ignea* (so-called by the firm) were on their trial. *Thrinax radiata* (a native Palm of Trinidad), *Livistona altissima*?, *Chrysalidocarpus lutescens* (*Areca lutescens*), are grown in large numbers, especially *C. lutescens*. A few large tubs of this latter were noticed to be in excellent condition.

Unlike the Palms, *Dracænas* are planted out in beds fully exposed to the sun. These are grown for the New York establishment, where they are sold at so much per foot. They are usually exported in 18-inch lengths. The principal sorts grown are *D. ferrea*, *D. terminalis*, *D. terminalis alba*, *D. regina*, *D. stricta grandis*, *D. chelsoni*, *D. brazilien-sis*, *D. imperialis*, *D. metallica*, *D. bella*, *D. Shepherdii*, *D. fragrans*, *D. amabilis*, *D. Massangeana*, *D. Lindenii*, *D. congesta*, and *D. Norwoodensis*. The latter appears to be the gem of the collection.

It is of a delicate character, but in appearance an exquisitely pretty plant. Its colouring is of a bronzy-red, edged with crimson-lake, and it shows out very distinctly among the various colours found in the other varieties. I have followed Messrs. Siebrecht and Wadley in adopting the word "*Dracæna*," as it is by this name the plants are commercially known, but most of them would be placed under *Cordyline* in a strictly botanical article.

In one of the avenues leading to the manager's house are several specimen Palms and Traveller's Trees (*Ravenala madagascariensis*), the latter having already matured seeds from which young plants had been raised, and, at the time of my visit, two more were flowering. In another avenue, parallel to the last, *Areca Catechu*, the Betel-nut Palm, were somewhat conspicuous. The road, however, is much too narrow for a carriage-drive, and the specimens are not seen to the greatest advantage. Planted out here and there are specimens of *Pandanus utilis*, a plant also exported by thousands in its small stages, with *P. Veitchii*, *Didymosperma distichum* (*Wallichia disticha*), *Cycas revoluta* and *C. circinalis*, *Stevensonsonia grandifolia*. *Rhapis flabelliformis* are grown both in pots and planted out, and the same may be said of *R. humilis*. *Aspidistra lurida variegata* is extensively grown, and *Alpinia vittata* in small quantities.

Mr. Dihm has formed a screen of climbing plants, to ward off the sun and glare from the front part of his house, which, apart from its pleasing aspect, helps to keep the interior cool during the heat of the day. *Piper nigrum* (Black Pepper), *Thunbergia laurifolia*, *Stephanotis floribunda*, and the golden-yellow flowered *Ipomœa pterodes* (a native of the colony), were all growing luxuriantly, and thriving in harmony one with the other. *W. E. Broadway, Trinidad, B. W. I.*

SOCIETIES.

CHESTER ROSE SHOW.

JULY 16.—The National Rose Society held their annual provincial Rose Show at this old town on this date, and although so far from the majority of rosarians who grow the queen of flowers for exhibition, there was a grand attendance of growers, and good quality was remarkable throughout the whole show. Unfortunately, it was a wet day, there being one incessant downpour all the morning and afternoon. This fact is the only reason for the public attendance being so meagre, as a greater feast of Roses was never provided in Chester. The entrance to the show-grounds, and also that leading into the exhibition tent were very sloppy and bad, and we could not help thinking that the management might have improved upon this somewhat in the way of straw, tan, or a little sawdust.

Judging commenced fully an hour and a half late; consequently, many holders of private-view tickets were in the tent while the judges were carrying out their functions. This evidently caused some little confusion, as it was quite impossible to turn ladies and gentlemen out into the wretched weather and dirt that prevailed all day.

The Jubilee Trophy was won by Mr. B. R. Cant, of Colchester; Mr. F. Cant, of the same town, followed very closely with Messrs. Harkness, of Bedal, Yorks, they being placed in the order named. This class was very strongly contested, the whole strength being evidently thrown into the contest, with the result that some eight or nine lots of perfect flowers were staged, and the judges had a very difficult task to decide upon the premier honours.

The class for seventy-two distinct varieties, single trusses, was also very strongly contested, Mr. B. R. Cant and Mr. F. Cant, of Colchester, being awarded 1st and 2nd respectively. The 3rd prize went to Messrs. Harkness, of Bedale, Yorks. These collections contained a magnificent lot of flowers in a perfect stage of beauty and form.

The next large class in the nurserymen's division was for thirty-six distinct varieties, three of each, and was again awarded to Colchester, Mr. B. R. Cant and Mr. F. Cant taking 1st and 2nd, in the order named; the 3rd went to Messrs. Dicksons, Newtownards, Ireland, who brought over a wonderfully creditable lot of blooms, especially when one considers the distance they had to travel.

For thirty-six distinct varieties in a lower division, Messrs. Merryweather of Southwell, Prior of Colchester, and Jefferies of Cirencester, were awarded honours in the order named. For eighteen distinct, trebles, Merryweather, Prior, and Messrs. Burch, of Peterborough, were the successful competitors.

Next followed the amateurs' division, and here also the Jubilee Trophy was strongly contested, being finally awarded to S. P. Budd, Esq., of Bath; 2nd honours going to the Rev. J. Pemberton, who ran his opponent very closely indeed; the 3rd was given to E. B. Lindsell, Esq., of Hitchin.

The class for thirty-six single blooms (amateurs) brought out a splendid lot from W. Drew, Esq., The Uplands, Ledbury; Rev. J. Pemberton and Mr. Lindsell being 2nd and 3rd. In the winning stand was a new Rose, a sport from La Duchesse de Morny, which seems of fairly good merit, and quite distinct.

For twelve varieties, three of each, E. B. Lindsell was 1st, with a very heavy lot of blooms; W. Drew, of Ledbury, followed 2nd with one of the most pleasing boxes in the whole show, the blooms being remarkably bright and clean; 3rd was awarded to Mr. Budd, of Bath.

This year there has been a new idea carried out by this Society, viz., to form classes for growers or less than a certain number of plants. It seems to be working exceedingly well. In that for eighteen distinct, single trusses, open to growers of fewer than 2000 plants, W. Boyes, Esq., of Derby, was 1st; A. Whitton, of Bedale, and J. Parker, of Oxford, being 2nd and 3rd.

Twelve distinct, singles, open to the same class of growers, but tied from those competing in the above class, brought out a grand lot from the Rev. L. Garnet, Christleton Rectory, Chester. E. Mawley, Esq., Berkhamstead, and Rev. Page-Roberts, of Scole Rectory, also showed grand lots, and were placed in the above order.

Growers of fewer than 1000 plants of exhibition varieties have a class to themselves as well, and this seems a very fair and judicious arrangement, as evidenced by the strong competition in these new classes or divisions.

For twelve singles, T. Tatham, Esq., Wilmelaw; Colonel F. Standish-Hore, St. Asaph; and J. Ough, Esq., Hereford, were the successful competitors, and in the order named.

Growers of fewer than 500 plants were only required to show six single trusses, distinct varieties. Mr. R. Park, Bedale, Yorks; Dr. W. Bell, New Brighton; and Mr. T. R. Fleming, Rowton, Chester, taking honours as placed.

The classes in the local division, open to amateurs within thirty miles of Chester, brought together several competitors. The chief class, for twenty-four distinct, single trusses, going to the Rev. L. Garnet, of Chester, who showed an extra good example of Duchess of Bedford; also good flowers of Le Havre, Rosieriste Jacobs, and Charles Lefebvre. C. Burgess, Esq., Chester, and Mr. W. Stubbs, of Nantwich, were 2nd and 3rd, with really good collections.

For twelve distinct singles (under the same conditions, but debarred from those competing in the higher class), Colonel F. Standish-Hore, St. Asaph, was 1st; Mr. W. Taylor, Chester, 2nd; and Mr. H. G. Roberts, Hope, Mold, 3rd.

Six distinct singles.—1st, T. Raffles Bulley, Esq., Liscard; 2nd, A. Baker, Esq., Crewe; 3rd, T. R. Fleming, Esq., Chester. The 1st prize for six Teas or Noisettes went to Colonel F. Standish-Hore, who exhibited splendid blooms of Rubens, Jean Ducher, Innocente Pirola, Hon. Edith Gifford, C. Kuster, and C. de Nadaillac. The Rev. L. Garnet, of Christleton Rectory, was 2nd; Mr. W. Stubbs, of Nantwich, being 3rd. Each of these gentlemen put up some first-class and well-finished flowers.

An amateur's class for six new Roses only brought out one competitor, the Rev. J. Pemberton, who was awarded 1st. The same exhibitor was awarded 1st in the next class for nine trusses of H.P. Marie Baumann; C. Burgess, Esq., being 2nd for Mrs. John Laing; and S. P. Budd, Esq., 3rd, also for M. Baumann. The awards for six single trusses went to J. G. Churton, Esq., Neston; Mr. R. Park, Bedale; and Miss Mellich, Workop, in the order named. This lady also got 1st for a collection of garden Roses, being closely followed by the Rev. J. Pemberton. Both of these were excellent lots, and must have afforded the judges some difficulty in coming to a decision.

Next in order came the Tea and Noisette division. In that for twelve varieties, three of each, Mr. B. R. Cant, Colchester, was first with a lot

of flowers that were a trifle dirty and weather-beaten. Mr. Merryweather and Mr. F. Cant followed very closely with good flowers, the last-named having an exceptionally clean lot, but somewhat smaller, and of less substance.

Eighteen single Teas were strongly contested, Mr. Prince, of Oxford, being 1st; B. R. Cant and Frank Cant again following one another for 2nd and 3rd prizes.

Twelve single Teas were shown by Prior & Son, Colchester; H. Merryweather, Southwell; and J. Mattock of Oxford; the prizes going in the same order as placed. The 1st and 2nd in this class were the cause of several comments during the day, and the majority of growers would evidently have reversed the order had the decision rested with them. Mr. Merryweather's were an exceptionally clean and grandly built-up lot, while those of Messrs. Prior & Son were rather weather-beaten and rough in comparison.

Twelve Teas (amateurs, open).—Rev. Burnside, Dr. Budd, and A. Hill-Gray, Esq., were placed in the above order, the 1st prize being a grand collection.

In the class for six Teas (amateurs), A. Hill-Gray, Esq., Rev. Burnside, and Dr. Budd, changed orders; a good proof of how closely these two classes were contested.

In the class for nine distinct Teas, open only to growers of fewer than 500 plants of exhibition varieties, J. Parker, Esq., Oxford, was 1st with grand blooms; C. Kuster, E. de Lyon (good), Innocente Pirola, E. Gifford, and M. van Houtte being very noticeable. E. Mawley, Esq., of Berkhamstead, was a good 2nd with grand examples of Madame Lambard, Madame Hoste, Souvenir de S. A. Prince, C. Kuster, and others. The 3rd prize went to Mr. Boyes, Bank House, Derby. The competition in this class was numerous and very keen.

Six single Teas, for those with less than 200 plants, was awarded in the following order: Colonel F. Stanwick-Hore, St. Asaph; R. G. Burgess, Esq., Knutsford; and J. Brown, Esq., Manchester.

In the extra classes (amateurs) for nine single trusses of any Tea or Noisette, A. Hill-Gray, Esq., Bath, was 1st with good blooms of Maréchal Niel; Rev. Burnside, Hereford, being 2nd with M. van Houtte. For six trusses of any Tea, Mr. Boyes, Derby, was 1st with Cleopatra; Mr. Parker, Oxford, 2nd with Maréchal Niel; Rev. L. Garnet, Chester, was 3rd with Innocente Pirola.

OPEN CLASSES.

For twelve distinct new Roses, Mr. Merryweather, of Southwell, was a good 1st, the most noteworthy varieties being G. Piganeau, J. Dickson, Bruce Findlay, Danmark (a little too like La France), Mrs. Dickson, and Salamander. Messrs. Dickson, of Newtownards, were 2nd; this last exhibit contained four unnamed seedlings of good promise, particularly one which favours G. Luizet, and Mrs. J. Laing—also another grand seedling, that is much lighter, but of somewhat similar type. The 3rd prize was awarded to Messrs. Paul & Son, Cheshunt.

Twelve trusses of any yellow Rose.—1st, A. Hill-Gray, Esq., with good examples of Maréchal Niel; 2nd, Mr. F. Cant, with C. de Nadaillac; 3rd, Mr. J. Mattock, Oxford, with M. van Houtte.

Twelve of any light pink Rose.—1st, Messrs. A. Dickson & Son, Newtownards, with La France (good); 2nd, Messrs. Harkness & Son, with Mrs. J. Laing; 3rd, Mr. F. Cant, with the same variety.

Twelve of any crimson.—1st, Mr. Merryweather, Southwell, with Gustave Piganeau; 2nd, Mr. Frettingham, Beeston, with Marie Baumann; 3rd, Messrs. Cranston & Co., with the same variety.

Twelve dark velvety-crimson.—1st, Mr. B. R. Cant, with Prince Arthur; 2nd, Messrs. Prior & Son, with Earl of Dufferin; 3rd, Mr. Prince, with Earl of Dufferin.

Twelve single trusses, six of one variety of hybrid perpetual, and six of one Tea-scented kind.—1st, Messrs. Harkness & Son, with G. Piganeau and Jean Ducher—these were wonderfully clean and good; 2nd, Messrs. Prior & Son, with A. K. Williams and C. Mermet; 3rd, Mr. H. Merryweather, with Suzanne-Marie Rodocanachi and The Queen.

For nine bunches of Polyantha Roses, Mr. Mount, of Canterbury, was 1st; Miss Mellich, Workop, being a good 2nd.

In the class for new seedling Roses or distinct sports, the Gold Medal was awarded to Messrs. Dicksons, of Newtownards, for H.P. Mrs. W. J. Grant. This is a really fine new Rose, of excellent habit, and built up in the form suggested by a combination of Marie Finger and Madame Cusin. Its colour also partakes somewhat of a blend with these two varieties,

but it is brighter and clearer than either; altogether a first-class introduction.

Messrs. Harkness exhibited two sports from H.P. H. Schultheiss, one a pretty striped form under the name of Merrie England, and which is most distinct, and the best of all striped Roses. The other sport was a very pleasing self colour, somewhat after the shade of Her Majesty, but lighter, and very soft and pleasing. It is, in fact, a shade I do not call to mind in any other Rose. As both of these partake of the good qualities of H. Schultheiss, I predict a grand future for them, although they were not considered worthy of so high a honour as that of a Gold Medal.

Mrs. A. Wilson, exhibited by Mr. Swales, of Beverley, is also a grand new Rose, somewhat between Mrs. George Dickson and Mrs. J. Laing in colour and form, but not so full as the latter.

The medals for the best blooms in the show were awarded as follows:—Nurserymen: Best H.P., Mr. Merryweather, for G. Piganeau; best Tea, Messrs. Paul & Son, for Souvenir d'Elise. Amateurs: Best H.P., Rev. J. Pemberton, for C. de Raimbaud; best Tea, E. Mawley, Esq., for Souvenir de S. A. Prince.

Messrs. A. Dicksons, of Newtownards, exhibited forty-eight blooms of their new Rose, Margaret Dickson, which showed it to be an addition to our light Roses of the Merveille de Lyon type. Messrs. Dickson, of Chester, occupied a large recess with a grand collection of herbaceous subjects, and also eighteen large boxes of cut Roses, including all the leading kinds, in addition to several very tastefully arranged garden and button-hole varieties. They also exhibited their new Fern, Adiantum C. veneris imbricatum; a great acquisition, that is equally hardy with the type, and very closely resembling A. Farleyense in size of pinules and colour. Altogether this was one of the best Rose shows held, and it was a great misfortune that the weather should have been so bad.

WALTHAM ABBEY HORTICULTURAL SOCIETY.

JULY 6.—Among suburban flower shows the annual exhibition of the above society, which took place on Saturday last at Waltham Cross, takes high place. Being so close to some of the leading Rose nurseries there were very fine collections of cut Roses from Messrs. Paul & Son, Old Nurseries, who also had a collection of bunches of hardy flowers, and from Mr. W. Rumsey, Joyning's Nursery, St. Albans. The leading exhibitors of groups and plants were Mr. E. Ayling, gr. to A. J. Hollington, Esq., Enfield; Mr. J. Nicholson, gr. to J. W. Miller, Esq., Sewardstone; Mr. W. Clark, gr. to Sir T. F. Buxton, Bart., Warlies; and Mr. Hopkins, gr. to H. C. B. Bowles, Esq., Enfield. Among some fine specimen stove and greenhouse plants was a very large and striking example of Lantana Iris, the flowers crimson, orange, and buff. Ferns and groups arranged for effect were particularly good. The Achimenes and Caladiums were remarkably fine. Tuberous-rooted Begonias also were in excellent condition. Roses and hardy cut flowers were well shown. Table decorations were very attractive. Fruit was somewhat sparingly shown, but there were very fine Currants and Gooseberries. In the vegetable department the baskets of vegetables and salads were highly praiseworthy, and in all the classes there was a keen competition.

WOLVERHAMPTON HORTICULTURAL EXHIBITION.

JULY 12, 13, 14.—We gave a brief notice of this last week, and have now to add that the weather was not all that could be wished, but there was an enormous attendance each day. Some good specimens of stove and greenhouse plants in flower were staged by Mr. Cypher, and Mr. W. Finch, gardener to Mr. Alderman Marriott, Coventry, both exhibitors being well known for the plants they turn out. Another local exhibitor, Mr. Dyer, gardener to Mrs. Marigold, Edgbaston, Birmingham, is also a rising successful cultivator, and with but scant plant-growing accommodation, exhibits specimens of great merit. Mr. Cypher also was 1st for a handsome group, to which we referred last week; Mr. Dyer, gr. to Mrs. Marigold, Birmingham, 2nd; Mr. J. E. Knight, Wolverhampton, 3rd.

Mr. Cypher was the only competitor in the class for eight Orchids, but these were very fine specimens; and Mr. Finch, gr. to Mr. Alderman Marriott, Coventry, was 1st for six Orchids, a fine lot; fol-

lowed by Mr. Powell, gr. to G. H. Kenrick, Esq., Birmingham, with a capital lot.

Ferns, Fuchsias, Coleus, and Caladiums, were plentiful, and there was an excellent display of brightly coloured, well-grown, medium-sized zonal Pelargoniums, medium-sized specimens, and the 1st prize lot of six tuberous Begonias exhibited by Mr. J. E. Underhill, Wolverhampton, deserve special mention for good culture and the fine quality of the varieties; and he also took 1st honours for a collection of Gloxinias, about thirty plants admirably grown and flowered.

Stove and greenhouse cut blooms and cut herbaceous blooms were well represented in the gentleman's gardeners' classes, and Messrs. Perkins & Sons, Coventry, were to the front in the open classes for bouquets.

Several classes for local amateurs who do not keep a gardener, and a large number of classes for cottagers, were sufficient to fill a large tent, and the cottagers' vegetables were generally fine.

Fruit.—The open classes for fruit were well filled, and a good display was made. For a collection of ten varieties, Mr. McIndoe, gr. to Sir Joseph W. Pease, Bart., Hutton Hall, was 1st; Mr. Bannerman, gr. to Lord Bagot, 2nd; Mr. J. Edmonds, 3rd; and Major Williams, 4th. For four bunches of Grapes, 1st, Mr. Bramwell, gr. to H. H. F. Hayhurst, Esq.; 2nd, Rev. Canon Coventry; 3rd, Mr. Meakin. The Rev. Canon Coventry also took 1st prizes for two bunches of black Grapes, and two of white; also some good Peaches and Nectarines, and Melons were also staged, also smaller collections of fruits.

As we stated last week, Roses were a surprise; so fine and so numerous, many of the great growers giving a generous support to the committee by exhibiting in great strength.

Five lots of seventy-two blooms were staged, Mr. B. R. Cant being 1st, with a very fine lot; Mr. F. Cant a close 2nd; Messrs. Harkness & Sons 3rd.

For forty-eight Roses, Mr. B. R. Cant was again 1st, Messrs. Prior & Sons 2nd, and Messrs. Cooling & Sons 3rd, seven exhibits being staged.

For thirty-six Roses.—1st, Rev. J. H. Pemberton; 2nd, Mr. F. Cant; and for twenty-four Roses, Mr. B. R. Cant was 1st, Messrs. Prior & Sons 2nd, and Messrs. Cooling & Sons 3rd.

Other classes were well filled, the Rev. J. H. Pemberton scoring 1st in some of the amateur classes; Mr. B. R. Cant 1st for twelve Teas, Messrs. Prior & Sons 2nd, and Mr. H. Merryweather 3rd.

Several stands of twelve light Roses, one variety, and twelve darks, one variety, were staged. In the former, Messrs. A. Dickson & Sons, Newtownards, were 1st, with their beautiful Margaret Dickson; Messrs. Prior & Sons 2nd, with Mrs. John Laing; and Mr. B. R. Cant 3rd, with Ernest Metz, a lovely (very fine indeed) Tea-scented. In darks (twelve blooms), 1st, Messrs. Cooling & Sons, with A. K. Williams; 2nd, Messrs. Prior & Sons, with Horace Vernet; 3rd, Mr. B. R. Cant, with Gustave Piganeau, and we may just say that blooms of this fine variety were numerous throughout the exhibition. A Certificate of Merit was awarded to Messrs. Dickson & Sons, Newtownards, for a very fine new Tea, Mrs. W. J. Grant.

Special prizes offered by Messrs. Sutton & Sons, Messrs. Webb & Sons, and Messrs. Carter & Co. were well contested, and in saying that Mr. Waite, gr. to the Hon. W. P. Talbot, Esher, and Mr. Wilkins, gr. to Lady Guest, were the principal winners, the quality of the exhibits will be understood. Mr. Milner, gr. to Miss Talbot, was also a successful exhibitor of vegetables.

Honorary exhibits were numerous, and the place of honour must be given to Messrs. Sutton & Sons, for their splendid group of Gloxinias of high-class quality. Her Majesty is a well-known beautiful pure white, and Duke of York is probably the finest Gloxinia for quality yet seen, and both well deserved the award of First-class Certificate. Mr. W. Allen, gr., Gunton Park, Norwich, received First-class Certificates for his new Strawberries, Lord Suffield and Gunton Park. Messrs. H. Cannell & Son had a stand of bloom of very fine double Begonias of great merit. Mrs. Cornwallis West, Mrs. Lewis Castle, and Mrs. George Bryson especially so, and Messrs. Birkenhead staged a very large collection of choice Ferns. Other honorary exhibits were staged by Messrs. Thomson & Co., Hurst & Co., Catbush & Son, Clibran & Sons, and others.

On the third day of the exhibition a new departure was tried, by inviting collections of garden decorative Roses of older sorts, and Messrs. Cooling & Sons, were 1st for twenty-four varieties, as well as twelve in bunches, and these and other stands proved to be

of very great interest to visitors. Varieties of old kinds such as Ruga, Fellenberg, Aimée Vibert, Lamarque, J. d'Esperen, Old Moss Created Provence, York and Lancaster, Félicité Perpétue, Moss Lauri, old common China, La Neige, Gloria Mundi, were in company with L'Idéale, Paul's Single White, Pepita, Pissardi, Paul's Single Crimson, Celine Forestier, and some varieties of Rugosa and Miniatus. The ladies seemed to greatly approve of these charming garden varieties, and note-books were in great request.

The public park is in the highest condition, and there are 70 acres of it, admirably kept and decorated, and the Messrs. Green, father and son, are to be congratulated on the success of their efforts to make the exhibition what it was, a representative one on a grand scale.

THE MIDLAND PINK SHOW.

JULY 12.—The Midland growers made a brave show with their Pinks at Wolverhampton, on this date, holding their second annual exhibition of the National Pink Society (Southern Section), in connection with the Wolverhampton Floral Fete. Nothing can be more convenient in the way of arrangement; the fête affords an excellent opportunity for the Midland Pinks to be exhibited, and the exhibition held on this occasion promises well for the future of this interesting member of the fragrant Dianthus. It should be said that one or two growers, at least, were kept away through the operation of domestic occurrences or business necessities.

There were two stands of twelve Pinks, and Mr. A. R. Brown, Handsworth, Birmingham, was placed 1st with a remarkably good stand of distinct varieties, having Jeannette Amy, a new and very fine purple-laced Pink, raised by Mr. Brown, and full of promise; Minerva, Berard, Ethel, Modesty, Ernest, Empress of India, Bertha, Harry Hooper, R. L. Hector, and Godfrey, all large and full, and finely-laced; 2nd, Mr. C. F. Thurstan, Wolverhampton, the Hon. Secretary of the Society, with Duke of York, a seedling of 1891, a very fine red-laced—pure white ground, finely-shaped petal, well laced, and highly promising; Duchess of Fife, Boiard, Modesty, Empress of India, John Dorrington, Lady Louisa, James Thurstan, and seedling.

Class 2 was for stands of twelve blooms, in not less than six varieties, three competing, and here Mr. A. R. Brown was again 1st, with Boiard, Amy, Ethel, Ernest, Bertram, Minerva, Godfrey, and Empress of India, a few being in duplicate; 2nd, Mr. Robert Sydenham, with Boiard, Ne Plus Ultra, Eurydice, Modesty, Minerva, and Harry Hooper.

In class 3, for six blooms, distinct varieties, Mr. A. R. Brown was 1st, with excellent blooms of Amy, Bertha, Ada Louisa, Minerva, Ophelia, and Empress of India; 2nd, Mr. C. F. Thurstan, with Duke of York, Modesty, Duchess of Fife (like a pale form of Modesty), Ada Louisa, Boiard, and a seedling.

With six blooms, in not less than three varieties, Mr. A. R. Brown again took the lead, with Amy (two blooms), Minerva, Bertram, R. L. Hector, and Rosy Morn; 2nd, Mr. C. F. Thurstan, with two blooms of Harry Hooper and seedlings.

In the class for six blooms in not less than three varieties for those growers who have never won a prize for Pinks, Mr. J. Jester was the only exhibitor, having Modesty, Boiard, Eurydice, Rosy Morn, and two blooms of John Love.

The class for three blooms in three varieties, brought three exhibitors, and Mr. C. F. Thurstan was 1st with three seedlings; 2nd, Mr. A. R. Brown, with Amy, Godfrey, and Bertram.

Then followed prizes for single blooms of purple and red-laced Pinks; those for the former were awarded as follows:—1st, Mr. A. R. Brown, with Amy; and 2nd, with George White; 3rd, Mr. R. Sydenham, with Rector; 4th and 5th, Mr. C. F. Thurstan, with Mrs. Thurstan. The prizes for red-laced went as follows:—1st, Mr. A. R. Brown, with Empress of India; and 2nd, with Bertram; 3rd, Mr. C. F. Thurstan, with Eurydice.

The premier purple-laced Pink was Amy, shown by Mr. A. R. Brown in class 1. The premier red-laced, Duke of York, shown by Mr. C. F. Thurstan in the same class.

The class for six bunches of Pinks, including border varieties, brought a capital stand from Mr. Thos. Walkden, Sale, who had fine bunches of Souvenir de Sale, Progress, W. Brownhill, white; Emily, a laced Pink; Picotee Pink, white laced with pink, very pretty; and a Seedling. Messrs. Thomson & Son, were 2nd, with good bunches of

Ascot, Lord Lyon, Derby Day, Pelican, white; Her Majesty, and Daniel O'Rourke, a laced variety.

Messrs. Thomson had the best bouquet of Pinks; Mr. W. Brownhill was 2nd.

SCOTLAND.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

THE acting directors of this society held a meeting in the office of the secretary (Mr. A. M. Byres, C.A.) on the 16th inst. There was a full attendance. In the absence of Colonel Crombie through indisposition, Mr. Alexander Robson, of Messrs. W. Smith & Son, seedsmen, was called to the chair. Prizes were intimated from Her Majesty the Queen, the Duke of Fife and H.R.H. the Duchess, Messrs. Doulton & Co., Lambeth, and others. After careful consideration it was agreed to give the Queen's prize—a handsome solid silver salad bowl—for a collection of best-grown plants. The Fife prize was awarded for a bouquet of wild flowers, open to boys and girls under sixteen years of age, and for which no entry fee will be charged. Messrs. Doulton's valuable prize is given for a collection of cut flowers arranged for effect. Should the floral gala and military tournament result in a financial success, it is proposed to increase the prize money offered in the schedule *pro rata* to the extent of 50 per cent. The show will be held in the Central Park, Kittybrewster, Aberdeen, on August 18, 19, and 20. The directors are sparing no pains to make the exhibition a useful and interesting one and as the season is rather a late one, it is expected that the exhibits will be in capital condition.

ROYAL CALEDONIAN SOCIETY'S ROSE SHOW.

JULY 13.—This show was opened on a fine summer's day, succeeding one that reminded us forcibly of November, and great fears were felt by many that the exhibition would prove a failure, but such was not the case. Though many keen exhibitors were absent owing to the lateness of the season, prizes to the number of 137 (some of them very tempting), were offered for plants, cut flowers (including Roses), fruits, and vegetables. The Roses were, as usual, the one attraction, especially to the ladies, who were in great force, and crowded round the show tables. Nurserymen did well by the fine display which they made on the tables, and were represented as strongly as ever. Tree Ferns, Palms, and Conifers assisted to form a broken line of greenery between the pillars of the show hall.

Beginning at the west end of the building, a small unpretending exhibit was placed, forming a table of Araucaria excelsa, intermingled with various Palms. This species of Conifer appears to be greatly in demand. The exhibitor (Mr. A. Glass, nurseryman, Edinburgh), like others, is fast increasing his stock of it. Messrs. Laird was next with a neatly arranged table, consisting of some choice Crotons, one called Challenger being of extra merit; Dracena Duchess of Portland, very fine; Lilium Harrisii, fine; Caladiums in variety; Hæmanthus Katherinea, very telling. Mr. D. W. Thomson, of Golden Acre Nurseries, was, as usual, exhibiting fine Crotons, Dracenas, Nepenthes, amongst them N. Mastersiana in fine form—this is a comparatively hardy species, that is able to withstand more rough treatment than any other; new Caladiums, Palms, showy Gloxinias interspersed with Ferns, &c., formed a very pleasing exhibit. Messrs. Methven & Sons' table was brilliant with choice flowering plants, as Bouvardias, novelties in double-flowered Pelargoniums, P. Comte Horace de Choiseul being conspicuous among them; Isadore Ferrel also was a showy variety. A line of nice Palms mixed with variegated Ficus elastica, formed a telling line in the centre of this table.

Dickson & Co. were rich in Palms, Liliums, and Ferns, with numerous groups of their choicest Violas and Pansies—these if they had been placed apart from the other plants, would have been an improvement. Mr. Dobbie's tufted Pansies, in immense numbers, ranging in colours from white to dark purple,

was a great attraction. His Sweet Peas too, were in great variety, and also beautiful.

A table which requires special mention was that from Messrs. Laing & Mather, Kelso, and admitted on all hands to be a grand feature, viz., a long table loaded with beautifully-flowered and grown Carnation Souvenir de la Malmaison, pink and white varieties mixed; basketfuls of Carnation Germania placed among the other varieties, and the whole interspersed with Ferns. It was awarded a well-deserved special prize. Carnation Gloire de Nancy was admired on this table.

Mr. Cuthbertson had a splendid display of cut herbaceous flowers.

Among the gardeners' tables, Mr. Wood, of Oswald Road Gardens, had a good display of *Odontoglossum Pescatorei*, *Thunia Veitchii*, *Crotons*, *Palms*, *Ferns*, &c. Among the exhibits of foliage plants, Mr. Alexander Chreighton, Liberton, had a fine plant of *Croton Thomsonii* and *Dracena elegantissima*.

Six foliage plants in pots.—This exhibit was made up chiefly with *Palms*, *Crotons*, *Dracenas*. There is nothing very special in the various exhibits in this class.

For four Orchids, Mr. Sharp, Freeland's Gardens, had *Lælia elegans* in beautiful colour, but with only one spike; *Odontoglossum Alexandræ*, with five spikes; *Cattleya Gaskelliana*, five spikes; and a plant of *C. Mossiae*, with six flower-spikes. For two Orchids, Mr. Woods, Oswald Road, was 1st, for *Cattleya Sanderiana* and *Vanda suavis*; Mr. A. Findlay, 2nd. Mr. Sharp was deservedly 1st for one Orchid with a well-grown plant of *Cypripedium Veitchii*, with fourteen well-developed flowers.

Gleichenias, well grown, were placed on a table with some fine specimen Ferns. The *Adiantum* species were in varied and fine form. Mr. Chreighton had six table plants, and was 1st among many exhibitors. *Fuchsias*, *Caladiums*, zonal and tricolor *Pelargoniums*, remarkably fine, filled up the spacious tables, and *Carnations* in pairs, of huge size and well-flowered, and alpine, made a fine display.

Passing on to the tables of Roses, there were enough blooms shown, were they noticed in detail, to fill a large report, but many attractive and meritorious exhibits must be passed over. Mr. Cocker tabled a grand non-competitive display. He was too late in entering, and had to be excluded from the competition, but like a true Aberdonian was not to be precluded from showing what he can do in the far north-east. He had, in great numbers, excellent Teas and hybrid perpetuals, Lady Fitzwilliam, Maréchal Neil, Comtesse de Panisse, Viscountess Folkestone, Rubens, Comtesse de Nadaillac, Souvenir d'Elise Vardon, Madame Hoste, Princess Beatrice, Jean Ducher, Princess of Wales, and many others which filled a large amount of space. Following these was a grand display of herbaceous flowers arranged to give the best effect, *Pyrethrums*, *Pæonies*, *Gaillardias*, *Campanulas*, *Chrysanthemums* (*C. semiduplex* was very conspicuous); *Delphiniums*, *D. Brunonianum*, being strongly Musk-scented; *Lychnis*, *Inula Hookeri*, and many others formed a fine feature.

Messrs. Dickson, Belmont, near Belfast, took the lead, as usual, with an imposing and varied display of Roses. Messrs. Dickson have to complain of deficiency of colour in their Roses this year. They were placed 1st in most of the Rose classes in which they entered, and among their forty-eight distinct blooms were Margaret Decon, a grand white; Marchioness of Dufferin, Salamander, Duke of Edinburgh, La France, Marie Baumann, Charles Lefebvre, Earl of Dufferin, Louis van Houtte, Madame Lacharme, La Rosier, and Pride of Waltham. Mr. Crole made a good 2nd with many fine varieties; Senateur Vaise, still a grandly formed old Rose, stood out well among many novelties. Mr. Dickson had twenty-four, and was placed 1st in that class; Mr. Crole was 1st for twenty-four Teas.

In the class for twelve trusses Mr. Dickson was 1st for finely formed blooms; and Mr. Crole was a capital 2nd among a great many competitors; Duke of Edinburgh was extra brilliant, and it is still a

telling exhibition Rose. It was found on Mr. Dickson's stand.

Fruit.—This which was really a fine display, of excellent quality, and in most cases the size was also good. Mr. J. Boyd, Callendar Park, was the only exhibitor of a collection of fruit. He had fine well-finished Black Hamburgh and Madresfield Court Grapes, Early Rivers Peaches, Best-of-all Melon, Queen Pine-apples, brown Turkey Figs, Lord Napier Nectarines, and Laxton's Noble Strawberries, clean and well arranged. The 1st prize for one Pin-eapple was taken by Mr. Murray, gr., Culzean Castle; 2nd to Mr. Boyd. Four bunches of Grapes were shown very largely: 1st, Mr. Smith, gr., Oxenford Castle, having excellent Black Hamburghs and Buckland Sweetwater, two of each. Mr. W. Murray, gr., Park Hall, was 2nd, with Bowood Muscat, with extra fine bunches and berries, but rather under-ripe, and Black Hamburgh; 3rd, Mr. Morrison, gr., Archerfield.

For two bunches of Black Hamburghs, Mr. Murray, gr., Parkhall, had a pair of the finest bunches which have been exhibited at Edinburgh, perfect in colour, of fine form, and about 5 lb. in weight. Mr. Smith, gr., Oxenford Castle, was 2nd, with very fine bunches; and Mr. Mattison, Currie Hill, had fine bunches, large in berry, and well coloured. There were others, in fine form, from Callendar, Keir, and elsewhere.

Two bunches of any other black Grapes were represented by two beautifully-coloured bunches of Madresfield Court—not large in berry, but the bunches of perfect shape. Two bunches of white Grapes were represented by very fine ones of Bowood Muscat—large in bunch and berry, but under-ripe. Other white Grapes were numerous, but somewhat under-ripe in all cases.

Peaches were both numerous and good. Six extra fine-coloured Peaches came from Mr. D. Buchanan, and were placed 1st; Mr. Dobbie, gr., Drum; and Mr. Smith, Hopetoun, were placed 2nd and 3rd respectively. Nectarines were excellent, Mr. Smith, Hopetoun, showing the best six Lord Napier; and Mr. Smith, Oxenford, 2nd.

Figs were finer than usual, and the best dish exhibited, that of Mr. Smith, Oxenford. Melons were fair in appearance, but not of good flavour. Mr. Angus, Dalzell Gardens, was 1st. Among Cherries, the best were from Mr. Brown, gr. Pittendreich. Strawberries were represented by Noble and V. Héricart de Thury. Two exhibits from Mr. Allan, Gunton Park, Norfolk, were deservedly awarded First-class Certificates. They were well tested by numerous judges, all of whom were unanimous of the excellence of the fruit.

Among vegetables there is nothing of very great merit, except Duke of Albany Peas, large in pod, well filled, and of fine flavour; one collection of twelve varieties, including fine Peas, Celery, Carrots, Potatoes, Cucumbers, and Vegetable Marrows, a large dish of almost useless Mushrooms spoiling the effect of an otherwise fine exhibit. Cauliflowers, Cucumbers, Carrots, and Turnips, were plentiful, and of good quality. A collection of salads, in great variety, was interesting as an exhibit. A table loaded with immense stalks of Rhubarb was the ugliest feature of the show—Stott's Champion, especially—such stuff should, I think, not be allowed to mar the nice effect of a fine horticultural exhibition. M. T.

NURSERY NOTES.

MESSRS. J. PEED & SON.

ALTHOUGH standing on comparatively little ground, the nursery belonging to the above firm, and situate at Roupell Park, Norwood Road, S.E., is full of interest to the visitor. Like some other of the nurseries in and about town, there is not the least scrap of ground but is made use of, and there are a score or more of houses all filled to their utmost capacity. Immediately after our visit, the annual show of *Gloxinias* was to take place, and the plants were

already looking very show-like, and had been gathered together into one lean-to house with three divisions, the whole about 150 feet long, and containing some 5000 plants. Mr. Peed claims to have secured a first-rate strain, and was the only competitor in the nurserymen's class at the last show at Earl's Court. In two or three span-roofed houses there were 2000 to 3000 pot Vines of different sizes, some for fruiting next year, and others only obtained from eyes this season. They are grown comparatively cool, and upon the three years' system. The permanent vinery is a lean-to about 160 feet long, in three divisions, and the rods are all carrying satisfactory crops, being chiefly for market. They are cropped heavily, and the bunches run about 1 to 1½ lb. The varieties were, whites, Muscat of Alexandria, Trebbiana, Forster's Seedling; and Black Alicante, Black Hamburgh, and Gros Colmar of the blacks. In a lean-to house, well exposed to the sun, were a fine lot of *Caladiums*, some in 10-inch pots, and forming striking specimens, and others, in 6-in. and 7-in. pots. We noticed that most of the newer varieties were included here.

Passing to another span-roofed house we saw a batch of *Crotons*, which were evidently enjoying the intense heat they were subjected to. The plants, such as Hawkeri, Aigburthiensis, Prince of Wales, &c., were dwarf, bushy, and extremely well-coloured. A few *Dracenas* were to be seen, including some good pieces of Gladstone, Norwoodensis, Goldieana, and Lindenii, &c., by the side of which were a number of the useful *Euphorbia Jacquinæflora*, whose habit, however, has always been objectionable.

The *Odontoglossums*, which are grown in two span-roofed houses, are chiefly semi-established plants, and are in a highly-satisfactory condition. Some baskets hanging overhead contained some good plants of *O. Rossi* and its varieties. In the show-house, which is not kept very full during the summer months, were some noble specimens of *Araucaria excelsa*, in 10-inch pots, these were a splendid colour, and stood about 6 feet high. In the latest addition to the houses (which was a good span-roof) there were a lot of *Cœlogyne cristata* in pans, some 2 feet across, well filled with bulbs, healthy and vigorous; also some *Sarracenias*, such as *S. Chelsoni*, *S. Atkinsoniana*, *S. Flambeau*, *S. Drummondii alba*, &c. In the centre were a lot of *Anthuriums*, looking very well, but had just finished blooming. A span-roofed house near the entrance was filled with tuberous-rooted *Begonias* in very full bloom, and in much variety. A good plant of *Marchioness of Bute* was very attractive; the petals are large and good, the greater part of which are pink, but becoming white toward the centre.

Several other houses contained *Palms* and other useful stove and greenhouse foliage plants, and some hundreds of young *Fuchsias*, nice dwarf stuff in 5-inch pots, and just coming into blossom. The varieties included *Avalanche*, *Gipsy Queen*, *Walter Long*, *Prince of Prussia*, *Mrs. Marshall*, *Scarcity*, &c. In the little garden surrounding the houses are 1000 *Chrysanthemums* in about 70 sorts, looking strong and healthy.

In addition to the above, Messrs. J. Peed & Son have about 16 to 20 acres of land at Streatham, entirely devoted to fruit trees and Roses.

THE SURFACE CULTIVATION AND MANURING OF ORCHARDS.

THE impossibility of teaching anything without learning much, was never more apparent than in the delivery of lectures on technical education in horticulture in different parts of the country. Objections have been taken in advance to such lectures, that they must needs prove too high and dry, and so fly over the heads of one's hearers; or so deeply scientific that the average of town or rural listeners would fail to comprehend. On the contrary, most of them have proved intensely practical, and have turned on such themes as the drainage, digging, cultivation, and manuring of land; but successions of crops for superior produce, and highest profits on different

sorts of soil, the influence of dwarfing stocks, root-pruning, and different modes of training and sizes of trees, on fertility, quality and quantity of produce, the effect of early and late supplies, and of even samples and prices, and such purely practical questions in fruit culture as those that head this paper. Within the last few months the writer has given many lectures, and several so-called demonstrations on the technical aspects—that is, the scientific basis, and the minutest practical details of horticulture—grafting, budding, pruning, training, root-pruning, planting, sowing, packing, the prevention and cure of various diseases, have been thus elucidated and explained. But one and all of these demonstrations are weak and futile contrasted with one of overwhelming force, met with ready-made in a large orchard furnished chiefly with Apples and Plums above, and bush fruit—Gooseberries and Currants—beneath, as a ground crop.

This particular orchard, of between 20 and 30 acres, was in specially good condition; the trees were mostly from twenty-five to thirty or more years' old. They bore a splendid crop last year, and promised an equally heavy one in 1892. The bush-fruits underneath were also in good health, and full of promise of a full supply of Gooseberries and Currants, green and ripe. The chief points that struck a stranger were that the entire surface of the ground had been dug over, a part of it, at least, pretty heavily manured.

The owner would have preferred to manure the entire surface every year, but as he considered from thirty to forty tons per acre only a fair dressing for the heavy work that the trees and bushes had to do, he thought it best to dress about half the trees and bushes liberally every other year. But the shallow digging was done every winter as early in November as practicable. He had never tried nitrate of soda nor sulphate of lime in any form, though as he had to cart most of his dung a long distance, it must have cost him from 10s. to 15s. per load before it reached his fruit trees. The cost of the dressing and of the labour must therefore have proved very heavy. But the owner or hirer of this particular orchard—who lives, and is making money fast enough to add field by field to his own fruit orchard—seems quite content with the results of his surface culture and enrichment. And well he may be, as the following *per contra* results from opposite practice on the same soil, almost the same spot, and with trees of similar age and character will show. I think it was my able coadjutor in the teaching of technical horticulture, Mr. John Wright, who first insisted on the practical importance of telling your hearers what they were not to do as well as what to do. Now it so happens that through some dispute with the vendor or the landlord, there is a weedy wilderness of an acre or more fully stocked with Thistles and other rank weeds and stubble, which foul the cultivated portion to a very material extent. Pity that such conduct should not be indictable, but it seems there is no remedy at law for such nuisances. On this weedy, surrounded by a veritable fruit paradise of beauty and plenty, the trees, as already remarked, are about the same size and age as those in the other portion of the orchard. They look, however, quite worn out and dilapidated, and have borne less fruit every year since thus starved and robbed until last year, when, virtually, there was no fruit at all on this portion, while those on the right and the left, behind and before them, carried what were justly termed break-down crops of fruit of the highest quality.

Talk or write of lectures on technical education on horticulture being useless or otherwise, why, with two vivid pictures of this fertile orchard, with its plague-spot of barrenness, and the causes of the difference between the two portions clearly explained, such a practical demonstration of surface culture and manuring might be afforded as would double the produce of existing orchards, and multiply their areas enormously. Neither could the most ignorant miss or ignore the intensely practical

teaching of such illustrations, while the more learned would be none the worse for reading, marking, and inwardly digesting the deeper significance of such lessons afresh. *D. T. Fish.*

VEGETABLES.

LITTLE GEM PEA.

ON June 8, when having a look round the gardens at Wilton House, I noticed a fine crop of Little Gem Pea growing in a raised south border. There were several short rows of Little Gem and Ringleader growing side by side, but the former was several days the earlier. The haulms, from 15 to 18 inches high, carried numerous well-filled pods, and Mr. Challis told me that he had made one or two gatherings, which, for the present season, was early. It is true the situation is favourable, the narrow border being partly protected by a glass wall coping; but this fact, all the same, goes to show that Little Gem is at least a week earlier than that good old Pea, Ringleader. *H. W. W.*

JUNE BROCCOLI.

To-day (June 29) a parcel came to hand containing two of the finest formed Broccolis we have seen for a long time; the quality is excellent, being spherical in form, very white, and of close, firm substance, and well protected by tender green leaves. This variety is named Methven's June Broccoli. The heads we are now admiring were grown at Baugholm, near Edinburgh, by a market gardener, on whose land was no shade to retard these Broccolis. The soil is somewhat light and warm, and the position is where frost and sun have full power over the plants. Methven & Sons, Princes Street, Edinburgh, have had this in their catalogue for several seasons, and to them we are indebted for the heads before us. July Broccoli might be the name for this fine sort, as the cultivator will be able to cut heads during the first week of July. *M. Temple, Carron House, Stirlingshire.*

LAW NOTES.

CONSPIRING TO DEFRAUD AT TUNBRIDGE WELLS.

Thomas Franklin Catterall, alias George Sims, 37, agent, and William Pearce Amies, 65, baker, were charged with conspiring together to cheat and defraud James Lawrence and Elizabeth Hepzibah Cripps, and divers other persons, of Carrots, hay, and other goods and chattels, at Tunbridge Wells and other places, in the month of March, 1892. Both prisoners pleaded guilty.

Detective-sergt. Goddard, stationed at Dartford, deposed that he had known Amies for some time. The extent of the frauds amounted to nearly £900.

His Lordship sentenced Amies to two years' hard labour, and Catterall to eighteen months' hard labour.

[It appears that Amies is too well known to some of our nurserymen, one of whom writes: "In February, 1889, he answered an advertisement of mine offering Swedes at per truck load in barter or manure. I jumped at the conclusion that W. P. Amies was the proprietor of Amies' Patent Manure. I sent off the Swedes at once, directing the manure to be sent to my station. Need I say the fool and his Swedes were soon parted? The Swedes went, the manure never came. Have any other of your readers been favoured with this gentleman's orders?" Gardening papers please copy.]

VARIORUM.

GREENING OF ETIOLATED LEAVES.—The rapid formation of chlorophyll in blanched leaves exposed to sunlight is a well-known phenomenon, but the exact conditions under which the process

takes place have not yet been definitely determined. Herr Palladin publishes (*Berichte d. d. bot. Ges.*, ix., p. 229) the results of a series of experiments made upon etiolated leaves of Wheat and field Beans (*Vicia Faba*) grown in river sand. The leaves were detached from the petiole and laid in diffused sunlight upon water or solutions of different substances. Leaves of *V. Faba* died in distilled water after the second day, without formation of chlorophyll, and this also occurred with calcium nitrate solution. In a 10 per cent. solution of cane sugar, all the leaves had become green after two days, though the growth was inconsiderable; but in a mixed solution of calcium nitrate and sugar the normal colour was attained in 24 hours, vigorous growth ensued, and the leaves were still healthy after three days. The result of this experiment confirms the conclusion of Böhm with regard to the favourable influence of calcium salts [lime compounds], upon the growth of etiolated leaves. Palladin also argues from the never failing presence of iron in the ash of etiolated leaves of *V. Faba* that no chlorophyll can be formed by the action of light in the absence of iron, though iron alone is not capable of producing the green colour, as etiolated leaves laid upon solutions of different iron salts of various concentrations remained yellow even when exposed to light. The absence of soluble hydrocarbons in the etiolated leaves of *V. Faba*, as determined by analysis, also indicates that chlorophyll is not formed in the absence of sugar. But though detached leaves remained yellow in distilled water, the formation of chlorophyll in the leaves of entire plants took place at the expense of sugar conveyed by the transpiration current from other parts of the plant. The last results are by no means vitiated by analogous experiments with the etiolated leaves of Wheat which became green after 24 hours in distilled water, since analysis showed the presence of 2.67 per cent. soluble carbohydrates in the fresh leaves, whilst leaves kept in the dark four days after detachment no longer retained the property of greening. *Pharm. Journal.*

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
Above (+) or below (−) the Mean for the week ending July 16.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.	10ths Inch.	Ins.			
0 4 — 66	0	— 23 + 212	7 —	132	22.2	32	29		
1 5 — 71	0	— 122 + 241	6 —	105	12.9	19	33		
2 6 — 74	0	— 53 + 186	4 —	105	12.4	15	33		
3 4 — 100	0	— 36 + 210	4 +	99	11.6	15	38		
4 5 — 92	0	— 7 + 250	7 +	91	11.6	8	36		
5 3 — 116	0	— 51 + 138	4 +	76	8.8	27	41		
6 3 — 88	0	— 65 + 193	9 —	102	20.1	33	35		
7 4 — 92	0	— 32 + 165	1 —	104	15.9	18	36		
8 1 — 110	0	— 12 + 117	7 +	94	13.1	35	42		
9 2 — 97	0	— 57 + 122	7 —	110	17.4	24	32		
10 2 — 103	0	— 32 + 132	7 +	101	18.1	20	36		
* 0 aver 132	0	+ 40 + 42	3 +	98	13.2	55	49		

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—0, Scotland, N.; 1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.
Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 16, is furnished from the Meteorological Office:—

"The weather was cool, changeable, and unsettled, especially in the more southern districts, where heavy falls of rain were reported, with occasional thunderstorms.

"The temperature was below the mean in all districts, excepting the 'Channel Islands,' the deficit being small (1° to 2°) in Ireland and the south-west of England, but large (4° to 6°) in the eastern and central parts of England. The highest readings, which were registered at varying times in the different districts, were below 70° in the eastern parts of Great Britain, and also in 'Scotland, W.,' and very little above it even in the extreme south of the Kingdom. As a rule the daily maxima over our northern and eastern districts were below 60°. In the 'Channel Islands,' however (at Jersey), the thermometer on the 11th rose to 77°. The lowest readings which also occurred on various dates were very little above 40° in any districts, excepting 'England, E. and S.,' and the 'Channel Islands,' and were as low as 37° in 'Scotland, E.,' and 38° in 'Ireland, N.'

"The rainfall was considerably less than the mean in all the northern districts, and entirely absent in 'Scotland, W.' Over the eastern, central, and southern parts of the Kingdom, however, there was a considerable excess, the amount being in many cases more than double the mean for the week.

"The bright sunshine was more prevalent than it was last week in the north and west of Scotland, but decidedly less abundant elsewhere. The percentage of the possible duration ranged from only 8 in the 'Midland Counties,' and 15 in 'England, N.E. and E.,' to 32 in 'Scotland, N.,' 33 in 'Scotland, W.,' 35 in 'England, S.W.,' and to as much as 55 in the 'Channel Islands.'

TRADE NOTICE.

MR. W. F. TAYLOR, who was for a good many years associated with the firm of Little & Ballantyne, Carlisle, has commenced business on his own account. The business will be carried on under the style of Taylor & Thomson, at 23, Duke Street, Bishopsgate, London, E.

Messrs. Dobbie & Mason, Smithfield Market Seed and Bulb Stores, 22, Oak Street, Manchester, have secured the services of Mr. John Gould, who for a period of eight years occupied that position at their late Deansgate establishment.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

SHORTIA GALACIFOLIA.—Will some of our correspondents kindly furnish A. T. with particulars regarding the cultivation of this interesting plant?

MARKETS.

COVENT GARDEN, July 21.

MARKET brisk, with supplies good. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Tasmanian, per case ... 4 0-8 0	Lemons, per case ... 12 0-25 0
Arum, per dozen ... 6 0-9 0	Melons, each ... 1 0-2 6
Cherries, $\frac{1}{2}$ -sieve ... 3 0-5 0	Peaches, per doz. ... 3 0-10 0
Currents, Red, $\frac{1}{2}$ -sieve ... 3 0-3 3	Pine-apples, St. Michael, each ... 2 0-6 0
Black, $\frac{1}{2}$ -sieve ... 5 0-5 6	Strawberries, per lb. ... 0 3-1 0
Grapes, per lb. ... 1 0-2 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. ... 4 0-12 0	Heliotrope, per doz. ... 3 0-6 0
Arum, per dozen ... 6 0-9 0	Hydrangea, per doz. ... 9 0-18 0
Aspidistra, per doz. ... 15 0-30 0	Ivy Pelargoniums, 12 ... 4 0-6 0
specimen, each ... 11 6-21 0	Lilium Harrisii, doz. ... 18 0-30 0
Begonia, per doz. ... 6 0-12 0	Labellia, per doz. ... 2 6-4 0
Calceolaria, per doz. ... 3 0-6 0	Marguerites, per doz. ... 6 0-12 0
Coleus, per doz. ... 4 0-6 0	Mignonette, doz. pots ... 4 0-6 0
Cyperus, per dozen ... 4 0-10 0	Musk, per doz. ... 2 0-4 0
Dracenas, each ... 1 0-5 0	Palms, various, each ... 2 0-10 0
Ferns, various, doz. ... 4 0-9 0	specimens, each ... 10 6-84 0
per 100 ... 8 0-12 0	Pelargoniums, p. doz. ... 8 0-12 0
Ficus elastica, each ... 1 6-7 6	scarlet, p. doz. ... 2 0-4 0
Fuchsia, per doz. ... 4 0-9 0	

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0-4 0	Myosotis, or Forget-me-not, 12 bunches ... 1 6-4 0
Canterbury Bells, doz. bunches ... 2 0-4 0	Pansies ... 1 0-2 0
Carnations, 12 blms. ... 0 9-1 6	Pelargoniums, scarlet, per 12 bun. ... 3 0-4 0
— 12 bunches ... 3 0-6 0	— 12 sprays ... 0 6-1 0
Corndflower, 12 bun. ... 1 6-3 0	Poppies, 12 bunches ... 2 0-6 0
Eucharis, per dozen ... 2 6-4 0	Primula, double ... 4 0-6 0
Gardenias, per dozen ... 1 6-3 0	Pyrethrum ... 2 0-4 0
Heliotrope, 12 sprays ... 0 3-0 6	Roses, Tea, per dozen ... 0 9-2 0
Lilium candidum, 12 bloom ... 0 6-0 9	— coloured, dozen ... 1 0-1 6
— 12 bunches ... 18 0-24 0	— yellow (Maréchal), per doz. ... 2 0-5 0
— Harrisii, doz. ... 2 6-4 0	— red, per dozen ... 1 0-2 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— Moss (French) 12 bunches ... 6 0-12 0
Marguerites, per doz. bunches ... 3 0-4 0	— outdoor, 12 bun. ... 2 0-6 0
Mignonette, 12 bun. ... 2 0-6 0	Stocks, doz. bunches ... 3 0-6 0
Orchids:—	Sweet Peas, doz. bun. ... 3 0-6 0
Cattleya, 12 blms. ... 4 6-8 0	Sultan, 12 bun. ... 2 0-4 0
Odontoglossum crispum, 12 blms. ... 2 0-6 0	Tuberose, 12 blms. ... 0 3-0 6

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. ... 0 4-0 6	Mushrooms, punnet ... 2 0-...
Beans, French, lb. ... 2 6-3 0	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen ... 0 4-0 6	Parsley per bunch ... 0 3-0 6
Carrots, per bunch ... 0 4-0 6	Shallots, per lb. ... 0 6-...
Cauliflowers, each ... 0 3-0 6	Spinach, per bushel ... 3 6-...
Cucumbers, each ... 0 6-0 9	Tomatos, per lb. ... 0 4-1 3
Endive, per dozen ... 2 0-3 0	Turnips, per bunch ... 0 4-0 0
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

NEW POTATOS.—Kidneys, 5s. to 6s. 6d.; Rounds, 4s. 6d. to 5s. Market dull.

OLD POTATOS.—Season virtually over. Best samples command 100s. to 120s. per ton. J. B. Thomas.

SEEDS.

LONDON: July 20.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., describe the seed market to-day as inanimate and uninteresting. For new Trifolium there is as yet a small inquiry. Some samples of fine new German White Clover seed have been shown: low prices are expected to prevail. The crop of Trefoil promises well. Mustard and Rape seed both keep firm. Canary seed, being well supported by export orders, keeps strong. Hemp seed is unchanged. Linseed is slightly dearer. For Blue Peas and Haricot Beans last week's prices are realised.

POTATOS.

BOROUGH: July 19.—Quotations:—St. Malos, 3s. 6d. to 4s. 6d.; Jerseys, 4s. 6d. to 5s. 6d.; Cherbourg, 4s. to 5s. per cwt.; English Early Rose, 80s. to 90s.; Hebrons, 80s. to 100s. per ton. Old: Bruce Magnums, 90s. to 100s. per ton.

SPITALFIELDS: July 19.—Quotations:—New: Jersey Kidneys, 4s. 6d. to 4s. 9d.; do. Flukes, 4s. 9d. to 5s.; Cherbourg Rounds, 4s. to 4s. 3d.; do. Kidneys, 4s. 3s. to 4s. 6d.; do. Flukes, 4s. 6d. to 4s. 9d. per cwt. English: Myatt's Kidneys, 4s. 6d. to 5s.; Sutton's Regents, 4s. 3d. to 5s.; Imperators, 4s. 6d. to 5s.; Hebrons, 4s. to 4s. 6d.; Early Rose, 4s. to 4s. 6d. per cwt.

GENERAL AVERAGE: July 20.—New: English Hebrons, 90s. to 100s.; do. Kidneys, 100s. to 110s. per ton; Jerseys, 4s. 6d. to 5s. 6d.; French, 3s. 6d. to 5s. per cwt. Old: Magnums, 90s. to 100s. per ton.

FARRINGTON: July 21.—No Jerseys or Foreign on stand English, 4s. 6d. to 5s. per cwt.

FRUITS AND VEGETABLES.

BOROUGH: July 19.—Quotations:—Cabbages, 3s. to 5s. per tally; Peas, 2s. to 3s. 6d. per bushel; Greens, 1s. 6d.; new Carrots, 3s. 6d. to 4s.; Turnips, 2s. 6d. to 3s.; Parsley, 2s.; Spring Onions, 3s. to 5s. per dozen bunches; Egyptian do., 3s. 6d. to 4s. 6d. per cwt.; English Apples, 3s. per bushel.

SPITALFIELDS, July 19.—Quotations:—Cabbages, 1s. 9d. to 4s. 6d.; Radishes, 4s. 6d. to 6s. per tally; Spinach, 1s. to 1s. 6d.; Broad Beans, 1s. 6d. to 2s. per bushel; Turnips, 1s. 6d. to 2s. 6d.; Carrots, 2s. to 2s. 6d.; Spring Onions, 3s. 6d. to 4s. 6d.; Parsley, 1s. to 1s. 6d. per dozen bunches; Cauliflowers, 1s. 6d. to 3s.; Cabbage Lettuce, 3d. to 4d.; Leeks, 1s. 9d. to 2s. 6d.; frame Cucumbers, 1s. 6d. to 2s. 6d.; natural do., 1s. to 1s. 6d.; Beetroot, 3d. to 6d. per dozen; Peas, 4s. 6d. to 6s. per sack; Cos Lettuce, 6d. to 10d. per score; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Horse-radish, 1s. to 1s. 2d. per bundle; Mint, 1s. 6d. to 2s. per dozen bundles; New Zealand Apples, 6s. to 7s.; foreign Tomatos, 9d. to 1s. per box; Gooseberries, 2s. 3d. to 4s.; black Currants, 5s. 3d. to 5s. 6d.; white do., 4s. to 5s.; red do., 5s. to 5s. 9d.; black Cherries, 3s. to 3s. 6d.; white do., 3s. 2d. to 5s. per half-sieve; Raspberries, 3d. to 3½d. per lb. punnet; do., 22s. to 25s. per cwt.; Strawberries, 1s. 6d. to 2s. 9d. per peck.

FARRINGTON: July 21.—Quotations:—Cabbages, 3s. to 5s. per tally; Spinach, 4d. to 6d. per bushel; Turnips, 5s. per tally; Carrots, 5s. per dozen large bunches; spring Onions, 3s. to 4s. per dozen bunches; Spanish do., 6s. per case; Egyptian do., 4s. to 5s. per cwt.; Lettuces, 6d. to 10d. per score; Cucumbers, 1s. 6d. to 3s. per dozen; Peas, best blues, 8s. per bag; Cherries, 4s. to 4s. 6d. per half-sieve; black do., 10s. to 12s. per bushel; Currants, black, 7s. per half-sieve; Gage Plum (foreign), 2s. per box of 8 lb.; Apples, New Zealand, 3s. 6d. per box.

NOTICES TO CORRESPONDENTS.

CATTLEYA LEAVES: P. W., Magdebury. There is no insect or fungus on your leaves that we can find. We believe the appearances to be due to some faulty management; probably defective ventilation combined with too great heat.

FUNGUS IN MOSS: G. Wright. Red = Agaricus (Mycena) acicula. Sch. White, shrivelled beyond recognition. M. C. C.

INSECT ON GOOSEBERRY LEAVES: G. P. The Acarus on the leaves is the, unfortunately, only too well-known Bryobia speciosa; it swarms literally in millions in gardens round London and elsewhere; it is, perhaps, fondest of Ivy, upon which plant in gardens, it may generally be found, but it does not confine itself to any one plant. It is quite correct to suppose it to be related to red-spider; the two creatures are closely allied. Albert D. Michael.

INSECTS: C. W. B., Dublin. The insects on the shoots are the black aphid, common on Cherries, Peaches, and other stone fruits. It can be destroyed by syringing the trees with, and dipping the ends of the longer shoots in, weak tobacco-water, or by fumigation with Nicotina.

LEAVES OF IVY-LEAF PELARGONIUMS: X. We find no fungus, and the thickened appearance of the leaves is due, we think, to some check to growth, probably from the plants being exposed to draughts of cold air. There has been no extension of the area of the leaves, but the juices have filled the cells to repletion. It bears resemblance to the rust in Grapes, and may be due to the same causes.

MUSHROOM GROWERS ABOUT LONDON: A. B. We have no list of these persons. Some of the dealers in Covent Garden Market might supply the information.

NAMES OF PLANTS: E. D. L. 1, Spiraea confusa; 2, Rhamnus Frangula; 3, Veronica cupressoides; 4, Thalictrum flavum; 5, Nepeta cataria; 6, Digitalis lutea.—Workshop. Monotropa Hypopitys, a flowering plant living on roots; not a fungus.—L. A. W. Bromus secalinus, introduced with foreign seed.—T. C. & Son. Bryanthus empetrifolia. W. B. 1, Mackaya bella; 2, A hybrid Veronica, like Andersoni, but darker coloured; 3, Veronica salicifolia.—R. Stanley. A Robinia, probably; can you not send flowers?—A. R. 2, Jasminum gracillimum; 3, An Acanthad: send when in flower; 4, Thunbergia alata Aurantiaca; 5, Adiantum Waltoni. E. N. Dendrobium Bensonia.—F. K. 1, Lycaste Deppei; 2, Oncidium Lauceanum var.—S. Ely. 1, Cattleya intermedia; 2, Lygodium circutatum; 3, Polypodium vacciniifolium.—R. Y. A. 1, Chenopodium album; 2, Epilobium tetragonum; 3, Polygonum Persicaria; 4, Polygonum aviculare; 5, Silaus pratensis; 6, Chenopodium rubrum, but not developed.

PATENT PROPAGATING AND SEED-BOX: T. W. W.—A useful well-made box; but the idea is a very old one. Gardeners having found such boxes useful for placing on hot-beds on hot-water pipes and flues when raising seeds or striking cuttings for the past hundred years. The slate bottom, useful enough where heat is used, would have a retarding effect on the rooting of cuttings, &c., owing to its coldness when the box is used for the cold striking of plants.

PEAS: A. M. D. Your Peas are fasciated; several branches are united. We cannot tell you the name. You should send such questions to the Editor, not to the Publisher.

PETUNIAS: T. H.—It is not unusual for the flowers to become more or less leafy. We do not think it is worth propagating for your purposes.

PLANTS WITH DIRTY LEAVES: Chas Bros. Mycelium of Fumago, apparently, which commonly is developed upon the excretory fluid of aphides. M. C. C.

PRUNING FILBERTS: S. B.—Wait till January or February, when the female blossoms appear.

RUNNERS OF THE STRAWBERRY FOR FORCING: Subscriber. There is no necessity for planting yearly merely to obtain runners for forcing, as excellent forcing plants may be got from any robust plantation, even if be three or four years old. Select two or three of the strongest runners on a plant, stopping the growth just in front of the layered plantlet, and using strong rich loam. Keep the runners that are layered well supplied with water in dry weather, and pot them as soon as a good mass of roots is made.

SCHEDULE OF HORTICULTURAL SOCIETY: *A. J. S.* If, instead of using the word "varieties," the schedule-maker had employed kind or species, the confusion would not have occurred. The person who was awarded the 1st prize interpreted the word varieties according to the meaning it was intended to have, but did not have, and really showed twelve species, but he did wrong, we think, in showing several varieties of each species.

SEEDLING CARNATION: *W. & R.* It is a large well-coloured self, and useful for the border. It has a tendency to split.

SPLITTING OF THE STONES OF PEACHES: *W. C.* The reason for the splitting of the stones of Peaches is at present not known with certainty. A sudden change from a dry to a wet state of the soil has been given as the reason; but splitting does not always occur under those conditions. There is always a severance of the kernel from the fruit stalk, and, owing to this, the kernel dies, and usually the fruit opens at the base.

TATE'S ALGEBRA: *L. E. P.* We suspect you have made a mistake. In any case we do not lend crib-books out for profit, nor require any deposit for any service we may render editorially.

TOMATO DISEASE: *A. S., Florist.* The black spot is caused by a fungus, *Cladosporium fulvum*; unfortu-



C.B.

FIG. 17.—BLACK SPOT IN TOMATOS—CLADOSPORIUM FULVUM.



FIG. 18. BLACK SPOT, LONGITUDINAL SECTION THROUGH THE FRUIT.

nately it is now too common. Occurring on the fruit, especially at the top of the fruit, you could not now apply copper solutions, but you can destroy all the affected plants.

WATER MELONS: *L. P.* Not grown in this country. They would not be generally liked, the flesh being coarse, and flavour not of the finest. In hot climates the plants grow in the fields like any other gourds, and the fruits are much liked for their succulence. In southern Europe the pulp is strewn with a mild kind of red Pepper, or good red wine is poured over it, a spoon being used in partaking of it.

COMMUNICATIONS RECEIVED—*C. R. Clarke.*—*A. Hope.*—*Dr. Russell.*—*D. R. & Co.*—*J. Veitch & Sons.*—*W. S.*—*E. M.*—*Richard Henderson.* too late for insertion.—*J. Coomber.*—*T. W. H.*—*Robert M. Grey, N.J., U.S.A.*—*R. D.*—*J. O'B.*—*T. S.*—*J. S. T.*—*T. W. E.*—*H. W. W.*—*R. A. R.*—*H. F.*—*E. M.*—*F. W. B.*—*T.* too late for an answer in this week's issue.

SPECIMENS RECEIVED.—*F. S. (Cattleya).*

PHOTOGRAPHS RECEIVED.—*R. V. T., Demerara.*—*L. L., Brussels.* *Aristolis* shortly.

DIED.—At Weston-super-Mare, recently, Mr. JOHN MATHEWS, in the sixty-seventh year of his age. The deceased was well-known amongst horticulturists for the superiority of his garden pottery. He had retired from business about six years, but continued to reside at Weston.

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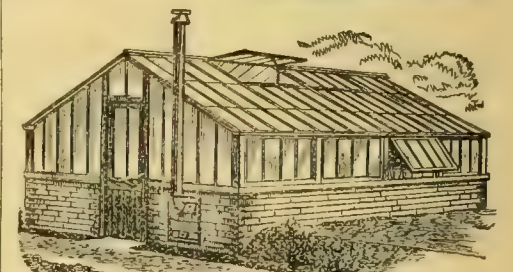
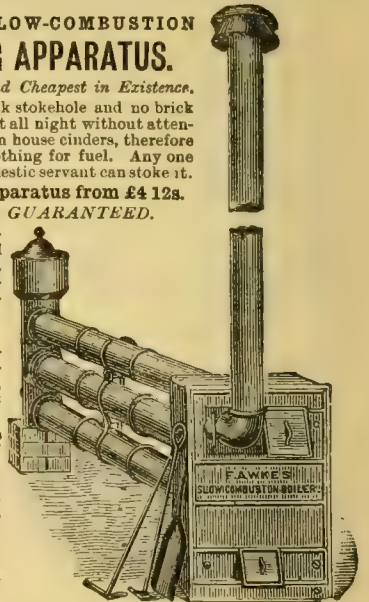
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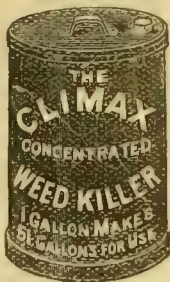
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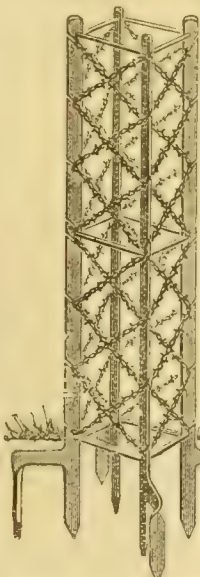
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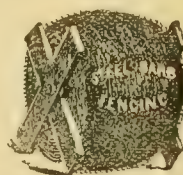
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MR. PRESTON ALTOFT, of Brocklesbury Park Gardens, Lincoln-
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WANT of a thoroughly qualified MAN, to take charge
of their Wholesale and Retail Seed and Bulb Business.
Progressive salary, commencing at £150, given to a good man.
State age and experience.

Orchids.
TRAVELLER.—**MESSRS. LINDEN, L'Horti-**
culture Internationale, Brussels, are in WANT of a
thoroughly experienced ORCHID TRAVELLER for the United
Kingdom. Must have considerable experience with the Orchid
Trade, their names and value. Liberal salary given.—Apply,
with full particulars and testimonials.
Messrs. L. possess the best and largest stock of Orchids in
cultivation.

**WANTED, IMMEDIATELY, a HEAD
WORKING GARDENER,** where another is kept.
Must be a thoroughly competent man, and not afraid of
work.—Apply, stating full particulars, by letter only, O. N.,
Argyll Lodge, Atkins Road, Clapham Park, S.W.

**WANTED, an experienced MAN, for a large
Retail and Wholesale Garden Seed Business,** with a
knowledge of the Nursery Trade; one capable of acting as
Manager. Must be energetic, and must have thorough know-
ledge of the Trade.—State salary, age, and experience, to **S. C.,
Gardeners' Chronicle Office, 41, Wellington St., Strand, W.C.**

**WANTED, a GARDENER, married, without
family, understanding Management of Vines, Con-
servatory, Fruit and Flower Gardens, and Pruning.** Church
people. Wages, 17s. a week, with cottage.—Miss PEACH,
Millbrook, Shillingstone, Dorset.

**WANTED, a SECOND GARDENER,
married, to Assist Indoors and Out.** Must thoroughly
understand his work. A good character indispensable. Essex
man preferred. Apply by letter—**HEAD GARDENER, Wen-
lock Cottage, Springfield Street, Chelmsford, Essex.**

**WANTED, an UNDER GARDENER, for
the Houses and Outside.** One well used to Wall
Trees, Scythe and Horse Machine. Wages 16s. No boy.
Apply, **CHARLES STROUD, Ampfield, Romsey, Hants.**

**WANTED, a FOREMAN, to take entire
charge of a quantity of Glass, near London.** Must
have good experience in Growing Grapes, Peaches, Cucumbers,
Tomato, and Strawberries for market; also first-class
references. An energetic man will find this a lucrative ap-
pointment.—Write to **W. S., Mr. Dickson, Florist, Centre
Row, Covent Garden, W.C.**

**WANTED, a young MAN, who thoroughly
understands Chrysanthemums, Geraniums, Roses,
Mushrooms, and general Nursery Work.** State experience
and wages required.—Address **W., Gardeners' Chronicle Office,
41, Wellington Street, Strand, London, W.C.**

**WANTED, a young MAN, with two or
three years' experience of Outdoor Nursery Work;**
one who can assist with Budding and Grafting preferred.—
State salary expected to **IMRIE AND COMPANY, Ayr.**

**WANTED, a young MAN in a Market
Nursery, as soft-wooded GROWER, under a Foreman.**
Must know something of Fruit Growing. One with a know-
ledge of Wrath Work preferred. Wages, 20s. per week.—
MARSHALL BROS. AND CO., Barnham, Bognor.

**WANTED, first-class GROWER of COOL
ORCHIDS, for the trade.**—All particulars to **V. S.,
Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**

**WANTED, at once, as GROWER, a young Man,
well up in growing Ferns and Cut Flowers for Market.**
—**WOODLAND'S Nursery, Putney Bridge Road, Wandsworth.**

**WANTED, an industrious young MAN,
under the Foreman.** Experienced in growing Palms,
Ferns, Dracenas, &c.—Apply by letter, stating particulars,
age, reference, and wages expected, **D. S. THOMSON AND
SONS, Nurseries, Wimbledon.**

**WANTED, a single MAN, to Work Lawn
Mowers, Use Scythe, and be well up in General Work
of Large Pleasure Grounds.** Wages, 17s. per week.—Apply to
Mr. PARKER, Nurseryman, &c., Rugby.

**WANTED, AT ONCE, in a Market Nursery,
a HANDY MAN, willing to make himself generally
useful.**—State full particulars of experience and wages re-
quired, to **D. K., Gardeners' Chronicle Office, 41, Wellington
Street, Strand, W.C.**

**WANTED AT ONCE, in Market Nursery,
TWO quick active young MEN, those used to Market
Work preferred.**—**K. DROST, Kew Nursery, Richmond, Surrey.**

**WANTED, a young MAN, for General Out-
door Work, age 22.** Must be able to use Scythe and
Machine. Churchman. Wages, 15s. per week and bothy.—
A. BULLEN, The Gardens, Wakehurst, Haywards Heath.

**WANTED, AT ONCE, a BOY for the
Houses, age about 15; respectable and active.** State
terms, including bothy, &c.—**G., Tram Inn, R.S.O., Hereford.**

WANTED, an OFFICE LAD. Must have a
good character.—Apply, in own handwriting, stating
age, and wages expected, to **PITCHER AND MANDA, United
States Nurseries, Hextable, Swanley, Kent.**

WANT PLACES. TO GARDENERS, AND OTHERS SEEKING SITUATIONS.

*The Pressure upon our space at this season of the
year is so great, we are compelled to state
that advertisements received after 6 P.M. on
Wednesday will, in all probability, be held
over to the next week.*

*Advertisers are cautioned against having letters
addressed to initials at Post-offices, as all
Letters so addressed are opened by the
authorities and returned to the sender.*

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DICKSONS, Royal Nurseries, Chester, are
always in a position to RECOMMEND MEN of the
highest respectability, and thoroughly practical at their busi-
ness. All particulars on application.
Telegraphic and Postal Address—"DICKSONS, CHESTER."

RICHARD SMITH AND CO.
beg to announce that they are constantly receiving
applications from Gardeners seeking situations, and that
they will be able to supply any Lady or Gentleman with
particulars, &c.—**St. John's Nurseries, Worcester.**

Head Gardeners.

JOHN LAING AND SONS can at present
recommend with every confidence several energetic
and practical Men of tested ability and first-rate character.
Ladies and Gentlemen in want of GARDENERS and BAILIFFS,
and HEAD GARDENERS for first-rate Establishments or
Single-handed Situations, can be suited and have full par-
ticulars by applying at Stanstead Park Nurseries, Forest Hill,
London, S.E.

**SANDERS, St. Albans, can thoroughly
RECOMMEND several first-class HEAD GARDENERS.**

To Noblemen and Gentlemen requiring Land Agents,
STEWARDS, BAILIFFS, or GARDENERS.

**JAMES CARTER AND CO. have at all
times upon their Register reliable and competent MEN,
several of whom are personally well known to Messrs. Carter.**
Enquiries should be made to 237 and 238, High Holborn, W.C.

**TO THE TRADE.—MANAGER, or
GENERAL FOREMAN and SALESMAN (chiefly Glass).**
Advertiser (age 35) is desirous of an engagement as above in a
good Business. Thoroughly competent and energetic.—
**FREEMAN, Gardeners' Chronicle Office, 41, Wellington Street,
Strand, W.C.**

**GARDENER (HEAD), where three or more
are kept.**—Age 29, married, no family; life experience
in all branches. Eight years as Foreman in present place.
Home Counties vicinity preferred.—**C. ROGERS, Cuthedge,
Halstead, Essex.**

GARDENER (HEAD).—A LADY wishes to
recommend her Head Gardener, who thoroughly under-
stands all branches. Age 44, single; fifteen years' character
—**Miss C. BOLITHO, Trengwainton, Penzance.**

**£5 will be given for information leading to a
situation as HEAD GARDENER, where four or five
are kept.** Experienced in Vines, Orchids, Stove and Green-
house Plants, and Flower and Kitchen Garden. Six years'
and a half with present employer; thirteen years' previous
excellent character. Age 39, one son (age 15).—**J. GOLDING,
Sharcombe, Wells, Somerset.**

GARDENER (HEAD).—**LADY HUTT, Appley
Towers, Ryde,** would be pleased to recommend her Head
Gardener, T. D. Myles, to any nobleman or gentleman requir-
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Leaving through alteration in the establishment.

GARDENER (HEAD).—Age 44, married,
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Gentlemen's Gardens. Thirteen years in last situation.
Highly recommended.—**S. L., Shipbourne, Tonbridge, Kent.**

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as to capability, sobriety, and honesty.—**C. E., Railway
Station, Wadhurst.**

**GARDENER (HEAD), or ORCHID
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Good character.—**F. COOPER, 21, Kent Terrace, Lower
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GARDENER (HEAD WORKING).—Age 28, married, no incumbrance; thoroughly experienced in Vines, Peaches, Melons, Cucumbers, Stove and Greenhouse Plants, Flower and Kitchen Garden. Excellent character and testimonials.—W. DYSON, The Lodge, Drayton House, Ealing, W.

GARDENER (HEAD WORKING).—Age 39, married, no family; well up in all branches. Excellent testimonials as to character, &c.—WRIGHT, 133, Barnsbury Road, Islington, London, N.

GARDENER (HEAD WORKING).—Age 37; married; thoroughly practical in all branches. Eight years' excellent character as Head Gardener from last situation.—LANGSTON, Shardlow, near Derby.

GARDENER (HEAD WORKING).—Thoroughly competent in all branches, including the laying out and planting of grounds, the building and heating of all kinds of Fruit and Plant-houses; life experience. Middle aged, married. Long character, and excellent testimonials.—WM. HOPKINS, Ivy Cottage, Millfield Lane, Highbury, N.

GARDENER (HEAD WORKING); age 48.—A GENTLEMAN wishes to recommend his head working gardener; thoroughly experienced in Vines, early and late, practical in all its branches. Agricultural, land, and stock. Leaving through Gentleman selling the estate. Twenty years' good character.—JAMES POLLICUTT, Percy Avenue, Ashford, Middlesex.

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GARDENER (HEAD WORKING, or good SINGLE-HANDED).—Age 32, married, two children, youngest 5 years; thoroughly understands Gardening in all branches, Early and Late Forcing, Peaches, Vines, Melons, Cucumbers, and Tomatos. Highly recommended by present and late employers.—D. F., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (HEAD WORKING).—Age 39, married; thorough practical knowledge of all branches. Four years in present situation; leaving through breaking up of establishment. Strongly recommended by present employer.—A. BARKER, The Gardens, Marton Hall, Marton R. S. O., Yorks.

GARDENER (HEAD WORKING, or SINGLE-HANDED).—Age 28, married; experienced. Seven years' personal reference from last employer.—C. TUCKER, Holden Hill, Hendon, N.W.

GARDENER (HEAD WORKING).—Age 40, married, one child; experienced in all branches of the Garden. Good references from past and present employers.—E. WING, Primrose Hill, Tonbridge, Kent.

GARDENER (HEAD WORKING), or good SINGLE-HANDED.—Middle-aged, married; life experience. Good testimonials as to thorough trustworthiness, &c.—M. G., Mr. Jones, Market Place, East Finchley, N.

GARDENER (HEAD WORKING), or good SINGLE-HANDED.—Age 34, married; nineteen years practical experience in all branches. Three years' personal character.—S. M., 3, Henstridge Place, St. John's Wood, N.W.

GARDENER (HEAD, or good SINGLE-HANDED).—Age 31; fifteen years' experience. Understands Kitchen Garden, Vines, Peaches, Cucumbers, Melons, Tomatos, Stove and Greenhouse Plants.—RUSSELL, 5, Anstey Road, Peckham, S.E.

GARDENER (HEAD, or good SINGLE-HANDED).—Vines, Melons, Cucumbers, &c., Stove and Greenhouse Plants. Good character. Leaving for no fault.—A. BOOKER, Grange Gardens, Acton Lane, Willesden, N.W.

GARDENER (SINGLE-HANDED, or otherwise); age 30, married, one child.—A Gentleman wishes to find his Gardener a situation as above. Three years' character. G. NORTON, Norton, Yarmouth, Isle of Wight.

GARDENER (SINGLE-HANDED).—Age 26, single at present; four and a half years' excellent reference from present employer. Twelve years' experience.—J. CHARMAN, 22, Tollington Road, Holloway, N.

GARDENER (SINGLE-HANDED).—Age 23, single; seven years' good experience, Inside and Out. Five years' good character.—G. CORNWELL, Hadlow Down, Buxted, Sussex.

GARDENER (SINGLE, or where two are kept).—Age 30, married, no family; willing. Good all-round man. Good references.—M. J., F. Crumpler, Cowley Road, Uxbridge, Middlesex.

GARDENER (good SINGLE-HANDED, or where help is given).—Age 25; twelve years' experience. Excellent character.—A. W., S. Daniels, Nurseryman, Wellington Road, Forest Gate, E.

GARDENER (SINGLE-HANDED, or with more).—Married, no family. Thoroughly experienced in all branches; good character.—A. HOLTGATE, Colnbrook Gardens, Grosvenor Road, Gunnersbury, W.

GARDENER (SINGLE-HANDED).—Age 28, single; life practical experience in all branches. No objections to board and lodging. Good references.—J. W., Rose Cottage, London Road, Sunninghill, Berks.

GARDENER (SINGLE-HANDED, or where help is given). Married. Has had good experience; can be well recommended.—W. CROOK, 12, Courland Grove, Clapham, S.W.

GARDENER (SECOND), where five or six are kept.—Age 27. Eight years' experience; can be well recommended. Bothy preferred.—H. MIDDLETON, 53, The Grove, Ealing, W.

GARDENER (SECOND), Inside and Out, in a Gentleman's Establishment, where three or four are kept.—Age 23; twelve months' good character, four years previous.—F. STENT, Southborough, Bickley, Kent.

GARDENER, in a small Nursery, as Chrysanthemum Grower.—Age 26; well up in Growing for Show, Sale, and Cut Flowers. Good references.—Particulars of T. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

GARDENER.—Age 42, single; thorough all-round life experience, under Glass, Vines, &c.; home and Australian gardening thoroughly understood. Good personal character of five years. Single-handed not objected to, or two small places. No objection to go to America or the Cape.—W. T., 115, Oval Road, Croydon, Surrey.

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GARDENER or FOREMAN.—JOHN COYSH, Gardener, Newbold Revel, Rugby, wishes to recommend a young man (age 26) as above. Well versed in the General Work of a large establishment. First-class Fruit Grower. Character unimpeachable.

GOOD OLD GARDENER.—Industrious, sober, trustworthy; good workman in all branches of Horticulture. Private Nursery, Florist, or Fruit Growing.—GARDENER, 77, High Street, Fulham, London, S.W.

GARDENER (UNDER).—Age 24, single; three years Glass, and five years General Gardening. Three years in present situation. Disengaged August 16. References would be found reliable.—W. BREWSTER, E. F. Milward, Esq., Beechcroft, Shepley Hills, Bromsgrove.

GARDENER (UNDER).—Age 18; three years' experience, Inside and Out. Good references.—R. MATTHEWS, 40, Wellfield, Streatham, S.W.

GARDENER (UNDER).—Age 23; good character. Leaving present situation through a death; abstainer. Disengaged on the 30th.—J. D., The Gardens, Scio House, Putney Heath, S.W.

GARDENER (UNDER), in the Houses, in a Gentleman's establishment.—Age 18; two years' good character. No bothy.—A. H., Watlington Park, Downham, Norfolk.

GARDENER (UNDER).—Age 20; willing to make himself useful, wishing to improve. Good references.—A. H., 7, Queen's Road, Winchester, Hants.

GARDENER (UNDER), or GARDEN LABOURER, in an old establishment in the country.—Age 33; all-round experience. Good reference.—GARDENER, 52, Danefield Terrace, Otley.

GARDENER (UNDER), Inside, or Inside and Out.—Age 23; nine years' experience. Good character from last situation.—W. B., 38, Richmond Grove, Surbiton.

GARDENER (UNDER), in the Houses.—Age 18; active and obliging. Six years' experience Outside and In. Good references.—W. FARNFIELD, 42, Wellfield Road, Streatham, S.W.

GARDENER (UNDER).—Age 19; situation wanted by a young man, who has had three years' experience, Inside and Out. Good character.—W. PROWING, Stargrove, Newbury.

ORCHID GROWER, in small collection, or FOREMAN in the Houses, where Orchids are grown.—Married; ten years' experience, chiefly Orchids.—G. M., Mount Pleasant, Hildenboro', Tonbridge.

TO FRUIT GROWERS.—Advertiser (lifetime experience in Growing Choice Fruit, Cut Flowers, &c., for Market), desires to treat with a Gentleman contemplating this business, as MANAGER, and assure good returns for capital invested. Highest references.—POMONA, 41 Wellington Street, Strand, W.C.

PROPAGATOR and MARKET GROWER.—Convent Garden experience with Tomatos, Grapes, Mushrooms, Roses, Chrysanthemums, Ferns, and all Plants for Cut Bloom and Trade.—G. F., Price's Lodge, Glyn-Nenth, Glamorganshire.

To Nurserymen.
PROPAGATOR and GROWER.—Palms, Ferns, Foliage Plants, Cut Flowers, Roses, Chrysanthemums, &c., in quantity; also Tomatos and Cucumbers. Would not object to go to the Colonies. Good references.—R. B., *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

Trade.
FOREMAN PROPAGATOR.—Age 35; life experience in London and provinces.—E. B., 65, Biddulph Street, Highfields, Leicester.

FOREMAN, in the Houses.—Mr. J. W. REED, Broadwater, Otlands Park, Weybridge, can confidently recommend a young man who has been with him over two years as above.—E. OXFORD, Lynwood, Lyndhurst, Hants.

FOREMAN, in a good establishment.—Age 26; ten years' practical experience. Excellent testimonials from last and previous situations.—FISHER, Tredinnich, Grampound, Cornwall.

FOREMAN, or to take entire management of Market Nursery.—Twenty years' experience; good references.—W. SMITH, 5, Waldeck Villas, Lansdowne Hill, West Norwood, S.E.

FOREMAN, or JOURNEYMAN (FIRST), in large establishment.—Age 24; ten years' experience in good private places. Bothy preferred. Can be well recommended.—E. R., 20, King Street, Chelsea, S.W.

JOURNEYMAN, in the Houses.—Age 19; five years' experience. Good character. Bothy preferred.—E. B., 26, Denyer Street, Marlboro' Road, Chelsea, S.W.

JOURNEYMAN, Inside, under a Foreman.—Age 22; used to Table Decoration. Three years' good character.—F. F., The Gardens, West Stoke, Chichester.

JOURNEYMAN, in the Houses.—Age 25; ten years' good experience. Good character.—R. FAIR-CLOUGH, Mrs. Westlake, Street, Cobham, Surrey.

JOURNEYMAN, in a good establishment.—Age 19; two years in present situation. Bothy preferred.—Mr. MARSHALL, Head Gardener, Froggall, Foots Cray, Kent.

JOURNEYMAN, or in a Florist Nursery.—Age 21.—JOURNEYMAN, Twenford, Herts.

JOURNEYMAN, in the Houses, in a good Establishment, or SECOND where four or five are kept.—Age 24; bothy preferred. Excellent character.—W. A., Little Linford, Newport Pagnell, Bucks.

IMPROVER.—Situation wanted, by a young man, in a Gentleman's Garden, or first-class Nursery, as above. Two years four months' good character from Nursery and West End Florist.—C. K., 2, Lime Villas, Avenue Road, Bexley Heath.

IMPROVER, in a Gentleman's Gardens, where three or four are kept.—Age 18; good character.—E. SHEPPARD, Eardiston, near Tenbury, Worcestershire.

TO NURSERYMEN, &c.—Situation wanted by a young man, age 23; Inside, or Inside and Out. Eight years in last situation.—K., Port View, Exmouth, Devon.

TO NURSERYMEN and FLORISTS.—Young man seeks situation; experienced in all branches of the trade; is of good address; thorough knowledge of Wreath, Bouquet, and Decorative Trade.—M., 33, Victoria Road, Bournemouth.

TO NURSERYMEN and FLORISTS.—Situation wanted as SALESMAN or MANAGER of a small Nursery. Good at Wreaths, &c., also knowledge of Book-keeping. Excellent references. Age 25.—L., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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TO GARDENERS.—Wanted, by a youth, age 17, a situation in a good Garden; will pay a Premium; good character.—H. MARSHALL, Swiss Cottage, Lyndhurst, Hants.

TO GARDENERS and NURSERYMEN.—A young man (age 20), seeks situation as SECOND, or as GROWER for Market. Thoroughly experienced. Good references. Abstainer.—F. SMITH, Headbourne Worthy, near Winchester, Hants.

KNIFEMAN (Outdoor).—Age 17; good and successful Budder and Grafter, and General Nurserywork. Four years' experience. Stating wages, &c.—A. E. DAVIES, American Nurseries, Downham, Norfolk.

SEED TRADE.—Situation required by a young man (age 22) in a good establishment, now, or later on. Four and a-half years' good experience and references.—DELTA, Messrs. Sutton & Co., 76, Chiswell St., E.C.

SHOPMAN, or MANAGER.—Age 31, married; thorough knowledge of Seed, Bulb, Plant, and Flower Trade. Good references.—LOTHIANS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SHOPMAN, or ASSISTANT.—Age 26; experienced in Seeds, Bulbs, Plants, and Floral Work.—T. R., "Shanghai," Southcote Road, Bournemouth.

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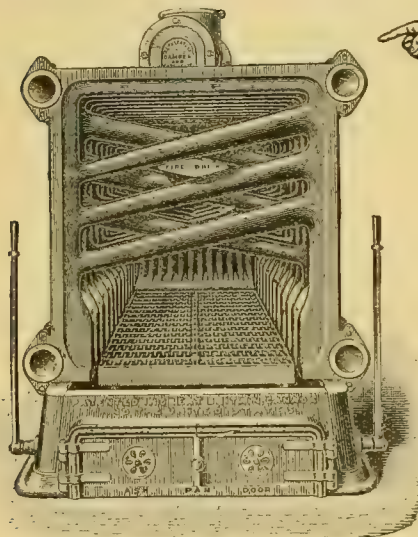
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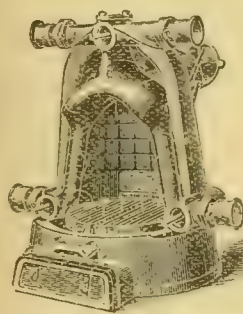
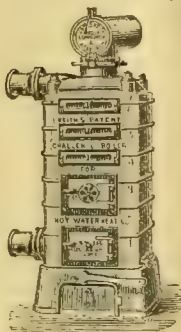
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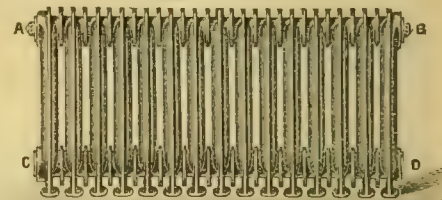
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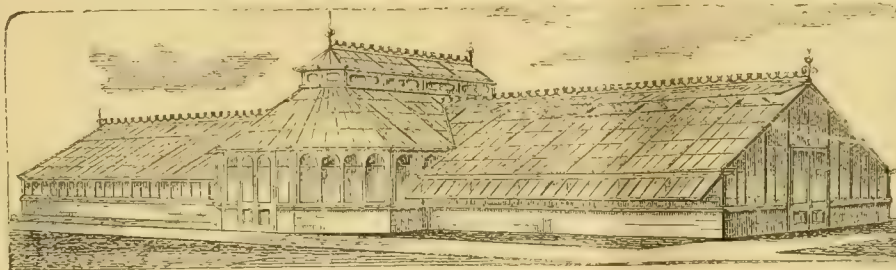
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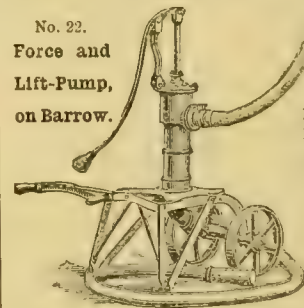


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Thursday, August 11.

SPECIAL SALE OF ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS begs to announce that his next SPECIAL SALE OF ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 11, at half-past 12 o'clock precisely, and he will be glad if Gentlemen desirous of ENTERING PLANTS for this SALE will please send Lists NOT LATER than THURSDAY NEXT.

Friday Next, August 5, 1892.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 5, at half-past 12 o'clock, by order of Mr. F. SANDER, a grand importation of a new and most remarkable Epidendrum—

EPIPENDRUM IMSCHOOTIANUM,

a most extraordinary and entirely distinct variety, of striking appearance; its stems vary in height from 1 to several feet, clothed from base to top with rigid glaucous leaves, which clasp the stem from opposite sides alternately, reminding one somewhat of the cups of a river-dredger; the stems are stout, erect, and fleshy; the flowers terminal, with large, leafy bracts. It is decidedly a great novelty, and absolutely different from any form or variety ever before offered. Neither time, trouble, nor expense has been spared in gathering together this really remarkable lot of plants.

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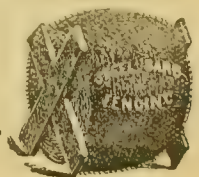
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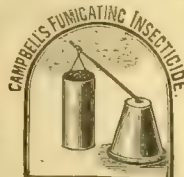
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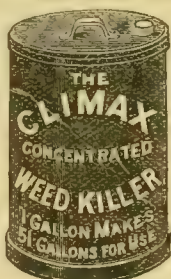
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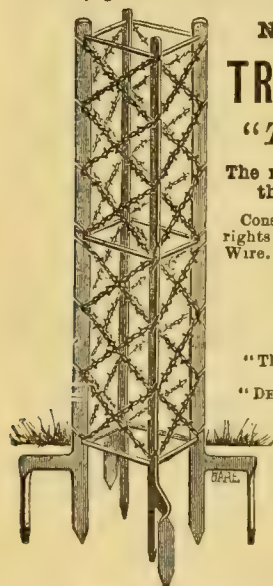
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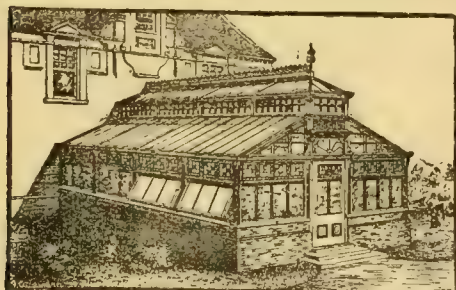
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your PORCUPINE TREE
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quite to answer my pur-
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Yours truly,
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Double Roman and Paper-white Narcissus.



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NAMED HYACINTHS, from 2s. 6d. per dozen.
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Allium Kansuense, azure blue, bulb, better than F. Mogridgei, 18s. per 100.
Anemone blanda, deep blue, Galanthus species Albania, 20s. per 100, October flowering, 1s. 9d. each.
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Calochortus amoenus, the pink Iris Lorteti, the rose-coloured Iris Susiana, a splendid flower, 7s. 6d. each.
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Apply either direct to C. G. VAN TUBERGEN, or to Messrs. R. SILBERRAD and SON, 25, Savage Gardens, Crutched Friars, London, from whom Catalogues may be obtained free.

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THE Gardeners' Chronicle.

SATURDAY, JULY 30, 1892.

QUORNDON HOUSE.

ABOUT two and a half miles from Loughborough, and one mile from the station of Barrow-on-Soar, on the Midland Railway, lies Quorndon House, the property of W. E. J. B. Farnham, Esq. This part of Leicestershire is very attractive for its bold, almost mountainous character. Conical, wood-crowned hills, covered with Foxglove, stand out isolated in the foreground, and at no great distance is the range known as Charnwood Forest. The geological features are very attractive. The journey down furnishes an excellent object-lesson for the traveller as he traverses the whole succession of strata from the London clay to the lias; and then, on arriving at his journey's end, he finds the hills above-mentioned to be granitic upheavals. To find granite hills amid the green pastures of the Midlands comes as a surprise, in spite of what one has read, but here they are, and much character do they give to the scenery, and much fertility does their disintegration ensure to the soil.

The gardens are managed with almost military precision, and their faultless order is in large measure due to the constant supervision exercised, and to the keen interest felt in plants and their cultivation by the proprietor. Such is the order and primness, that one rather longs for the sight of a decayed leaf or of at least one mealy-bug that has escaped the vigilant eye of the gardener. This order pervades the whole establishment, out-of-doors as well as within. The herbaceous plants stand at "attention," and one is thankful there are no ribbon-borders, or their rule and line exactness would be somewhat exasperating.

Some thirty acres are devoted to garden and pleasure-ground, and in even the most remote nook of that great area order and neatness prevail; and in the matter of the things cultivated it is evident that with everything taken in hand, the object is to grow it to perfection, and not simply to have it for the sake of saying it is in the gardens. In carrying out these details, Mr. Farnham is indebted to his skilful gardener, Mr. Cooke.

Just within the entrance lodge, a fine object meets the view, in the broad expanse of the lake, some four acres in extent, the home of numerous wild-fowl, whom no gun is allowed to disturb. A winding walk among groups of ornamental trees runs round it and back again to the carriage-drive at the point below the waterfall, where a bridge spans a narrower part of the lake. The carriage-drive to the mansion runs through undulating grass-covered banks, cleverly planted with shrubs and groups of Rhododendrons, and planted on either hand with specimen Conifers, which, although not of large size, are perfect in form and suitable for the position they occupy. Among them, and in the small pinetum at the

end of the drive, are some very handsome specimens of *Abies Lowii*, *Picea pungens*, and its beautiful variety *P. glauca*, and other uncommon species, and in groups are planted the dwarf *Retinosporas*, *Thuias*, &c. As in many other important gardens in these days, summer bedding with *Pelargoniums*, &c., is not attempted at Quorndon House, but an ample display of colour is secured by beds and borders of herbaceous perennials, among which annuals are sown or planted in patches, and this kind of provision for a display of flowers even until the hard frosts come, is found to give greater variety, to be less dependent on the state of the weather, and in fact, to secure the desired result, and yet leave the houses free from the burden of having to make provision for the bedding plants in winter and spring. The herbaceous plants also do well even where sheltered by the fine Oaks and Beeches with which the grounds are plentifully studded, and where the ordinary summer bedding plants would certainly fail.

The fine set of plant-houses stands within the walled-in garden, and as they form one of the leading features in the gardens under glass at Quorndon, let us at once proceed to

THE ORCHIDS.

Among these the visitor cannot fail to be struck by the growths put on all the species, and especially on the *Dendrobiums*, which Mr. Cooke prefers to grow in baskets suspended from the roof as much as possible. In the first range we entered—a warm range in three divisions; we were immediately confronted by a fine example of *Dendrobium* culture, almost the whole of the first division being filled with plants of *D. Phalænopsis Schroderianum*, in splendid health, many of them producing their beautiful and varied flowers. Some or other of the plants have been in bloom for a long period of time, and many will continue the show throughout the summer. In the next division there are more of the same beautiful *Dendrobe* in flower, as well as some good *D. MacCarthiae*, *D. superbum*, *D. Dearei*, and some of the *Angræcums*, a good collection of which occupies one side of the house. The third division of this range has on the one side a grand lot of *Dendrobium Dalhousieanum*, some of them with scores of bulbs and new growths, which bid fair to beat those that are freshly imported. The other side is occupied by *Calanthes*, excellently well grown.

In the next range, one of three divisions, the roof of the first one entered was bearing scores of fine examples of *Dendrobiums*, chiefly *D. Wardianum*, which possess new growths of from 3 to 5 feet in length, the beauty of which, when clad with flowers, may be readily imagined. Other species are equally well-grown, and one of them, a noble plant of *D. splendidissimum grandiflorum*, has progressed in a degree which it would be difficult to surpass. A year ago last March, Mr. Cooke had it, a free, sturdy plant in a thumb pot, and now it bears several stout flowering growths, and well furnishes the 12-inch basket that it occupies. On the stages beneath the hanging *Dendrobes*, *Cœlogynes* are found to grow well.

The next house has one side filled with plants of *Lycaste Skinneri* in fine health. Here they are grown in firmer soil than in most gardens, and are fed whilst growing with weak, cow-house drainings, the tender roots creeping over the rims of the pots, showing that they benefit by its application. *Cattleyas* and *Lælias* also are good in this range.

The cool and intermediate-house range has a very fine and vigorous lot of *Odontoglossums*

and other cool-growing Orchids, some of which are in bloom, *Epidendrum vitellinum* making a great show. Here is a noble specimen of the fine white *Cattleya Mendellii*, Quorndon variety, and in bloom; a showy lot of *C. Gaskelliana*, *C. Loddigesii*, &c. One side is occupied by a splendid collection of *Miltonia vexillaria*, and the warmest division with a fine lot of *Cypripediums*, *Cymbidium*s, and more *Dendrobium Wardianum* of extraordinary vigour.

NEPENTHES, or PITCHER-PLANTS,

form an attraction equal to the Orchids, and at Quorndon House, one of the largest collections of these plants to be met with, and all in excellent condition. They occupy two large span-roofed houses, and a warm division in a lesser house is taken up by the propagation and nursing of the young plants. The plan of growing these Pitcher-plants at Quorndon is most effective. The plants themselves are suspended all over the roof, and the staging beneath is furnished with coloured-leaved foliage-plants, whose pots are covered with short green moss. This plan renders the arrangement of the houses artistically effective, and at the same time gives the necessary humid atmosphere in which the plants delight, a desideratum which is also helped by the presence of a tank in the one house, and of an ornamental water, with rockery sides, and in which the red, blue, and white Water Lilies grow in the other.

Glancing through the fresh-looking and brilliantly-coloured specimens, the different forms of *Nepenthes Mastersiana* ×, with pitchers varying from green tinged and blotched with rose, to light red, dark red, or dark crimson, commend themselves as the best kind, viewing it all round, and a far handsomer thing than its parent, *N. sanguinea*. One of the next to command attention is the old *N. Rafflesiana*, with its large green pitchers spotted with reddish-chocolate. Grown as we here see it, it is one of the very best. Then come *N. Curtisii*, *N. Northiana*, *N. lanata*, *N. bicalcarata*, and, indeed, the whole of the tribe, all of which are here successfully grown, although each has some peculiarities which require studying. This is markedly the case with *N. Rajah*, which is found to require less heat and more light than the others. Were there nothing else at Quorndon House gardens, the finely-cultivated collection of Pitcher plants would be well worth taking a long journey to see.

Next we come to a block of low span-roofed houses, the first of which is filled with grand examples of *Disa grandiflora* profusely flowered; the second of Maidenhair Ferns, the third has a fine crop of Melons; the fourth, *Tuberoses* sending up their spikes; the fifth, *Tomatos* in full bearing, *Ham Green Favourite* being the one most in favour; the sixth, the lesser *Nepenthes*; the seventh, *Tuberoses* in full bloom; the eighth grand varieties of *Anthurium Scherzerianum*, and new seedling *Sarracenias*, many of them lovely and distinct things. The best of them is *S. Farnhamii* ×, of which *S. Drummondii* was the seed-bearing parent; its tall pitchers are bright red, the upper portion being spotted with crimson and white, the brilliant colour being as effective as that of a flower.

Tuberoses are extensively cultivated, and Mr. Cooke says that he has their flowers in greater or less quantity every day in the year, consequently much space is devoted to them. At the present time there is one house in full bloom, another in backward bud, a large frameful just showing up flower-spikes, and other batches down to the last potted, which are now only

beginning to grow. All these seem to be done with a certainty of success which makes it difficult to understand how so many fail with these useful and fragrant white flowers.

THE FRUIT RANGES.

The several Peach and Nectarine houses, in one of which the first fruits were gathered on May 24, have abundant crops, many of the trees growing on trellises at right angles to the front of the house. The five vineries are heavily laden with bunches of excellent quality, especially in the case of *Bowdow Muscat*; and the Fig and other fruit-houses are well up to the mark. Outside, the trees are well trained, but Pears are deficient here, as elsewhere, this season.

Outside the houses is a very fine border of seedling *Carnations*, some of which are marked improvements on the named kinds growing beside them, and the orange, terra-cotta, and scarlet-flakes are very fine and good flowers.

The encroachment of the glass-houses on the walled-in kitchen garden has necessitated the formation of another of several acres in extent, the whole of which is admirably cropped and well kept. Among the many good things there, are two which Mr. Cooke (who is a keen observer, always on the look-out for really reliable things of the best quality) says everyone should grow, viz., Sutton's Marrowfat Pea, and Veitch's Main Crop Onion, both of which he regards as the best for general purposes yet sent out.

NEW OR NOTEWORTHY PLANTS.

DENDROBIUM CHRYSOCEPHALUM, n. sp.*

THE *Dendrobes* of the *Pedilonum* section are not in fashion with Orchid amateurs, yet they include a good many of the most striking species of this genus. *Dendrobium viridi-roseum*, Rchb. f., for instance, and its variety *candidulum*, Rchb. f., rank among the best of the whole genus. The plant we have at hand is, in spite of its deep golden-yellow flowers, so similar to the *Reichenbachian D. viridi-roseum*, that we supposed we had to deal with a variety of this old species known since the time of Roxburgh. The habit of the plant, the size, and the structure of the inflorescence are the same in both species. The examination of the flower, however, showed differences—especially of the *labellum*—of such importance, that we must admit a new species. As the characters of a merely botanical value are pointed out in the Latin description, we need not reiterate the whole once more. The plant was imported by Messrs. Sander & Co., St. Albans, and flowered in the well-known collection of Prince Liechtenstein, at Eisgrub, Moravia. We are indebted for fresh materials to Mr. W. Lauche, chief gardener. Dr. F. Kränzlin.

MASDEVALLIA HARRYANA GRAVESLE, Hort.

(See fig. 21.)

A pure white variety of this handsome species is a great rarity; indeed, I was not aware that one was in cultivation until the other day. In its native home the species is said to vary from deep rich crimson-purple through shades of majenta, crimson, scarlet, orange, and yellow, to cream-white, the lighter shades being decidedly the rarest, and only occurring near the upper limit of the species. The

* *Dendrobium chrysocephalum*, n. sp. (*Pedilonum*)—Sepalo dorsali oblongo acuto, lateralibus antice oblongis acutis postice in pseudocalcar ovario c. pedicello aequilongum productis; petalis lateralibus sublatioribus oblongis acutis; labello e basi longe producta cuneato lanceolata obtusata; sepalis quam maxime simillimis, disco omnino lævi (i.e., nec lamellis nec lineis elevatis aut sulcatis, crinibus caracteribusque quibuslibet instructo); gynostemio apice utrinque bicornuto, androclinio postice in apicem longum producto; anthera antice retusa, pollinis postice profunde sulcatis curvatis. Caulis teretiusculi læte virides; racemi multiflori densissime confertiflori capitati; bractæ minutissime pallide. Flores intense aurei, 1–3 cm. longi antice (expansi) 5 mm. diametro, pseudocalcar 8 mm. longum. F. Kränzlin.

white variety, to which the above name has been given, and of which a flower has been received through Messrs. F. Sander & Co., of St. Albans, exists in the collection of Henry Graves, Esq., of Orange, New Jersey, U.S.A., and has been named after that gentleman's wife. It was introduced by the late Mr. F. Man, formerly a traveller for the St. Albans firm, but afterwards in business for himself at Orange, New Jersey. The honour of introducing it belongs solely to Mr. Man. Though somewhat faded after its long journey (having been brought over by Mr. Alfred Dimmock, Mr. Sander's traveller), it is still quite white, and evidently a very beautiful variety, which will contrast effectively with the brighter-coloured forms. It may be of interest to mention here that a plant of this species in the collection of Sir Trevor Lawrence at Burford Lodge has just produced a twin-flowered scape, a very rare occurrence with this species. *R. A. R.*

CYRTOSPERMA FEROX.*

This is one of the remarkable new plants exhibited by the "Horticulture Internationale" at the recent Temple Show. It is a Bornean Aroid, with long brown leaf-stalks, thickly studded with conical prickles. The blade of the leaf is deep green, hastate, with rather spreading lanceolate lobes. The spathe is greenish-white, recurved, about twice the length of the cylindrical obtuse spadix, which is completely covered with flowers. It is figured and described in the last number of the *Illustration Horticole*, t. 153.

ORCHID NOTES AND GLEANINGS.

ANGRÆCUM SESQUIPEDALE.

I enclose a photograph of a plant purchased from the late Mrs. Morgan's collection in New York city, and now in the garden of M. S. Kimball, Esq., Rochester, N.Y. It occupies a very light position, suspended near the glass, in a glazed pan; it carried twenty-three flowers of a bold and chaste character. All the Orchids in this collection are under the charge of Mr. Savage, and are grown in glazed pots; they appear to thoroughly enjoy their situation. Over 2000 flowers of *Cypripedium insigne* were open during my visit, and a beautiful show of valuable and interesting hybrids. *Visitor.*

FINE VARIETIES OF ODONTOGLOSSUM CRISPUM.

A large number of plants of *O. crispum* is now in bloom in the houses of A. A. Peeters, of Brussels. We select the following as being especially worthy of notice:—1st, a variety with large brownish-red spots on all the parts of the flower, which underneath is red, tinged with violet. 2nd, sepals and petals pure white, lip canary-yellow, with two round spots of pale golden yellow; the column has two large spots of an intermediate shade of yellow. 3rd, *O. c. guttatum*: flower very large, two petals pure white, sepals lilac, with large central spot of dark red; lip large, covered with a spot, and surrounded by a white border. 4th, lip very curious and handsome, of a remarkable shade of brownish-red, completely surrounded by a narrow white border; base of lip golden-yellow, relieved by the brownish-red which encircles it; column royal purple. The 5th variety might be called *punctatissimum*, all the parts being speckled with violet—the entire flower is of a lilac colour. 6th, the three sepals bear circular spots of lilacy-purple. *Ch. D. B.*

CIRRHOPELALUM MEDUSE.

The figure of this plant in the *Illustration Horticole*, t. 754, reminds one superficially of a sea

* *Cyrtosperma ferox*, L. Lind. and N. E. Brown, sp. nov., *Illust. Horticole*, t. 153 [verbis paucis mutatis].—Petalis 10–28 poll. longis, aculeatis, atrovirescentibus, rubro-maculatis; lamina 10–24 poll. long., 4–7 poll. lata, hastata, lobis basalibus antico subequilongis anguste lanceolato-acuminatis, lobo antico ovato triangulari acuminato; pedunculo petalium subequante aculeato, atroviridi; spatha 3½–4½ poll. long., 1½–1¾ poll. lat., ovata lanceolata longe acuminata extus nitida fusco purpurascens, nervis ochroleucis intus albida; spadice stipitato spathe tertiam partem æquante albido lilacino tincto; sepalis staminibusque sex; ovario 1-ovulato. Borneo.

Anemone, or a Japanese Chrysanthemum, rather than of an Orchid; but, of course, the floral details and the foliage present not the slightest resemblance to either of the objects mentioned. M. Rodigas avails himself of the opportunity of giving a list of the known species. The species in question was introduced from Singapore as long ago as 1842, but it is well worth calling the attention of orchidists to its singularity. M. Rodigas, we note, derives the name *Cirrhopetalum* from the Greek *kippos*, in allusion to the tawny yellow colour of the flowers. We had supposed it to be from the Latin *cirrus*, a curl or lock, in allusion to the form of the flower-segments. If this latter be the true derivation, we ought to write *Cirropetalum*, though most people write "cirrus," overlooking the fact that *cirrus* is a Latin word of quite different signification from the Greek *kirros*.

VANDA TERES VAR.

A very pretty and delicately tinted form of this showy species comes from John T. Holmes, Esq., Beechen Cliff, Bath. Its chief peculiarity consists in the two lower sepals being pure white, and the upper one coloured rose and edged with white, and the broad petals light rosy-crimson. The lip is also peculiar in its marking. The plant bore two spikes and eighteen flowers, and it must have been an attractive-looking plant.

ODONTOGLOSSUM RAMOSISSIMUM.

Reichenbachia, t. 41.

DENDROBIUM PHALÆNOPSIS.

Originally described by Fitzgerald in our columns, 1880, ii., p. 38, and afterwards in his valuable publication on Australian Orchids. "To grow this magnificent species to perfection, much heat and light are necessary. A Pine-stove suits it admirably; it will also grow freely in a temperature suited to Crotons and Ixoras. It is indispensable for the production of an abundance of flowers that the pseudo-bulbs should be well ripened—hence light, heat, and air are the great and important factors in its cultivation. It is best grown in baskets or pans—in peat or sphagnum moss—and suspended in the highest and hottest part of the stove-house during its season of growth. When this is completed, the plant should be rested in a lower temperature, but never allowed to shrivel through dryness. In its native home, girt by the sea, and eternally washed by its spray, the plants attain a great size, and bear a prodigious number of flowers, often as many as six spikes on a single stem. They are never really dry for long. This would be impossible owing to the heavy night dews; but their principal growing time is when the rainy season sets in. It rains more or less every day for three months, the temperature all the time being very high. At the end of this time *Dendrobium Phalænopsis* has made growths between 3 and 4 feet in length, and as thick as a man's thumb." *Reichenbachia*, t. 42.

CYPRIPEDIUM HYBRIDUM MAYNARDI.

A hybrid from *Spicerianum* out of *purpuratum*, and intermediate in floral characters between its parents. *Reichenbachia*, t. 43.

C. HYBRIDUM POLLETTIANUM.

A hybrid, not to say a mongrel, *C. barbatum*, *C. insigne*, *C. venustum*, and *C. villosum*, all being concerned in its ancestry. Its immediate parents were *C. calophyllum* and *C. ænanthum superbum*. *Reichenbachia*, t. 43b.

ODONTOGLOSSUM NÆVIUM

has been confounded with *O. odoratum*, *O. gloriosum*, and one or two others, but may be readily distinguished by its pure white undulate segments covered with numerous purple spots and the yellow disc. What Lindley described as var. *majus* seems to be simply *O. odoratum* var. *album*. *Reichenbachia*, t. 44.

SECOND FLOWERING IN ONE YEAR OF CÆLOGYNE CRISTATA.

I have more than once seen letters from your correspondents, that they believed plants they had of *Cælogyne cristata* were about to flower for the second

time, but it was thought they had mistaken growths for flower-spikes. At this moment I have a small pan with several spikes well furnished with fine blooms. *H. J. Ross, Poggio Gherardo, Florence, July 11, 1892.*

RICHARDIAS.

THE two new yellow-flowered Callas which have recently attracted considerable attention, are likely to become popular garden plants, as they are large in flower, beautiful in colour, and apparently as easily cultivated as the common white Trumpet Lily. It may, therefore, be worth while to record now what can be learned about them, and also to point out the characteristic features of the several species of *Calla* already known, of one or the other of which the new yellow-flowered kinds are supposed by some to be merely varieties.

First, however, by way of starting correctly, we must cease to call these plants Callas, that name belonging properly to the *Calla palustris* of our ditches and ponds. The African Trumpet Lilies, Lilies of the Nile, Arum Lilies, or Callas are all *Richardias*, a name given to them long ago by Kunth, who with great propriety, as Sir William Hooker says, "separated the genus *Richardia* of the southern hemisphere from the genus *Calla* of Linnæus, peculiar to Europe and America in the northern hemisphere." Kunth substituted the name *Richardia africana* for *Calla æthiopica* for the plant which had been introduced into Europe from South Africa in 1687, when, according to Miller, it was sent to Commelyn. Miller cultivated it at Chelsea in 1731, and in 1805 a good figure of it was published in the *Botanical Magazine*, where it is described as bearing our milder winters, and as a plant "which, by management, may be made to show flower in almost any month in the year." We all know about this Aroid now. It is not easily killed, but it pays well for good treatment, which for this plant is almost what is needed to produce exhibition Celery, and it is one of the most beautiful and most decorative of all plants. It fills the ditches and narrow rivers of the Cape pretty much as our Arrowheads and Bull-rushes do here. I have seen spathe of it 10 inches long, and leaf-blades 18 inches by 10 inches. Recently, a variety of it called Little Gem, with leaves scarcely a foot high, and correspondingly short flower-stalks, has been introduced. A figure and description of it will be found in the *Gardeners' Chronicle*, December, 1890, p. 755.

R. albo-maculata was introduced from Natal, by Messrs. Backhouse, of York, in 1859, when a figure of it was published in the *Botanical Magazine*, t. 5140, from a plant which flowered in June. It has leaves often markedly sagittate, the blade variable in length, green, more or less marked with irregular oblong translucent spots, thinner in texture than *R. africana*, and with slender petioles. The spathe, too, is smaller, and much less expanded than in the older species, its usual size being 5 inches in length by 2 inches in breadth, and its colour is creamy-white, changing to green with age, with a blotch of purple at the base. The spadix is 2 inches long, and yellow.

R. hastata was introduced at the same time as the last-named, by Messrs. Veitch & Sons, of Chelsea, and others. It was figured in the *Botanical Magazine*, t. 5176 (1860), but before this it had been described by Dr. Lindley in the *Gardeners' Chronicle* (1859, p. 788), as "*Calla? oculata*," from specimens received by Messrs. Veitch from Natal in 1857, to whom it had been sent as "a yellow *Calla*, which from its smallness and beauty, and being also hardy, will be much prized." It was collected in Basutoland in 1861 by Cooper, and has been received at Kew from other parts of South Africa more recently. It has ovate hastate unspotted leaf-blades, a foot long, dull green in colour, with a long channelled petiole, which sometimes bears a few short soft hairs, especially when young. The spathe is from 2 to 5 inches long, comparatively broad at the base, where it is folded, the upper portion stiff, with an erect filiform tip. Its colour is a dull yellow, with a blotch of crimson at the base, seen only on the

inside; it changes to dirty green with age. There is a coloured plate of this species in *The Garden*, vol. xviii., p. 596 (1880), which represents the flowers of a much brighter shade of yellow than I have ever seen them.

R. melanoleuca was introduced from Natal in 1868 by Mr. W. Bull, of Chelsea, and figured in the following year in the *Botanical Magazine*, t. 5765. It has the habit and appearance of *R. albo-maculata*, but can always be distinguished from that species, even when not in flower, by its shorter leaf-stalks, bearing at the base scattered setiferous hairs. The leaf-blade is from 6 inches to a foot in length, oblong, or ovate-hastate, with a hair-like point, and spreading basal lobes; it is membranous in texture, dark green, with a few oblong semi-transparent white spots following the direction of the nerves. The spathe is 3 inches long, and broad, not folded over at the base, so that the whole length of the spadix, which is an inch long, is exposed. The spathe has a thin elongated point, recurved margins, and is pale straw-coloured, with a large vinous-purple blotch at the base. The leaf-stalks in this species are tinged at the base with red.

R. R-hmanni was described by Engler in 1883, and flowered for the first time in cultivation in the Cambridge Botanical Gardens in 1888. It was sent to Mr. Lynch by Mr. Adlam, from Natal, as *R. æthiopica rosea*, but there was no trace of rose in the spathe produced at Cambridge. It differs from all the other species in having a lanceolate, not sagittate or cordate leaf-blade, a foot long, and 2 inches wide. The spathe is 4 inches long, and like that of a very poor *R. africana*.

R. macrocarpa, also described by Engler, and said to be from the Transvaal, is represented with hastate leaves, and fruits nearly twice as large as in any of the other species.

We now come to the new ones. The first of these has been called *Calla Elliottiana*, in compliment to Captain Elliott, of Farnboro Park, Hampshire, who has exhibited it several times in London within the last three years. I have received the following information concerning the plant from Mr. Knight, gr. to Capt. Elliott, in reply to some enquiries I made with regard to this plant. He wrote, "Six years ago this spring I had six seeds given to me by the late Mrs. Elliott, who informed me that they were 'red Arums.' I sowed them, and out of the six only one grew. The first year it developed two unspotted leaves, the next year it produced a spotted leaf, and the third year it pushed up two leaves and a yellow spathe. I did not show it at the Drill Hall till the following spring (1890). From the first flower we obtained eighty-six seeds, from which we raised fifteen young plants, and the plants shown this year in flower were from this batch of seedlings. Last year the plants I showed were the parents (one an offset). The seedlings did not flower till this year, and as the plant came true from seed I did not trouble to keep seedlings and offsets separate, but until the former flowered I did. We took no care of the plant, and it was knocking about amongst odd plants for two seasons, as I thought after I saw the spotted foliage that it was only *albo-maculata*, although wider in leaf, and not so long. All the plants sold in London on June 17 last were raised by me from the one original plant first exhibited at the Drill Hall in 1890. The second year the plant produced sixty-eight seeds."

Whether this plant will prove to be a good species, or only a variety of *R. albo-maculata*, it is certainly distinct enough for garden purposes to bear a separate name. Its recent distribution by auction sale among nurserymen and others is certain to result in its soon becoming available for collections generally. But there is yet another yellow-flowered *Calla*, and moreover, one which, in the opinion of most people, is not only quite distinct from Captain Elliott's plant, but superior to it. This is *Calla Pentlandii*, which was shown in flower at the Drill Hall last month by R. Whyte, Esq., of Pentland House, Lee, and which was awarded a First-class Certificate. Mr. Whyte kindly informs me that he

"did not import the plant, but about two years ago a friend gave me six bulbs, and stated he hoped I might find a yellow flower amongst them. Two of these bloomed last year, but were poor, and only the ordinary type; another flowered this year, and it is the one recently shown as *C. Pentlandii*. I have another plant precisely similar in appearance to the latter; I hope it may flower soon and prove to be the same fine variety."

Mr. Whyte's plant has large dark-green wavy leaves, tinged with dull red at the base of the sheathing petioles, and an erect spathe as large as that of the ordinary *Richardia*, and similar to it in shape, but the colour is a rich Buttercup-yellow. It may prove to be a yellow-spathed variety of *R. africana*. A plant in flower with two small offsets from it, and a second plant as yet unflowered, were put up for sale by Messrs. Protheroe & Morris on the 22nd inst., but although ninety guineas was offered for them, they were not sold.

There are other "yellow *Callas*" in English collections beside the two which have flowered. I know of six which were brought from Africa by a traveller, who said he had obtained them as a special favour from a Basuto chief. I have also been told that some short time ago, a gentleman came from near Natal to offer thousands of them. Of course, these swans may be geese; but, with the plants of *R. Elliottiana* and *R. Pentlandii* to work from, it should not be difficult to make both of them as plentiful in a few years as the White Trumpet Arum is in England now. W. W.

FRUIT REGISTER.

APPLE CESKA POCHONTKA (*syn. Delices de Bohême*).

An excellent variety raised in Bohemia by Ed. Roche. It was raised from the Tyrolean Noble Red (*Edelrothen*), fertilised with the Alant Apple. The fruit is of medium size, still, it is one-half larger than the seed-bearer; the rind is shining, white, with yellow flames, and suffused with carmine and crimson; flesh white, of silky softness, shining, with an after-smack of Rosemary and Almond which is not to be found in any other Apple.

The habit of the tree is regular, and it bears every year enormously. This year the first grafts have been distributed.

NEW RED RASPBERRY APPLE.

This is a constant-bearing seedling form of the true red Bohemian Raspberry Apple, which is, particularly by ladies, prized before all others. The fruit is of medium size, rind entirely coloured of a lively crimson and dull red, greasy to the touch; flesh white, tender, of very mild, sweet, Raspberry-like flavour. The tree is a moderate grower, and a regular bearer. Season, December.

APPLE DOMNESCHTA, *syn. GENTLEMAN'S APPLE*.

A variety of Apple from Moldavia, and an exhibition fruit of the first quality, very large—width 4 inches, height 3½ inches—of aromatic flavour and good keeping properties. The tree lives to one hundred years, and forms a gigantic pyramid. In the Government of Kief, where the frost reaches 13° below zero Fahrenheit, this variety suffers no injury; it is, therefore, well adapted for planting in cold and mountainous districts.

APPLE BIELA BORODOWKA.

This Russian variety exceeds the Domneschta in size, and is one of the best of the Russian Apples. The tree is an upright grower, has foliage of a deep green colour, and the fruit, which ripens in September, is light yellow, and on the sunny side suffused with rose colour, and striped with red. The fruits weigh sometimes 1½ Russian pounds. It is a first-rate market fruit, much in request in Podolia, a district famous for its fruits. The tree bears well every year, and is capable of withstanding great cold. *Wiener Illustrierte Garten Zeitung*.

THE MUTUAL INFLUENCE OF THE STOCK AND THE GRAFT.

In the report of the Michigan Horticultural Society for 1891, Mr. A. A. Crozier has a most instructive paper on this subject. He collects together most of the opinions which have been published, together with the evidence upon which these opinions are based. As a rule, the observations here put on record have not been based on direct experiment undertaken for the particular purpose of determining the modifying influence of either the stock or the graft. Many of the statements are contradictory, and much of the testimony has to be rejected. Some of the changes said to have been observed are plainly imaginary, and Mr. Crozier has allowed them to appear simply to show what beliefs have been held. Careful and well-directed experiment will, of course, be necessary before the points involved are settled, and we are pleased to observe that Mr. Crozier himself promises to conduct some of these trials. But, although this evidence reported is not all of very serious value, there are altogether forty pages of quotations published, and a careful examination of them gives abundant proof that both stock and graft do influence each other's growth in very many ways, and Mr. Crozier gives the following conclusions which he has deduced from a careful study of the existing evidence:—

Size and vigour.—The stock and graft each imparts to the other something of its own degree of vigour or lack of vigour. This influence is greater the first year or two than afterward. If the difference in vigour is great, both stock and graft may ultimately perish. The dwarfing, which in certain cases results from grafting does not always arise from a diminished supply of food, but often indirectly from earlier and more abundant fruitfulness.

Form.—The alterations in the forms of trees, as the result of grafting, arise mainly from increased or diminished vigour. This probably applies also to alterations in the form of the roots, vigorous roots having larger, longer and fewer branches than feeble ones. Many of the observed changes, however, in the form of the roots of grafted trees, are probably due to the trees having rooted from the graft. The observed changes in the form of the fruit of the graft, causing it to resemble that of the stock, are as yet too few to be considered other than quite accidental.

Fruitfulness.—The most important of all the results of grafting is increased fruitfulness. This is brought about (1) by the mere process of grafting, which operates in the same manner as a ligature, or the removal of a ring of bark; (2) by diminished vigour through defective nourishment from a feeble stock; (3) by increased vigour imparted by vigorous stocks to varieties which are naturally too feeble to bear heavily.

Precocity.—Earlier, as well as more abundant, fruiting is induced by the act of grafting; also by diminished vigour due to dwarf or feeble stocks. The precocity of trees on dwarf stocks is not, however, always directly due to diminished vigour, but largely to the habit of early bearing imparted to the graft by the stock in a manner not fully understood. Probably the diminished supply of sap derived from dwarf or feeble stocks, and its consequent richer character, is an important factor in inducing the earlier and more abundant fruitfulness.

Season of Growth and Maturity.—The stock and the graft each modifies the period of vegetation of the other when their normal times of beginning or closing their season's growth are different. Thus a late variety grafted upon an early stock begins and ends its season's growth earlier than it otherwise would. This alteration in habit appears in some cases to affect the time of ripening of the fruit.

Hardiness.—There is some evidence that hardy stocks increase the hardiness of the grafts. This, however, does not appear to be by the transfer of any inherent hardiness peculiar to the variety, but to result from the increased or diminished vigour in certain cases, or an earlier maturity in varieties

which, upon their own roots, are inclined to grow too late in the season. The advantage usually sought in hardy stocks is to furnish hardy stems able to resist injury to the bark by sun-scald, &c., and to supply roots of uniform hardness in place of those of ordinary seedlings which are frequently less hardy

could not live if upon their own roots." There is in this fact no evidence that the character of either stock or graft is modified. In some cases, however, the demands of a vigorous or fruitful graft may render the roots of the stock more exacting as to soil, so that they require one which is more fertile

yellow Carrots; (2) by earlier or later maturity, earlier maturity inducing more heightened colour; (3) by the restoration of normal nutrition to a "variegated" stock or scion; (4) by the transfer to a healthy stock of the disease known as variegation. There is little evidence that the characteristic colour of fruits is modified by grafting.

Flavour.—The testimony is abundant that fruits may acquire the flavour of the fruit of the stocks on which they are grafted; this has been especially noticed in the case of sour Apples grafted upon sweet varieties. Other modifications in the flavour and texture of the fruit have been noticed which do not cause them to resemble the fruits of the stock. The operation of grafting itself often causes the fruit to be larger and more succulent, and to ripen earlier; this latter change, when it causes more perfect ripening, improves the flavour. We can say that certain stocks improve the flavour of fruit borne by the graft, while others deteriorate it, and that it is probable that stocks bearing highly flavoured fruits intensify the flavour of the fruit borne by the graft, while stocks bearing fruits which are sweet or mild in quality diminish it; but, notwithstanding the abundant testimony to this end, direct and careful experiments are needed.

Disease.—The evidence is conclusive that certain diseases may be conveyed from stock to graft, and *vice versa*. This applies not only to diseases caused by parasitic fungi, but also to the peculiar form of malnutrition known as variegation. It will be observed that nearly all the best-established changes which are noted are due to altered nutrition, and though they sometimes cause the stock and graft each to acquire some of the features of the other, these alterations extend mainly to such points as vigour, colour, and period of vegetation, and in no case can they be considered to be of the nature of hybridism. *Garden and Forest.*

COMMERSION.

The story of Philibert Commerson, Botanist and Traveller, and Jeanne Baré (1727—1773).

(Continued from p. 90.)

Meantime, Commerson had prepared and forwarded to the Minister of Marine a general programme of the observations in natural history, which he recommended as possible to be made during the forthcoming expedition to the Austral regions, from which so much was expected.

This report was so complete and so well and fully thought out, that copies were preserved in order to serve as guides to future expeditions for similar explorations.

The expedition set sail from Saint Nazaire early in 1767, and in the month of May following the ships arrived at Montevideo. Commerson next explored the neighbourhood of Rio Janeiro and Buenos Ayres. In these localities he remained collecting for three months, and then he proceeded to the Falkland Islands, *Les îles Malouines*, as they were known to the French at that time. Subsequently the expedition visited Patagonia, Tierra del Fuego, and the Straits of Magellan.

Commerson's observations proved that the Patagonians were not a people of giants, as some navigators, who had only seen them at a distance, had reported in their exaggerated accounts. He, nevertheless, confirmed the statement that their stature was above the ordinary average.

The expedition next visited the islands of the Southern Pacific, and made some stay at Tahiti, of which island Commerson sent a detailed description to his friend Lslande in a letter, which that savant published in the *Mercure de France* of October, 1769. The description differs somewhat from that published by Bougainville.

Meantime, Commerson had been excessively pleased by the exemplary conduct of his faithful servant Jean Baré, who had so zealously and devotedly attached himself to him. This youth was a very model of an obedient, hard-working, good-tempered servant, obliging and sympathetic to that

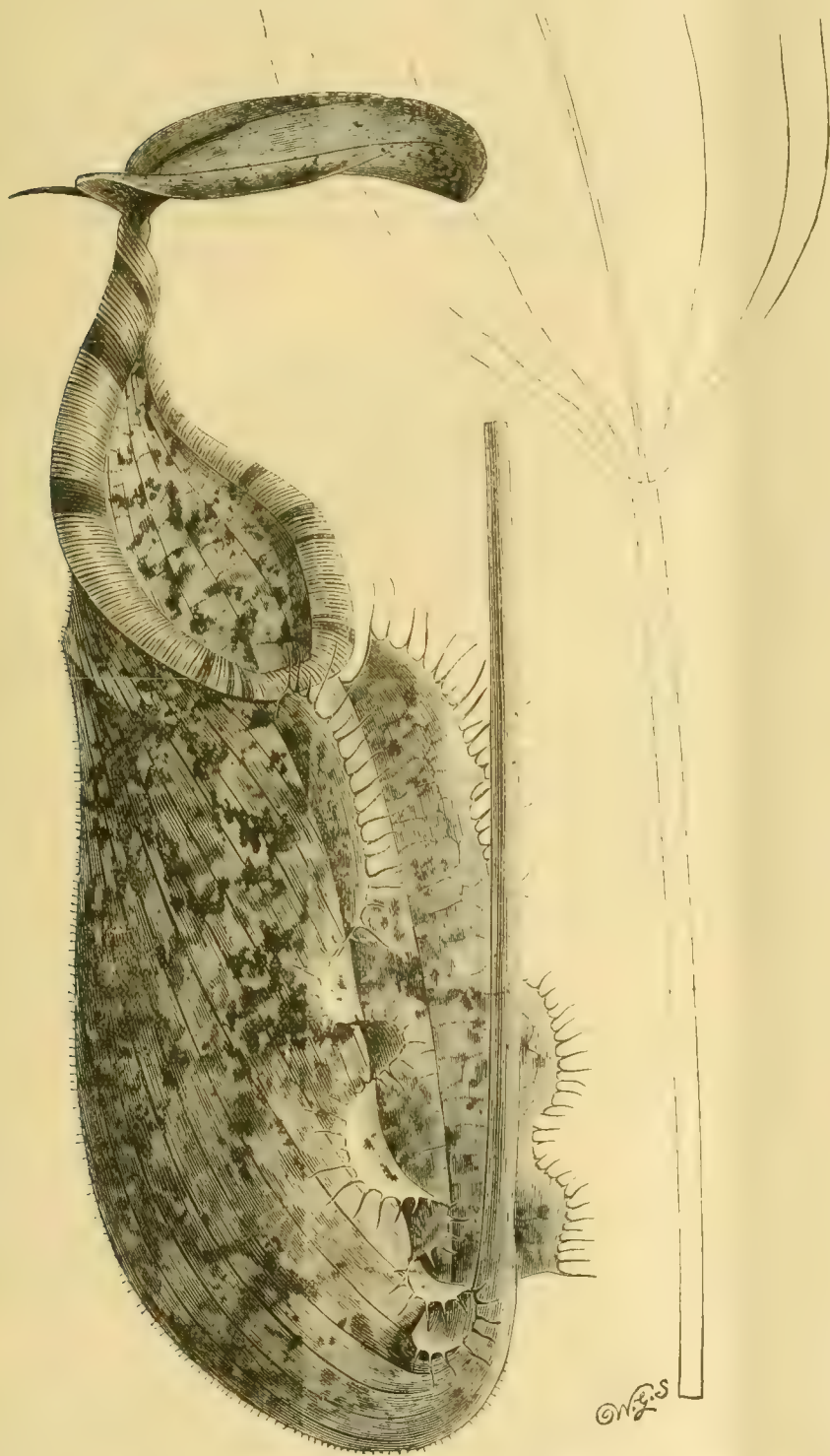


FIG. 19.—NEPENTHES INTERMEDIA: PITCHERS GREEN-COLOURED, WITH DARK-RED SPOTS. (SEE P. 139.)

than those of most cultivated varieties. Conversely, a hardy graft has been known to increase the hardness of the stock, but known examples of this are rare, and usually no such influence can be observed.

Adaptation to Soil.—"Favoured by the influence of the stock, many species are able to thrive in unfavourable soils, and often in those in which they

or of more definite character in which to maintain in health the grafted tree than would be required for a tree of the same kind as the stock growing in its natural state.

Colour.—An alteration in colour, as the result of grafting, may occur (1) by the direct transfer of colouring matter, as in the example of the white and

extent, that it is even said the animals on board showed a marked preference for him. He was never for a moment ill-tempered, never impatient, and what was remarkable among the Breton sailors, his rougher comrades, never made use of either an oath or any coarse language or expression. His amiability showed itself not only to his master but to all on board, and he was a general favourite. Everywhere he followed his master, and partook of his hard fare and fatigues in long journeys through the jungles, woods, and mountains of the tropics. Even in the Straits of Magellan, in the midst of the inclement weather, snows, and icy mountain tracks, this zealous servitor carried with hardihood and incomparable fortitude his master's scientific apparatus, and the collections which he gathered on the way, his guns, and the game he shot. He started off, and always arrived back so heavily laden that the crew and officers nicknamed him the "beast of burden." His task was not confined either to this bodily labour. Commerson luckily found in Baret a most adept assistant, and a quick pupil, eminently skilful in his practical knowledge of natural history. All the branches and nice details of that science became rapidly familiar to him. The rapid progress which he made, acquiring the facts in this science, and the extraordinary development of his intellectual faculty in assimilating knowledge, and in applying his master's methods of practice, which, of course, were perfectly novel to the young tyro, was constantly a subject of astonishment on board ship.

Everything prospered, and affairs progressed most smoothly for Commerson, thanks to the ready wit and apt obedience and cleverness of his young pupil and assistant. Commerson was saved an infinity of trouble, and learnt to depend upon his faithful companion and young friend, for he was more friend than servant. In this happy manner the expedition proceeded, the topographical features were surveyed and sketched by Bougainville and his officers, whilst Commerson and Baret reaped a rich harvest of natural objects for their unique collection.

One fine morning when the wooded peaks of Tahiti, off which the "Boudeuse" and the "Etoile" were anchored, were reflecting the early morning rays of a tropical sun, Bougainville, several of his staff, with Commerson, and, of course, the faithful Baret, landed. No skilled botanist had ever to their knowledge landed before on this lonely island. Undreamt-of discoveries lay hidden within those tempting forests and valleys under the volcanic mountains of the Queen of the Pacific islands. The natives, friendly and joyous, trooped to meet their exotic visitors, eager to entertain them with every possible hospitality. Bougainville and his followers were charmed by this amiable reception, and everything promised a happy day. Alas! it proved anything but a happy day for one, if not for two, individuals.

Whilst the European tanned sailors, after their long sea voyage, gazed with admiration and contentment at the various strange and rare sights before them, the people, their houses, boats and implements, their clothing and festive garlands of flowers, their innocent and confiding demeanour, the foliage of the plants and trees, &c.; in like manner the natives were taking in with keen observant eyes every detail of face, dress, and arms of their strange visitors from distant unheard-of countries.

All of a sudden, shouts of laughter and derision arose from a group of natives which caused Bougainville and Commerson to turn round in some wonder at the slight tumult in the crowd behind them. To Commerson's infinite surprise, he saw his servant Jean Baret in the hands of a number of inquisitive native women and girls, who, without intending any offensive rudeness, surrounded the frightened lad, and expressed by their unmistakable gestures their discovery that the seeming sailor-boy in reality was one of their own sex, and they claimed her as their companion apart from the men.

Poor Baret, wholly and suddenly taken by surprise, blushing and in tears at the inconvenient discovery,

broke away from her jesting surroundings, and threw herself at the feet of Bougainville and Commerson in an agony of shamefacedness and terror at her exposure, &c., the consequences which she could not foresee. The young woman then confessed to Bougainville and Commerson, imploring their pardon for her deceit. She stated that her real name was Jeanne Baré, that she had been born in Bourgoyne, and had been fairly educated, but was left an orphan with means—of which, however, she was deprived by a law suit—and without friends. As a friendless young woman in the streets of Rochefort, she had no chance of gaining a livelihood in any method at all consonant with her ideas of happiness. Always of an adventurous disposition, she had often as a girl, longed to visit the scenes in foreign countries of which she had read such fascinating accounts; and would, but for the loss of all her modest fortune. The only chance for her was to disguise herself in man's clothes; and accordingly she made up her mind to crop her hair short, and dressing herself in male costume had offered herself as servant to M. Commerson.

Bougainville, Commerson, and the officers were dumbfounded, whilst the crews were astonished as well as amused, and doubtless many witticisms and sarcastic references were made by the rougher mariners before the mast, but the commander and the botanist were equal to the occasion. Mdlle. Jeanne Baré was assigned a special cabin on board, and every respect and courtesy paid to her in her new character. Of course, it was impossible for her to resume suitable garments until they reached more civilised quarters of the world; but meantime everybody felt how blind they must all have been not to have noticed the peculiarities of this marine Rosalind, and possibly more than one was wise after the event, and remembered how he had always had his suspicions that Jean Baret was really a woman in disguise.

Poor Commerson was also greatly to be pitied, for the discovery placed him in rather an awkward situation. Fortunately, he was always so single-minded, so frank and honest in all his relations with his servant, that no one could dream of imagining that he had connived at the strategic deception which the *ci-devant* Jean Baret had practised. He now manifested a great pity for the poor woman who had confided herself so devotedly to his protection; and, whilst his regard and respect for her was redoubled, he was careful that she should no longer be treated by him as a beast of burden (*bête de somme*); but he still continued to derive benefit from her assistance in the preparation of objects for his collection, and especially of plants, for his enormous and unique herbarium. He now understood how superior her supple hands and lithesome fingers were for many delicate manipulations of tender objects, to the rougher handling which most ship's stewards would have subjected his lovely fronds and petals of valuable specimens.

This strange *dénouement*, which thus came on all like a thunderclap in a clear sky, did not prevent Commerson from pursuing his botanical researches in the fertile island of Tahiti; nor did it prevent his indefatigable assistant from continuing to follow in his footsteps, and from sharing his privations and his botanical triumphs; only now Commerson took good care that a stalwart marine servant should be told off to accompany the pair, in order both to bear the burdens, under which Jean Baret had formerly staggered, and also to prevent any inconvenient *tête-à-tête*—in fact, to act as chaperon to Jeanne Baré. *S. P. O.*

(To be continued.)

STREPTOCARPUS.

SOME very pretty cross-bred *Streptocarpus* are at the present time to be seen at Messrs. J. Veitch & Son's Nursery, Chelsea. The plants, which have been planted out in cold frames, were raised from seed sown in December last, have made robust growth, and great progress, considering their age, much more indeed than *Gloxinias* would do in the same period

of time. During the winter no more heat was employed than would keep out frost.

It has been the object of the hybridiser, Mr. Heal, to obtain fresh strains of colour that shall be brighter than that of the first cross-bred *Streptocarpus*, raised at the Royal Gardens, Kew, and at Chelsea, and in this respect, as well as the increased size of the flowers, and variety of the markings of the same, great improvements are evident.

Among the colours may be noted pure white, white with violet lines, magenta with dark crimson spotting, and markings in the throat; mauve, purplish-crimson, light and dark blue, &c. So lasting are they, that the specimens which were so much admired at the Temple Show in May are still well furnished with flowers, and are expected to continue to bloom until autumn. When it is considered that these plants are of the simplest possible culture, it may readily be expected that they will be as largely grown in future as the favourite Chinese *Primula*.

WEST INDIES.

SCHOMBURGKIA HUMBOLDTII.

THIS fine *Lælia*-like *Schomburgkia* is now (March 21) flowering with us. It is growing upon two trees—*Myrospermum frutescens*—in our nursery, where, to all appearance, it is quite at home. The rhizomes are many feet in length, alternated on either side with sessile, channelled, fusiform, hollow pseudobulbs, the latter bearing usually three very stiff leathery leaves of an oval or oblong shape. At the base of the pseudobulbs grow the roots in tufts, which attach themselves very firmly to the bark of the tree, and at their apices are produced the inflorescences which measure 5 feet in length, as shown by the specimens these notes are taken from. The greatest circumference of the pseudobulbs, which lie near the base, is 5½ inches, and the length 10 inches. Towards the upper extremities of the flower-stems are produced the flowers, numbering, all told, about twenty; that is, counting the expanded with the unexpanded ones, but as only about five or six open at the same time and fade shortly afterwards, the effect is not so striking as what it would be if all opened at the same time. The fragrant flowers commence to expand from the bottom; in colour they are lilac, with the lip lilac-purple, and fimbriated.

During the past three years and a-half, this species has proved to be a very shy flowerer, although otherwise a rapid grower, and now only three scapes are produced, each from separate pseudobulbs. By referring to Veitch's excellent *Manual of Orchidaceous Plants*, it will be observed that *S. Humboldtii* was "discovered by Humboldt and Bonpland in the beginning of the present century near Puerto Caballo, in Venezuela, and subsequently gathered by Wagner in the same locality." Our plants have been left entirely to Nature for their welfare, being subjected to no artificial treatment whatever, whether with regard to water or otherwise.

Flowering at the same time as this is another *Schomburgkia* frequently met in a wild state in our Trinidad woods, viz., *S. undulata*.

EUCHARIS GRANDIFLORA (AMAZONICA).

During the month of February several tubs of this much-admired "Lily" were in flower at the the Trinidad Botanic Gardens. We had placed the bulbs in large size tubs about two years since, previous to which they were growing in open spots about the gardens. Throughout the first year, after being re-tubbed, fine healthy leaves only were produced, followed this year with many scores of scapes, each scape bearing several flowers. The compost used for growing them in consisted of the ordinary potting material—loam, leaf-mould, manure, and sand, and the position in which they grew was one partly shaded from the sun. Such masses of *Eucharis* flowers were, as a matter of fact, greatly appreciated by all who saw them. Taberoses are also flowering freely (March), but these grow in beds specially prepared for them. *W. E. Broadway, Trinidad.*

VINES, AND VINE CULTURE.*

WE are glad to welcome a third edition of this book, the most comprehensive of its kind. The general plan of Mr. Barron's book is now so well known, that we need not further allude to it; but we may advantageously allude to one or two new features which distinguish the present edition from those which preceded it. Thus, in the chapter on Vine diseases, an account is given of the peculiar affection first noted in Mr. Blackmore's vineries, and which has received from that gentleman the name of diptheritis, or lorification, the parts affected assuming ere long the consistency of leather, and finally that of wire.

"The first symptom is a contraction of the margin of the half-grown foliage till the leaf becomes like a cup inverted, then the stem loses its crisp, clear substance, goes dull, and is channelled with lines of shrinkage; the tips of the shoots become flat and flaccid, all the gloss is lost, and the vigour gone;

We presume this latter statement simply means that red-spider was discovered on the shoots, for the appearances are not those usually produced by that arachnid. The mere cursory inspection of a diseased shoot is by no means adequate in such a case as this. The prolonged and careful examination by an expert provided with all modern appliances, and familiar with all modern methods of research, is required before any definite opinion can be formed as to the cause of the disease. Meanwhile, treatment must be purely empirical and tentative. If we remember rightly, the treatment adopted by Mr. Blackmore was one which would favour the development of fungi, and so far this affords evidence that the disease was not caused by those agents. Eliminating other sources of disease as all more or less improbable, in this instance there remain those refuges for the ignorant—bacteria. We would suggest that an examination be made to see whether these creatures are existent in the diseased Vines, and whether the disease can be produced by the artificial

the same treatment. Houses erected for Grapes are at first cropped with Tomatos, which, producing an immediate return, help the growers to tide over the first two or three years whilst the Vines are getting established." As an indication of the extension of Grape culture, it may be noted that on one day in October, 1891, 4 tons, equal to 750 baskets, of Grapes were sold in Covent Garden.

If we enquire where all these Grapes come from, we find that one firm alone in the vicinity of London has 25 acres covered with glass, and devoted to Grape-culture, yielding, on the average, 300 tons per annum, which at 2s. per pound, produces a gross return per acre of £3360. Messrs. Rochford, to whose establishment these figures refer, have not one or two, but many competitors round London, while very large supplies come from Worthing, Southern Scotland, and the Channel Islands. From Guernsey, in 1886, 500 tons were sent to Covent Garden, a quantity considerably increased since then, and supplemented by large supplies forwarded direct to

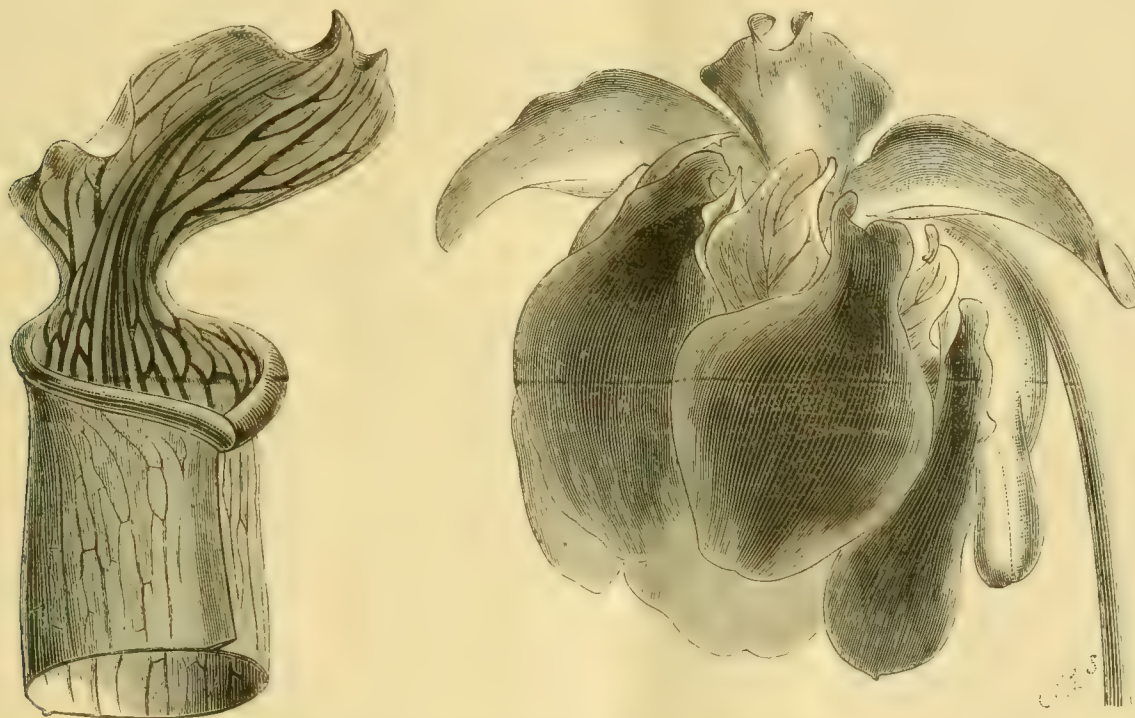


FIG 20—SARRACENIA POPEI X: PETALS, VELVETY CRIMSON, WITH YELLOW EDGES. (SEE P. 139.)

and the disease descends from leaf to leaf until the whole tissue is hardened, and the young wood becomes of a dirty black tint. The growth of the season is stopped, and the main stem, instead of gaining in bulk, is lessened. Young Vines alone, so far as our present knowledge goes, are affected by this disorder; but they seem to take it alike, whether grown in pots or planted in their places. The roots appear to be perfectly healthy, the growth is robust and vigorous; the house has been managed as usual, there are no cold draughts or sudden changes, defects, or excesses of temperature; but suddenly this disease appears, and Vine after Vine is afflicted. This mainly is contagious, or at any rate, epidemic; the symptoms seem to be distinct from all the recognised forms of mildew, and cannot be checked by the use of sulphur—yet further investigation may prove that it is of fungoid origin. Some Vine shoots suffering from this complaint were brought before the Scientific Committee of the Royal Horticultural Society about three years since, and that learned body attributed the mischief to red-spider."

transference of these bodies to a healthy Vine. A department of Vegetable Pathology, such as exists in America, in France, and in Germany, is one of the great wants of our country. For reasons already assigned, the investigation of these obscure maladies by any but trained specialists is becoming less and less useful. In the meanwhile, we may mention that we have so far only seen the particular disease which suggested these remarks on Mr. Blackmore's Vines, and in one Vine at Chiswick.

In dealing with the Phylloxera at Chiswick, the method suggested by the Scientific Committee was successfully carried out. "The house being closely shut up, sulphur was burnt until every plant was killed by the burning fumes, then the plants were burned, and every bit of soil, also the drainage, carted away, and the whole of the frame-work of the house repainted; this proved absolutely successful, and has been followed by others with equal success."

In the chapter on commercial Grape growing, it is shown how enormously the production of Grapes for market has increased. Mr. Barron attributes this in part to the introduction of late-keeping Grapes, and partly, "chiefly," he says, to the extension of the demand for Tomatos. "Both crops requiring much

the large provincial towns. It is the large growers who have the business in their own hands, the returns for small quantities being barely sufficient to pay expenses. We hear so much of American and colonial competition in the matter of fruits, that it is satisfactory to learn that a great trade in English winter Grapes seems likely to be established with America. The Grapes travel well, arrive in good condition, and prove of superior quality to American produce during the winter season.

Mr. Barron's book, then, is not only important as the record of the experience of a long-tried cultivator of acknowledged high repute, but it furnishes incidental evidence of the important position which horticulture now occupies in the commerce of the country.

THE GYPSY-MOTH.

ONE of the most destructive insects on record is the gypsy-moth (*Ocnerna dispar*) which for the last three or four years has been devastating large areas. It has been found in more than twenty townships in Massachusetts, embracing a territory of 200 square miles. With characteristic energy and thoughtful

* *Vines, and Vine Culture*, by A. F. Barron. *Journal of Horticulture*, 171, Fleet Street.

system in the presence of a public evil, the old Bay State established a commission of capable men—experts and practical workers—and equipped them with ample means (50,000 dols.) for fighting the pest; an example which might well be followed in other States.

Their efforts were so well directed, that the spread of the gypsy-moth seems to have been effectually checked. When the caterpillars appeared, a large force of men and teams was employed to spray the trees infested, with Paris Green and other mixtures. Thirty teams with large spraying outfits were in use. To prevent the transportation of caterpillars by teams, a large force of police was employed to guard the roads leading from the infested territory; but it was found impossible to make their work effective, and a code of rules was adopted, which we epitomize:—

All persons were forbidden by law to remove the gypsy-moth, its nests or eggs, from one place to another, in any city or town, and requested to exercise care against so transporting the gypsy-moth on teams and carriages.

All persons were forbidden to remove any hay, manure, wood, bark, trees, rags, lumber or shrubbery of any kind, without a written permit from the department. All loads must be covered with canvas.

All vehicles leaving the district might be stopped and delayed until their contents were inspected.

No person might remove the bark from trees, nor attempt to scrape and clean them, without first notifying the department, and having said trees thoroughly inspected, and, if found infested, cleaned under its direction.

Owners or tenants were requested to gather and burn all rubbish and useless material upon their premises that might provide nesting-places for the insect, and to fill with cement or other solid material holes in trees upon their premises.

Windows of houses were protected by screens during the summer months, as the insect lays its eggs in the houses wherever it can gain admittance.

Fences and buildings could be torn down if necessary, and the owners were to be recompensed by the State.

When spraying ceased, every effort was made to destroy the creatures during the short time they remained in the pupa and moth stages. The men were then set to gathering and destroying eggs. An effort was made by the men employed to go systematically over the entire infested territory, gathering and destroying the eggs of the moth. The progress was necessarily slow, as every tree, shrub, wall, fence, pig-pen, hen-house, shed, and even the dwelling-houses and barns in the most thickly-infested territory, had to be carefully examined by the men, and afterwards inspected by the most expert among them. Old stone walls were burned out by the use of crude petroleum. The oil was forced among the stones in the form of a spray by the use of pumps and spraying-nozzles. Large tracts of land covered with brush were burned over, after the brush had been cut and sprayed with petroleum, and in some cases woodland was cut and burned over after the wood worth saving had been examined and removed. Wherever worthless hollow trees were found infested, they were felled and burned. In this way vast numbers of moths and their eggs were destroyed during the season.

As it was observed early in the campaign that the distribution of the caterpillars was effected largely by their falling from the trees upon teams, an effort was made to destroy all eggs upon trees on or near the highways. Before the hatching of the eggs many large street-trees were banded with strips of tarred paper as a means of protecting them from the gypsy-moth and canker-worm. This remedy proved very effective. Great numbers of eggs had been deposited on buildings, fences, and other objects near the trees. As soon as the young caterpillars left the eggs, instinct led them to the trees, and, as they crawled upward to find food, many were entangled in the cotton-waste under the tarred paper and perished.

Paris Green gave better results than any other mixture. When it was properly applied to plants, all newly-batched caterpillars that were fed upon them died within a few days. Glucose was added to the mixture to retain the poison upon the foliage.

The work carried on last season was so effective that all large colonies of the moth were destroyed. Where in past seasons the trees bore neither leaves

nor fruit, last year a good crop was realised. Where last season thousands of eggs were seen upon the trees, now very few can be found. There is still a large area in which the eggs have not been destroyed. This will have attention during the present season. The above-cited Massachusetts experience outlines the methods necessary to destroy this pest, so no time need be wasted in experimenting. The great importance of concerted action may also be noticed. *American Gardening.*

NOTICES OF BOOKS.

THE RESCUE OF AN OLD PLACE. By Mary Caroline Robbins. (Houghton, Mifflin & Co., Cambridge, Mass., U.S.A.)

This is a pleasantly-written book (first published in chapters in *Garden and Forest*), and which describes, as the title suggests, the gradual transformation of a long-neglected farm in Massachusetts to neatness and fertility. The patient work expended on the place was in time rewarded, and it is really tempting to read about the re-claimed salt-meadow, the orchard, the shady Pines and Willows, which were at last established round the home. The hard struggles with weeds, web-worms, chafers, and other vegetable and animal foes, are related with much spirit, and the volume before us should take a high place in the class of literature to which it belongs. It is attractively got up on good paper (with very wide margins), well printed, and strongly bound.

A HISTORY OF HAMPSHIRE, INCLUDING THE ISLE OF WIGHT.

Mr. T. W. Shore's work under this title published by Elliot Stock, 62, Paternoster Row, may be recommended to those visitors to the coast to whose intellects a band and a march up and down the parade do not furnish quite sufficient interest.

The author shows how the history of the county has been, and is still, dependent on its physical features. These are only indicated, but in successive chapters, the author treats of Hampshire in pre-historic times, in the time of the Celts and Belgæ, and subsequently in that of the Romans. With the advent of the Saxons direct evidence takes the place of indirect, and Mr. Shore gives a brief summary of the history of the county in those early days. Then came the Danes, followed by the Normans, so that the history of the county is traced down to the time of the great Charter. In subsequent chapters the author deals with the local and social features of the county, and the influence of the religious orders. The manorial system, its rise and decay, forms the subject of an interesting chapter, and it is recorded how the ancient system of local administration is passing away. In one instance, the court met, found as usual, nothing to do, but also found no dinner provided. The meeting dispersed, and the court has not since been held. "Thus ingloriously," says the author, "has perished one, if not more of the ancient courts of Hampshire, which had met annually for, perhaps, a thousand years, and which under the ancient condition of rural life had no doubt often safeguarded the rights of the inferior tenants."

Special sections are devoted to the Isle of Wight, and to the principal towns, such as Winchester, Southampton, Portsmouth, and Basingstoke. Detailed criticism of such a book is out of place in these columns, but in indicating the nature of its contents we have at least shown how great, and how varied are the sources of interest attaching to them, and we may now add, how great has been the skill of the author in arranging his manifold material.

VEGETABLES.

CARTER'S "DAISY" PEA.

AFTER a second year's trial, my opinion of this new dwarf Pea is much strengthened. It is the largest-podded dwarf Pea with which I am acquainted,

the pods this year being nearly as large as those of Telephone growing on the same quarter, and each one opened contained ten good-sized Peas of a pale green colour, and excellent quality. It is a second-early, and a prodigious cropper, and owing to its being of a dwarf habit, it should find favour with those persons who experience difficulty in procuring tall Pea sticks. This Pea is said to attain, in average soils and seasons, to a height of 12 to 15 inches, but in liberally-manured trenched ground, and heavily mulched, the haulm is a few inches higher. *H. W. Ward.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

EUCHARIS AMAZONICA.—Few plants are so useful as the several species of *Eucharis* grown in gardens, and especially the one that heads this note. With a sufficient number of the plants in the possession of the gardener, blooms may be obtained during the greater part of the year. Any pots full of roots which have recently flowered, and are again required to bloom towards the end of the present year, should now be induced to make vigorous growth. The most suitable temperature at this season is an intermediate one, and when the weather is favourable, allow the plants plenty of air, and avoid an atmosphere that is over-moist. Plants which have attained only a moderate size, and are in want of more root space, should be put into larger pots, which may be done at any time, as the only disturbance of the root will be the removing of the old drainage. When it is wished to divide large specimens, perhaps spring is the best time for the operation, but no hard and fast rule may be laid down; and the best time is when the leaves have attained to their full size, and are fully matured, and the plants have been at rest for some little time. During the operation, great care should be taken to break the roots as little as possible, and the most expeditious way to divide the bulbs, is to turn the specimens out of the pots, then plunge the ball into a tub of tepid water, afterwards working away all the soil from between the roots, and very little harm will result to the roots. As they delight in rather a shady situation, avoid exposing them to too much light, especially for a time. Mealy-bug is very partial to this plant, and it is necessary to frequently examine them, when the leaves should be thoroughly sponged.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

THE MEXICAN-HOUSE.—The flower-spikes of our *Vanda cœrulea* are now growing apace in a warm and light position in the Mexican-house, which is allowed to be highly warmed by sun-heat, and air circulates freely by day, the night temperature falling at times to 55°. The plants are freely syringed every evening like the other inmates of the house, and the amount of air admitted is then reduced, provided the weather has been bright. That this treatment is a suitable one is proved by the activity of the roots, the sturdy flower-spikes, and the absence of spots on the leaves, which are sometimes observed when *Vanda cœrulea* is cultivated in an ill-ventilated, warm, or shady place. By the side of *Vanda cœrulea* I have made room for *V. Amesiana*, our plants having failed to grow satisfactorily in the cool or intermediate-houses, the leaves slowly but surely decaying from the apex downwards, but in the sunshine and buoyant atmosphere of the Mexican-house this mischief was arrested, and the plants seem to be at home. *Vanda Kimballiana* still flourishes, suspended near the roof-glass of the cool-house, and we still keep them there. The flower-spikes of both of these species are now showing.

THE DENDROBIUM-HOUSE.—Some of the earliest of the *Dendrobiums*, as *D. Wardianum* and *D. crassinode*, were finishing up the new pseudobulbs, and at this stage their removal to a cooler and more airy house is advisable, such as the Mexican-house affords. Here they should remain for a few weeks longer, that is until the tops of the new pseudobulbs are completely formed, when still more cool and airy quarters, as for instance, a vinery or Peach-house, where the Vines, &c., are resting. *Dendrobium Ainsworthii* and *D. nobile* frequently start into

growth a second time; the growth proceeding from the base of the newly-made pseudobulb before its growth is quite matured, which is not desirable in any *Dendrobium*; but in the case of the two named, no alarm need be felt, for if the plants which behave in this manner are kept actively growing till the principal pseudobulbs are matured, the resting period that will follow will soon put a stop to all further growth, and the secondary growths will form short pseudobulbs.

THE SHOW-HOUSE.—The flowers of *Oncidium Schillerianum* are not large, and they are not showy, the colours being merely two shades of yellow marked with light brown; but when flower-spikes fully 3 yards in length, bearing flowers its entire length, on small branches about 2 inches apart, are seen trailing over other plants, they present a striking picture of beauty. *O. longipes* is a pretty, compact Orchid, and free-flowering, that should be grown in the intermediate-house in clumps in shallow pans or baskets, as may *O. Curtisii*, which is now in flower. *Epidendrum nemorale* is a light and graceful Orchid, which, if arranged with other Orchids in bloom, is very effective. Some of our plants of *Epidendrum vitellinum majus* have been growing in the coolest-house, and some others in the Masdevallia-house, and in point of strength the latter are the better, many of the flower-spikes having from twenty to twenty-five flowers each. *Lycaste Skinneri nivalis* is a small, neat-growing plant, of about half the size of a typical *Skinneri*, and very free to flower—in fact, it is in flower for six months. *Lycaste aromatica* is very desirable at this part of the season, and both this and *L. Skinneri nivalis* are at home in the intermediate-house; but in order to flower *L. aromatica* well, it should have a long period of rest near the light. Then there are the *Cattleya Gaskelliana* in variety, *C. gigas*, and *C. eldorado*, and some other Orchids in flower, which make this house very enjoyable.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

WINTER CROPS AND CROPPING.—The planting of winter vegetables should be proceeded with rapidly on ground that was cropped with early varieties of Potatoes, which are now being cleared off; previous to planting, having the ground cleaned of weeds and rubbish, and particularly of all Potatoes, even the smallest. In large gardens, it is desirable to leave as much of the land uncropped and fallow as can be spared, so that it may be got into thorough condition for next season; and the present is the time when it can be best determined what ground shall be left fallow. Deep digging and manuring can be better carried out when a portion of the garden is treated in this manner each year. Ground occupied by old Strawberry plantations can now be turned to account, and planted without digging it. Broccoli do well on such land, making sturdy growth, with short stems if not crowded together, which stand hard weather without loss. I do not advise using ground that has not been dug or trenched for a long time, as this would be too much impoverished, but when the short or two-year system of growing Strawberries is adopted, it may be so employed, thoroughly manuring and trenching it when the winter crops are cleared off. The advantage of having a good breadth of late Broccoli is, that the late-planted lot will often afford the best returns, owing to its escaping injury from frost, whilst the earlier planted, owing to its making more growth and a longer stem, is cut down. We lost all ours in the last two winters; but Broccoli Model planted at this season gave us nice small heads, fit for the best table till Cauliflowers came into use.

BORECOLE.—This needs much the same kind of treatment as Broccoli, and is about as useful late in the spring, when other Brassicas are running to seed. The Dwarf Late Curled Asparagus and Cottager's Kales are good to plant at this date; Chou de Burghley is another useful winter vegetable; it is mild in flavour, and a good breadth of it should be grown.

CABBAGE.—Another sowing of Cabbage seed should be made from August 1 to 10, which will often be found to give the finest returns, the earlier sowings in sheltered gardens often getting too large, and sometimes bolting. Ellam's Early and Veitch's Matchless cannot be beaten for earliness and freedom from bolting. When Cabbage is sown in July, as previously advised, I prefer to have the plants pricked off into firm ground as soon as they are large enough

to be handled, and lifting them carefully. This prevents spindling, and when they are large enough for putting out in the quarter, they are sturdy and possess plenty of roots. A large bed of hardy green Colewort planted now on a north border will give a good head late in the spring, and keep up a supply of Greens till the earliest Cabbages come in. The planting of winter Green crops should be finished as soon as possible, including a late lot of Brussels Sprouts, which will often come in very useful, being dwarf and not so likely to be injured by frost as the earlier-planted Sprouts.

LEEKs, late-sown and planted, may be put closer together, and if the roots are not large enough for every purpose, they are of use for flavouring, and are not liable to run to seed so soon as larger and earlier roots.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

TOMATOS.—Plants which may be carrying heavy crops of fruit will need some additional compost put over their roots, which may contain a fair amount of Thomson's Vine and plant manure and leaf-mould. This will answer if made fairly firm when put on, and afterwards well watered. An occasional sprinkling of kainit on the border will also be conducive to growth and bearing. Continue to go over the plants at intervals, to remove all the laterals on those plants which are not intended to furnish cuttings. To secure strong plants for early planting next year, the lateral growths on those now in full bearing should be encouraged, that they may be available for propagating purposes in the beginning of next month. Although I have grown most varieties under glass, none has equalled Perfection and Sutton's A 1 for handsome fruit and heavy yield. I would therefore recommend cuttings being taken from plants of those varieties which are showing free-fruited qualities. With foggy weather, the fungus which attacks the leaves of Tomatos may make its appearance in unheated houses, and careful inspection of the plants should be made daily, and, on its appearance, the leaves, on both sides, should be dusted with flowers-of-sulphur, and as dry and buoyant an atmosphere maintained in the structure as circumstances will permit of. The white-fly is sometimes a little troublesome, but this can be kept in check by fumigating the house about twice a week until they have disappeared. I have always used medicated tobacco-paper for fumigating, because it is safe, and does its work effectually, which, unfortunately, is not always the case with all fumigating substances.

CUCUMBERS.—Stop and tie-in shoots of Cucumbers as growth advances, and give a good top-dressing to the beds or borders when the roots make their appearance at the top, applying liquid manure freely to plants in full bearing, and fresh linings to those in pits or frames when the heat begins to decline too much. The late cold weather has obliged gardeners to make pretty constant use of artificial heat in houses, and red-spider is very prevalent in some gardens. To keep red-spider in check—it cannot be quite destroyed if it have a good hold of the plants—sprinkle the leaves every night with soapy water, and wash it off the following morning, continuing this practice until the plants are fairly clean.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

RASPBERRIES.—These being now in full growth, should have the weaker canes cut out, the best-placed and strongest being reserved for fruiting next year, making them secure by fastening them to the trellis or stakes, or to each other. Those Raspberry plants that were planted last autumn and cut down nearly to the ground, should be regulated according to their strength. If the canes are weak, pull all of them up, excepting three or four to a stool. Neglect of this point will make all the difference between a good or a bad crop next year. Keep the plantations free from weeds, and should the soil be caked, loosen it with the draw-hoe. As fast as the fruits are cleared off the canes, go over the beds, and cut out all the canes which have borne fruit this season, and mulch the ground if the young canes are not growing strongly, especially on light dry soils. Amongst the many varieties in the catalogues, the best reds are Baumforth's Seedling, Superlative, Northumberland Fillbasket, and Carter's Prolific, also *Semper fidelis*, the latter rather acid, but an

immense cropper, and good for making preserves and vinegar. The best autumn fruiter is *Belle de Fontenoy*. The best yellow October and Antwerp. The Raspberry, being a shallow-rooting plant, and to enable it to bear for a reasonable length of time during dry weather, water should be freely afforded, and occasionally artificial manure or farmyard manure-water diluted with one-half or one-third clear water according to its strength.

Autumn Fruiter.—A few of these should be grown, but the flavour of the fruits owing to their ripening late in the year is rarely very good. If fruits for dessert are required, freely thin the canes, which if strong, may be left to the number of five on each stool, and these should be trained to stakes or wires.

WALNUTS.—Nuts for pickling should be gathered whilst they are tender, and when quite dry. A good way of testing the fitness of the nuts is to pierce them with a needle, and if the shell is soft, they are ready for pickling.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

BORDER CARNATIONS.—The usual method adopted in the propagation of Carnations and Picotees is by layering the young growths in prepared soil in the early part of August. If a small quantity of sifted loamy soil be placed around and close up to the root-stocks of the plants, surfacing it with sand, the layers will root quicker than in the soil of the border. In layering, remove a few of the bottom leaves with a sharp knife, and cut the shoot halfway through, just below a joint, where the shoot has acquired some degree of solidity, and cut in an upward direction for about 1 inch, then bend the stem of the plant down to the prepared soil, inserting therein the tongue formed by the upward cut, and secure the shoot with a hooked peg. If the grass of the shoot layered is topped, it will hasten the emission of roots. In this way a few hundred layers may be made by an experienced hand in a few hours; care, however, should be taken not to cut the stems too deeply, or break them. When a number of layers have been made and fixed securely, water them with a fine-rose water-can, and afford water every afternoon if the weather be dry, till roots form in good numbers. Thus treated, the layered shoots will be sufficiently rooted by the end of the month of September to be safely detached from the plants, cutting them off at the joint at which they were layered, and taking them up with a compact mass of soil and roots, and either potting them in 3-inch pots and standing them on sifted coal-ashes in a cold pit or frame near to the glass during the winter months for transplanting out-of-doors early in March, or be planted out at once.

CUTTINGS, OR PIPINGS.—Where pipings of varieties are obtained from a distance, as is frequently the case at this season, the following simple and effectual method of procedure may be employed to strike them. Place one or more hand-glasses, according to the number of cuttings to be put in, over a bed of fine sandy loam and leaf-mould, with a surfacing of sand a few inches deep. Into this dibble the cuttings, 2 inches apart every way. The pipings should be about 3 inches long, the lower pair of leaves being carefully removed by a sharp knife, and the end cut square across a little below the joint before being dibbled into the soil, afterwards watering them gently. Keep the light, or lights, close, and shaded from bright sun, until the pipings are rooted, when the shading must be no longer used, and a little fresh air admitted, gradually at first, and increasing the amount until the rooted cuttings are either potted up or planted out on a west border. If large quantities of plants are to be raised from cuttings, a shallow frame should be placed on a gentle hot-bed, placing therein sufficient half-rotted dung, and 3 or 4 inches deep of fine soil, so as to bring the surface of the bed to within a like distance of the glass, covering this with sand to the depth of half an inch, and then dibble the cuttings in it as described above, pressing the soil about the individual pipings in putting them in with the dibble. The frame should be kept close and shaded during the heat of the day, admitting a little fresh air for twenty minutes every day to dispel moisture.

ROSES.—Cuttings of the various sections of the Rose desired to be propagated may be readily struck in the same manner as Carnations, if taken off with a "heel," that is, a piece of the old or ripened wood, and a leaf at the base, and removing the central leaflet on each leaf.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

FRIDAY, AUG. 5—Dundee Horticultural.

SHOWS.

MONDAY, AUG. 1 { Earl's Court Exhibition, Show of Carnations, Cottagers' Produce, &c. (three days).
Beddington and Carshalton.
Mansfield Horticultural.
Northampton (two days).

TUESDAY, AUG. 2 { Leicester Horticultural.
Oxford Carnation and Picotee Union, in Stanley Road, Oxford.

SALE.

FRIDAY, AUG. 5 { Orchids from Mr. F. Sander, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.2.

A Connoisseur's Kitchen Garden.* To change market customs is, as everyone knows who has tried, almost an impossibility; to overcome prejudice when endeavouring to introduce a new article of diet is almost as difficult a feat. Our fathers have told us of the long struggle that the introducers of Rhubarb had to maintain, and in our own times we can scarcely recollect a single new food-plant which has found its way as a regular thing to our markets or to our tables. Of course we are not speaking of new, or so-called new, varieties of old vegetables, but of absolutely new products. It would be difficult to name more than a score or two of vegetables in common use out of the hundred thousand or more species known to botanists. Can it be possible that out of that large number, even when all the necessary allowances are made, there are only two score which are fit for use in this country? The Chinese, say the authors of the book before us, eat everything. It would be more easy to enumerate the vegetable products which they do not eat than it would be to specify those that they do. "So much the worse for the Chinese," some may say, calling to mind the succulent Cabbage and the toothsome Asparagus of Europe. Still there must be some *via media*, if we could only find it, between our extreme eclecticism, and the indiscriminating omnivorousness of the Chinese.

To us it seems that apathy, ignorance and prejudice form the chief obstacles to the introduction of greater variety among our culinary vegetables. The ordinary gardener, or he who has to get his living by supplying the markets, is, of course, not to blame for this state of things.

It is his business to supply things of known quality, and which can be depended on commercially. The blame lies mainly with our horticultural Societies, which exhibit a singular lack of enterprise and initiative, and are content, year after year, to go on premiating the same Cauliflowers and Turnips, and to award Certificates to different varieties of Peas, so like, that the seed might readily have been derived from the same sack—the same pod, even.

Colonial horticultural Societies are even more to blame; instead of availing themselves of the native products, and developing and improving them, they hanker after the Peas and Beans and Potatoes of the old country, take much pains and go to great expense to grow an article which from the more or less unpropitious circumstances of the case must be deficient in quality or quantity, or both, and neglect what is at their hand.

The work before us is a second edition of a book well calculated to diffuse knowledge and stimulate enterprise. A certain amount of success has followed on the efforts of M. PAILLEUX to introduce new vegetables; for instance, the rhizomes of the *Stachys Sieboldi* are now grown in such quantities in France that they may be bought at a low cost in the markets of the principal towns. When some other Japanese products were first brought under our own notice, we distributed them among a few of the best-known exhibitors and growers of vegetables. They were received with utter indifference, and in no single instance has a report been received. We are therefore in a position to appreciate the energy of M. PAILLEUX, and we heartily wish him success in his endeavours to introduce valuable culinary plants into the French colonies through the medium of the Botanic Gardens, and to enrich our European gardens with such of the products of other climes as may be suitable for cultivation here.

Reverting to the *Stachys*, we may supplement what the authors tell us by referring to Mr. HEMSLEY's account in the *Journal of the Linnean Society*, vol. xxvi. (1890), p. 301, and to the figure and comment in our own columns on January 7, 1888.

The present work may in some sense be considered supplementary to VILMORIN's *Les Plantes Potagères*, supplying information more especially about rare or little-known vegetables.

The work is arranged alphabetically, according to the French popular names—a plan which, however convenient in France, is very much the reverse in any other country. What Englishman, for instance, knows anything about "Accoub de Syrie?" Fortunately, the Latin equivalent name is also given, and there is a good index, so that the botanist of any country would have no difficulty in finding what information he required about *Grindelia Tourneforti*.

The last entry in the book is entitled "Zétoutt," by which is signified the bulb of *Iris lusitanica* or *I. juncea*. The bulbs are eaten by the Arabs in Algeria, and might possibly be cultivated with profit elsewhere. We have picked out the first and the last plants mentioned in the present volume to indicate the nature of its contents. Between the two a great variety of plants is mentioned, and information given as to their native country and uses. It is certain that if these plants are to be turned to good account they must be systematically cultivated, else the supply will be precarious and the quality indifferent.

There is a good index, and all that we can suggest as improvements in a future edition is that lists shall be given in which the names of

the plants should be arranged in their natural orders, and also according to the parts made use of, bulbs, tubers, &c.

ROTHAMSTED.—The United States' Department of Agriculture has issued, in the form of a "bulletin," the report of six lectures delivered by Mr. R. WARINGTON before the Association of American Colleges and Experiment Stations, in August, 1891, under the provisions of the Lawes Agricultural Trust. The lectures comprise a brief historical account of Rothamsted, its owner, and of the experiments carried on by him. The second lecture is devoted to the circumstances which influence the rise and fall of nitrogenous matter in the soil, the sources of the nitrogen, and the causes which determine its loss. Nitrification forms the subject of the three following lectures, and the dependence of the process on living organisms (microbes) is well discussed. As this is a subject to which Mr. WARINGTON has himself paid special attention, this summary of his observations and experiments will be welcomed. The sixth lecture is devoted to drainage and wellwaters. In conclusion, Mr. WARINGTON states, in language which we should like dinned into the ears alike of our educational reformers and of our cultivators:—"You have, I believe, at the present time in your country more than fifty stations, each of them endowed with an income equal or surpassing that possessed by Rothamsted. We have in England one station; you have more than fifty. What a great future lies before you! But, if at the end of fifty years each of your stations is to show a record of work done equalling or surpassing that accomplished by the old station in England, it will only be, I think, by each pursuing its work in the same spirit of accuracy, thoroughness, and patience which has characterised the Rothamsted experiments."

"**INVENTION.**"—In the journal of this name for July 16, was published a cartoon containing portraits of several of the exhibitors at the horticultural exhibition at Earl's Court, together with biographical memoranda.

ARISTOLOCHIA GIGAS.—Mr. W. B. LATHAM, of the Botanical Garden, Edgbaston, Birmingham, writing on July 25, informs us that "the marvellous flowers of the vegetable world are now opening here. I have just taken the measurement of a flower which may be interesting to the readers of the *Gardeners' Chronicle*; it is as follows:—Flower 14 inches across (in position), 19 inches long; tail to flower, 37½ inches; entire length of flower, from perfoliated bract at the end of the germen to end of the tail, 60 inches. The flower is drooping, and bent back like a syphon, and has been likened to a pelican; and it is seen to advantage in the bud stage. The centre of the flower is of a black-purple colour, with prominent veins radiating to the margin, mottled throughout with purple on a white ground." We are indebted to the authorities of the Royal Gardens, Kew, for the reintroduction of this remarkable plant after it had been lost to cultivation for many years; and also for presenting a plant to this Society, and by so doing giving the people of the Midlands an opportunity of seeing this wonderful West Indian plant.

COLONIAL FRUIT SUPPLY.—A month after its proper time for closing, the Tasmanian Apple season has ended. Some 50,000 bushels of fruit from Hobart have been elbowed and jostled in the market here by Gooseberries, Strawberries, Cherries, Currants, &c.—very much to the discomfiture of the antipodean fruit. In fact, the season has not been a good one for our colonial friends. We were promised immense imports from New Zealand, Australia, Tasmania, and the Cape; and yet the student of prices recorded week by week in these and other columns will not have noticed that any blank has been drawn for our own or Canadian Apples. Something has evidently gone very seriously wrong. Before the season began we were informed by the agent-general for Tasmania that 240,000 bushels of

* *Le Potager d'un Curieux*, par A. Pailleux et D. Bois Paris, Rue Jacob, 28).

Apples were to be sent over during the season now ended. Twelve steamers were to call at Hobart, one a week, thus covering the season, or what was mapped out as the season. Some 180 000 bushels have come to hand, a large proportion of these in an un-

one—the whole season's venture, we imagine, must have tried the pockets of the Tasmanian Fruit Growers' Association. As at home very often, so in Tasmania occasionally, there appears to have been a bad crop, unfit for harvesting; the fruit has been

condition at the proper time. The cause of the failure on the part of the fan ought to be carefully inquired into; the agents in London ascribe the failure to a most irregular temperature being kept up; the engineer's "log" ought to show whether such was the case or otherwise. The supply from Melbourne, Sydney, and elsewhere in Australia, need not be noticed, nor have we any data as to their sales, profitable or otherwise. We may just glance at the venture by the company at the Cape of Good Hope. One of the firm of DUTHNOT & SAINSBURY, of Fenchurch Street, went out to the Cape with a stock of cork shavings or dust, with which to pack the goods, and himself assisted and superintended the packing of Grapes and other tender fruits, also Apples and Pears. The Apples may be dismissed; it is proper to observe of the Pears that the promise of flesh held out by all external appearance was not facted, and we do not think, unless a decided improvement is shown next season, or 9d. each at auction (on the average), will not be the price of Cape Pears in 1893. Black Barbarossa Grapes—other varieties as well—brought very high prices, both at auction and in the Avenue, where other and very good Grapes were exposed at 5s. per pound. We have it on the authority of the firm above-mentioned, that they got over 30s. a pound for much of the Grapes they put up. Arrangements are being made for sending out to the Cape a large stock of cork dust or waste for packing. All the facts above stated, suggest their own "moral"—those who are primarily concerned may, we think, safely be left to point the moral, assured that properly and regularly supplied with good fruit, we can consume, at good prices, what our Colonial friends may care to send us.

COLOURING WEED-DESTROYERS, ETC.—So many accidents have happened in connection with liquid weed-destroyers, sheep-dips, insecticides, and other poisonous liquids, that it is quite time steps were taken to make these liquids declare their dangerous character by means of some special colour, for too often they are used in unlabelled bottles, which, from their shape, &c., may be presumed to contain alimentary liquid. It has recently been proposed to introduce chromium compound into such preparations when they are of an alkaline character, or when they are not alkaline, but are compatible with an alkali, to introduce a chromium compound mixed with alkaline matter. Although this proposal scarcely promises to meet every case, it certainly looks like a move in the right direction, and is to be commended even if it only partially succeeds in preventing accidents and crimes.

THE FRUIT OF THE LAUREL CHERRY.—In one respect, at least, the fruit of the Laurel Cherry resembles the berries of the Mountain Ash; both contain a saccharine substance which is known to chemists as sorbitol. This has recently been determined by members of the Paris Academy of Science, viz., MM. C. VINCENT and DELACHANAL, who contribute a paper to the *Comptes Rendus*, cxiv., pp. 486, 487. They also found mannitol in the Laurel Cherry fruit, which is the chief component of manna, an exudation collected chiefly in Sicily from two species of Ash, *Fraxinus ornus* and *F. rotundifolia*; this substance is sweet, and has also been found in other plants, in several Sea-weeds, and in Mushrooms.

LATENESS OF THE SEASON IN THE NORTH.—A correspondent writing under the date July 23, remarks about the crops in Forfarshire:—"I have been too late this year; all the fruit has been so far back that I could not see my way to report till this week. Gathered the first Strawberries yesterday; under average in this neighbourhood. Gooseberries and Currants nearly average; Raspberries only in flower; Apples, Pears, and Plums much under average. Cloudy, cold days, less sunshine, and more rain than we have had at this season for five or six years. Potatoes late, and a light crop, as far as they have been lifted. Grass and all kinds of weeds most luxuriant.



FIG. 21.—WHITE MASDEVALLIA HARRYANA, VAR. GRAVESIE. (SEE P. 122.)

ripe, immature condition—three of the vessels making the long instead of the direct voyage between ports, and the attempt to bury a large amount of fruit in the ship's hold, kept at a certain temperature by means of a steam-driven fan, having failed. This last experiment must have proved a very costly

packed and sent off, the last three consignments having to be placed on a loaded market, much of it in a very crippled condition. As Jacob Faithful says, however, "better luck next time," if it is remembered to send only goods fitted for the British market, and despatched so as to arrive in good

EXAMINATION PAPERS OF THE SURREY COUNTY COUNCIL.—In our last week's issue we alluded to the efforts now being made by various County Councils to impart a knowledge of horticulture to residents in the rural districts. We now publish the questions put by the examiners appointed by the Royal Horticultural Society after communication with the lecturers, so as to ascertain what subjects were treated of. Each candidate has to answer any eight of the following questions, as showing the nature of the knowledge imparted.

Higher Grade.

1. What constituents do plants obtain from the soil, and how do they obtain them?
2. Explain the benefits to be derived from draining, digging, and trenching the soil.
3. What differences exist in the cultivation of green crops, and of root crops respectively? What kind of manure is suitable in each case?
4. What advantages are derived from dressing the land with lime, and how ought it to be applied? For what purpose is gas lime of value?
5. What is the most appropriate season to apply nitrate of soda to crops? And state the reasons for the choice.
6. For what objects is pruning resorted to? Why is summer pinching in some cases preferable to pruning?
7. Name some fruit-bearing trees and bushes which bear on the old, and some which produce fruit on the new wood, and state what modifications are consequently required in the method of pruning.
8. What methods would you adopt to get rid of (a) annual weeds, (b) perennial weeds?
9. Give a brief sketch of the life-history of the winter moth, and state what measures are most likely to be effectual in keeping it in check?
10. Name some other insect pest affecting fruit trees, and indicate methods of destroying them.
11. In what ways does the Potato and Tomato fungus (*Peronospora*) do harm to the Potato, and to the Tomato respectively?
12. How may the ravages of the Potato fungus (*Peronospora*) be kept in check?

Lower Grade.

1. What are the characteristics of good garden soil, and what steps should be taken to improve a soil that is too light, and one that is too stiff?
2. Point out the advantages of deep cultivation, and describe the proper method of trenching the ground.
3. Describe the best methods of cultivating Potatoes to obtain an early and late supply under varying conditions of soil and position.
4. What is the most suitable time for sowing seeds of green crops (Cabbages and the like)? Give a brief outline of the principal points to be observed in their culture.
5. Describe briefly the methods of propagating Gooseberries, Currants, Raspberries, and Strawberries.
6. What are the conditions requisite for the success of grafting and budding? State the best time of year for performing these operations.
7. Name some of the trees and shrubs that are propagated by budding and by grafting respectively, and state why those operations are performed.
8. What are the objects sought to be obtained by earthing up Potatoes, Celery, Peas, and Cabbages?
9. What special effects are produced on plants by nitrogenous manures, whether of animal or vegetable origin?
10. To what crops, and at what season, may superphosphate of lime be employed with advantage?
11. How are weeds injurious, and why are some more so than others?
12. What methods should be employed to destroy weeds?
13. What are the principal insect enemies of the Apple, and state briefly the best methods of dealing with them?
14. What are the most common enemies of Cabbages, Turnips, and Celery, and how may they best be combated?
15. Which parts of a flower are essential, and which accessory?
16. What steps would you take to prevent fertilisation through the agency of insects, so as to keep a particular stock "true"?

ORCHIDS FROM GRENADA.—In addition to the Vascular Cryptogams collected under the auspices of the West India Exploration Committee by Mr. R. V. SHERRING, F.L.S., and described in the *Annals of Botany*, vol. vi., No. 21, April, 1892, by Mr. J. G. BAKER, F.R.S., his collections have yielded about thirty species of Orchids from Grenada, some of which are of considerable interest. These have now been determined by Mr. R. A. ROLFE, A.L.S. The Orchids of Grenada appear not to have been systematically collected before. There is no record of species from that island in GRISEBACH'S *Flora of the British West India Islands*, 1864, and only about three or four were represented in the Kew Herbarium. Mr. SHERRING'S collections therefore enable us to arrive at a tolerably good idea of the distribution of Orchids in the island. A species of *Brachio-*

nidium, a genus not hitherto represented in the West Indian flora, is probably new, as also species of *Scaphyglottis* and *Cranichis*. *Hexisia reflexa*, *Pleurothallis pruinosa*, *Oncidium luridum* and *Ornithocephalus gladiatus* have not hitherto been found in the smaller islands, the recorded specimens being chiefly from Jamaica and Trinidad. *Dichaea hystrix* has not been found before except in Cuba by WRIGHT and EGGERS. *Xylobium* (*Maxillaria pallidiflora*) was recorded before only from St. Vincent, and *Elleanthus lepidus* is new to the West Indian flora. The remaining species are found in many islands, such as Jamaica and Dominica, but their occurrence still further south is a point of some interest. Of Mr. SHERRING'S general collection a number of *Phanerogams* have still to be worked out, says the *Kew Bulletin*.

AGRICULTURAL RESEARCH ASSOCIATION.—Mr. JAMIESON, in his annual report, says that there is "(1), a demand for information that will be of immediate benefit in practice; (2), a demand equally utilitarian, but having reference more to the foundational or permanent interest in agriculture; and (3), a demand for truth, the utility of which may not be apparent at the moment, but which, if bearing on practice, throws a light on the whole subject that the former two branches are unfit to call forth." Of course there is no question at all as to the vastly superior advantages in the long run of researches carried out with the sole object of ascertaining the truth, irrespective of any possible immediate benefit. The "fertile" discoveries have been made by the Faradays and others, who made their investigations from a scientific point of view only. Although the ultimate benefit to the practitioner is incomparably larger, yet he cannot afford to wait. Art is long, life is brief, and so utilitarian methods must be adopted, but scientific research should be carried on simultaneously. In the present report, Mr. JAMIESON reprints his observations on root hairs, in which he arrives at the conclusion already formulated by GASPARRINI, that these hairs, sometimes at least, present a minute aperture, by means of which solid particles gain admission to the root.

MR. PETER BLAIR.—We learn that Mr. P. BLAIR, gardener to the Duke of SUTHERLAND, at Trentham, intends vacating that post to become the landlord of the Trentham Hotel, in the neighbouring village of that name.

ERICA WILMOREANA.—Our French friends seem perplexed over this name. In France it is occasionally called *Vilmoriniana*, as if it had reference to M. VILMORIN. At other times it is written *Wilmoriana*, or *Willmoriana*, *Willmoriniana*, *Wilmorei*, *Willmorei*. In fact, the permutations clearly might be made very numerous. English horticulturists will know that the word is derived from WILMORE, and they will regret that a Latin technical name was ever given to a garden product.

LIGHT-SHUNNING IVY.—Mr. W. G. SMITH sends us a memorandum in which he notes the circumstance that three plants of variegated Ivy growing in pots in his work-room invariably turn their growing shoots away from the window. Pelargoniums and other plants in the same window direct their shoots to the light. The very absurd name "negative heliotropism" has been applied to this light-shunning propensity, which in the case of the Ivy, may have some connection with the emission of the aerial roots and the necessity for support.

A STINGING LABIATE.—We all know the Stinging-Nettle, and a good many of us know that the Dead-Nettle, so-called, is no Nettle, but a Labiate. Now it appears that there is a stinging "Dead-Nettle." At any rate, the *Kew Bulletin* states that the Rev. A. BARON has discovered in Madagascar a true Labiate with stinging hairs, and the general aspect of the two plants above mentioned. What an opportunity for naturalists like Mr. GRANT ALLEN to exercise their imaginative faculties.

HOLIDAYS ROUND HAMBURG.—Those who cannot take a holiday round Hamburg can do the

next best thing by investing a penny in the purchase of a little handbook published at 30, Fleet Street. It is full of tempting illustrations and graphic descriptions, which will be as helpful to those who can go, as they are pleasant to those who cannot go.

TRANSLUCENT BRICKS.—M. RENÉ ANDRÉ, engineer, has lately described in the *Revue Horticole*, some glass bricks used in the construction of a hot-house at Lyon. They are the invention of a Swiss architect, M. FALCONNIER, of Lyon, and are of blown glass. Each measures 20 centimetres in length, 14 centimetres in depth, and 115 millimetres in thickness. They may be set in mortar or cement. Fifty such bricks are required to cover a mètre of surface. The cost is 24 francs a hundred.

NATIONAL PINK SOCIETY (NORTHERN SECTION).—The annual exhibition of northern-grown Pinks took place in connection with the Rose Show at the Botanical Gardens, Old Trafford, on July 23. Late as the fixture was, some of the northern Pinks were not in bloom, and in some places the buds of Carnations and Picotees are scarcely showing colour. The best twelve blooms of Pinks, in not less than six varieties, were shown by Mr. M. Campbell, florist, Blantyre, N.B.; Mr. A. R. Brown, Handsworth, Birmingham, was 2nd. Mr. Campbell also had the best six blooms, dissimilar; Mr. C. F. Thurston, Wolverhampton, being 2nd. In another class for six, in three varieties, Mr. A. R. Brown was 1st; and Mr. S. Barlow 2nd. One class was for three blooms—a purple-laced, red-laced, and black and white; and here Mr. W. Taylor's Middleton was 1st, and Mr. J. Edwards Blackley, 2nd. The premier purple-laced Pink was Boiard, shown by Mr. M. Campbell. The best red-laced Pink was Minerva, shown by Mr. A. R. Brown. Mr. Walkden, Sale, staged an interesting collection of miscellaneous Pinks.

LIVERPOOL HORTICULTURAL ASSOCIATION.—An excellent show was held on Wednesday, July 20, in Sefton Park, the number of exhibits exceeding 400. The *Gardeners' Magazine* prize, for the best amateur exhibit, fell to Mr. T. S. TIMMIS, of Allerton (gardener, Mr. B. CROMWELL). Fruit was not largely shown, but it was generally of great excellence. The Hon. C. H. WYNNE was the winner in the eight dishes class, and Mr. A. R. GLADSTONE in that for six dishes, as also for Peaches and Nectarines. Sir THOMAS EARLE, Bart., was the winner of the best basket of miscellaneous fruit class, as also for the collection of vegetables.

NATIONAL WILD FLOWER EXHIBITION.—An exhibition on a large scale was held in the Music Hall, Edinburgh, on July 22 and 23. The exhibit consisted of wild flowers gathered and arranged by children, to whom prizes were allotted, whilst the proceeds were devoted to the Royal Sick Children's Hospital, Edinburgh. No fewer than 1642 exhibits were received. In one class (hand bouquets), the number of competitors amounted to 880. What work for the judges, Mr. M. DUNN, Mr. LINDSAY, Mr. T. MILNE, and Mr. J. JOHNSTONE!

TRENTHAM AND HANFORD HORTICULTURAL SOCIETY.—The fifth annual exhibition of this flourishing society was held on July 21, and was in every way a success, the weather being everything that could be desired, the attendance good, and the show a particularly good one. The show was opened by His Grace the Duke of SUTHERLAND, accompanied by the Duchess and a large cortège. The liberal prizes offered brought very strong competition in the various classes. The principal plant-classes were the groups arranged for effect, and we question if a finer lot has been put up this season. The cut flowers were also very fine, although in the Rose competition many of our leading growers telegraphed to the effect that owing to the severe storms they could not appear, as their blooms were damaged; still, those shown were a fine show. The Grapes were excellent, nearly 300 bunches being exhibited—good bunches, fine berries, and well finished. A splendid group of Carnations of the Souvenir type were exhibited by Mr. JENNINGS, gar-

dener to Mr. LEOPOLD DE ROTHSCHILD, of Leighton Buzzard. We append some of the best prizes, viz., for groups:—1st, Mr. CYPHER, for a superb arrangement; 2nd, Mr. MCINTYRE, gardener to Mrs. G. PEASE, Darlington; 3rd, Mr. EDMUNDS, the Gardens, Bestwood. For fruit:—Collection of nine dishes, Mr. GOODACRE, gardener to the Earl of HARRINGTON.

WINDOW GARDENING IN THE EAST AND IN THE WEST.—One of the judges at the Window Gardening and Industrial Society of Kensington and of Stepney, writes that he was astonished to find in the heart of Stepney some of the neatest gardens he had ever seen. The gardens are only a small part of the philanthropic schemes put in practice by the Rev. S. B. BRIDGES. On leaving Stepney, the judges proceeded to Kensington, where, though the latter suburb has the advantages of purer atmosphere, the gardens, window-boxes, &c., were found decidedly inferior to those at Stepney. On the next day a cottagers' show was held in the grounds of Argyll Lodge, when the exhibits were of good quality.

COTTAGERS' AND ARTIZAN'S SHOW AT THE INTERNATIONAL HORTICULTURAL EXHIBITION.—This exhibition, which takes place at Earl's Court, on Bank Holiday and the two following days, promises to be a large and important one, and judging from the quality of the vegetables shown by cottagers during the past fortnight, there is reason to believe that garden produce will be seen in the best character. The home counties promise to furnish the largest portion of the exhibits submitted for competition.

CARDIFF HORTICULTURAL SHOW.—The entries for the forthcoming show to be held on August 17 and following day, promise well for the success this year of this important provincial exhibition. And provided the fates are propitious, so that fine bright weather prevail, the gathering of South Wales folk will be a very large one. August 11 is the last day on which entries can be made.

HAMMERSMITH HORTICULTURAL SOCIETY.—The annual summer flower show took place on Thursday, the 21st inst. Noteworthy was a group of foliage and flowering plants, not for competition, staged by Messrs. C. LEE & Co., Royal Vineyard Nursery. Some capital examples of British Ferns gained the premier place, for Mr. HILLIER, Black Lion Lane, an amateur who beat the professional gardeners in this class, in which section (gardeners) the most successful competitor was Mr. GOSLING, gr. to T. ELSLEY, Esq., Longthorpe Lodge, Goldhawk Road.

THE NATIONAL CO-OPERATIVE FESTIVAL.—This now well-known event will be held at the Crystal Palace on Saturday, August 20. The promoters—who are representatives of working men's co-operative societies throughout the kingdom—intend to a great extent to follow their programme of previous years, and provide a flower show, under the auspices of the Agricultural and Horticultural Association; also an exhibition of co-operative productions from profit-sharing workshops. There will be a number of attractions, and athletic and other contests. The general secretary is Mr. WM. BROOMHALL, 49, Bedford Street, Strand, W.C.

ACTON HORTICULTURAL SOCIETY.—The twenty-fifth annual summer show of this Society took place in Acton Park on the 27th inst., and was in all respects a success. Group of stove or greenhouse plants, amateurs, 1st, Mr. T. BUTCHER, gr. to Mrs. Toynbee. Here was a fine plant of *Brugmansia Knightii*, some 9 feet in height, with several of its handsome pendent flowers; 2nd, Mr. G. BURHAM, gr. to R. O. DAVIES, Esq. In the class for a specimen stove or greenhouse plant in flower, Mr. BUTCHER led with a well-flowered plant of *Stephanotis floribunda*. Ferns were well shown by Mr. Brooks, gr. to H. G. LAKE, Esq., Fairlawn House, who also showed remarkably well in other classes. For table decorations,

Mrs. C. B. GREEN, Myrtle Road, was 1st with a nice arrangement. Miss HUDSON, Gunnersbury House, also showed well, but not for competition. The most successful competitors in the Grape classes were Messrs. T. Batcher and W. Brooks. Messrs. C. Lee & Son, Ealing, sent a charming group of herbaceous plants in flower, as also a beautiful collection of cut Roses. The cottagers made a remarkable display of vegetables.

WEYMOUTH PINE FUNGUS.

WE have now the opportunity of figuring the very curious fungus which appears on the shoots of the Weymouth Pine, and which is identified by Dr. Klebahn, of Bremen, as *Peridermium Strobi* (see fig. 22). This fungus, unlike *P. pini*, attacks the shoots only; but what is still more curious is, that when the fungus in question grows on a Currant leaf, its appearance is so completely different that it has received the name of *Cronartium ribicola* as if it belonged to a separate genus. Of course, such a statement would necessarily be received with incredulity by those unfamiliar with the ways of fungi. Experimental proof, however, is not wanting, and "heterocism" (would that someone could hit on an expressive English term!) is now a well-established fact. Up till recently the *Cronartium* had not been found on Currant leaves in this country; but at the very time when we were in correspondence with Dr. Klebahn about his *Peridermium*, Dr. Plowright, of King's Lynn, detected the *Cronartium* on Currant leaves, and sent us specimens, as drawn by Mr. Worthington Smith at fig. 23. We append Dr. Klebahn's letter, from which the practical inference may be drawn, not to grow Weymouth Pines and Currant bushes in proximity:—

"The specimen of fungus on *Pinus Strobus* is indeed *Peridermium Strobi*, Kleb., the spores having the characteristic smooth spot on the cell-walls (see *Abhandl. naturwiss. Verein. Bremen*, x., p. 153; *Taf.*, i., figs. 5—8, 13, 14). This fungus only lives on the bark of *Pinus Strobus*, L., *P. Lambertiana*, Dougl., and *Pinus Cembra*, L., not on the needles. It is an heterocismal one, the other generation of it, *Cronartium ribicola*, Dietr., occurring on species of *Ribes*; the uredospores form yellow pulverulent clusters, the teliospores are compacted to horn-shaped cylindrical bodies, both often spread over the whole underside of the leaves. Neither *Peridermium Strobi* nor *Cronartium ribicola* have been met with in England before, as far as I know (see Plowright, *Brit. Ured. and Ustilag.*, pp. 249 and 254). As the former is a very dangerous enemy to the Weymouth Pines, English gardeners will do good to combat it in time, by cutting off and burning the branches and stems affected by the fungus and by extirpating any Currants (*Ribes nigrum*, *aureum*, *alpinum*, *sanguineum*, *rubrum*, &c.), in the neighbourhood of Weymouth Pines.

"There is no relation between this *Peridermium* and those of the common Pine, *Pinus sylvestris*. From the latter, one, occurring on the bark only (*Peridermium Cornui*), produces the *Cronartium asclepiadeum* on *Vincetoxicum* (after cultures of Mr. Cornu and of my own); another on the needles only (*Peridermium oblongosporium*) produces the *Coleosporium senecionis* on the Groundsel (*Senecio*). There are some other *Peridermia* on the bark and on the needles of *Pinus sylvestris*, the life-history of which is not yet known; some remarks upon them will be published shortly. H. Klebahn."

REMARKS ON THE FRUIT CROPS OF 1892.

[For Tabulated Summary, see p. 93.]

0, SCOTLAND, N.

MORAYSHIRE.—After the wet sunless autumn of last season, and the severe frosts we had in March and April, it was wonderful to observe how large was the crop of Apricots, Peaches, and Plums which set. Standard Plums have all set more freely than on wall-trees, but especially Victorias, Czar,

and Mitchelson. Both Apples and Pears are almost a failure, whereas small fruits, with the exception of Gooseberries, are a heavy crop, but fully ten days later than last year. C. Webster, Gordon Castle, Fochabers.

NAIRN.—All small fruits are plentiful: Raspberries looked at one time as if they would fail, being greatly crippled by spring frosts, but they have greatly improved. On aged standards, Apples are loaded with fruits, but fruit on young trees is very thin. Peaches and Apricots are almost a failure. Cherries dropped much of their fruit; Late Duke and Morellos are good crops. Strawberries are a wonderful crop—the sorts Noble, Garibaldi, Duke of Edinburgh, and Elton Pine are very fine. James Maitland, Cawder Castle.

SUTHERLANDSHIRE.—In the North, the present year up to this date (July 9) has been cold and wet, with unseasonably late spring frosts, and very little warm weather in May and June. Occasional sun, showers, and frosty nights during the blooming period made the fruit prospects for the year at one time very doubtful. During March, twenty nights were frosty, the lowest being 10° of frost on the 27th. In April, from the 12th to the 19th, we had frosts of from 4° to 7° every night. Still, the fruit crop has turned out better than was expected. Gooseberries and Currants are a heavy crop. Apples plentiful. Raspberries and Strawberries good. Plums over average, and clean. Cherries an average crop. Caterpillar has been troublesome, but it is easily kept under by timely application of Hellebore. D. Melville, Dunrobin Castle Gardens.

1, SCOTLAND, E.

ABERDEENSHIRE.—Fruit crops in this locality this season are rather variable. Apples had a very abundant blossom, and set well on some trees, on others very thinly. Pears had very little blossom, and are a poor crop. Plums, which usually do well, are rather a poor crop; they had little blossom, but set fairly well, and have suffered less from insects than usual. Cherries had an abundant blossom, but have only set a fair crop. Small fruits of all sorts are a most abundant crop. J. Forrest, Haddo House.

—Our wall fruit trees suffered from severe frosts. We registered 44° of frost on February 20, and also 33° on March 15, which nipped all the fruit-buds. Simon Campbell, Fyvie Gardens.

EAST LOTHIAN.—The very cold weather of spring has proved most prejudicial, old trees being, as a rule, furnished with only a scanty crop; young trees much better. Strawberries in some places damaged by late frosts. Small fruits of all kinds are most abundant, and the quality is excellent. R. P. Brothers-ton, Tynninghame.

FIFESHIRE.—This has been the coldest and wettest season we have had for eleven years; night temperature seldom above 50°, and little sunshine during the day, consequently outside crops looking anything but promising. Apples and Pears are very small. Wm. Henderson, Balbirnie Gardens, Markinch.

—I have no hesitation in saying this is the worst season for fruit of all sorts I have seen in this part of the country for the last thirty-six years. R. Gossip, Crawford Priory, Cupar, Fife.

FORFARSHIRE.—Owing chiefly to the protracted cold dry spring, the hardy fruit crops in this district generally are a failure. Of the large fruits I have not seen a tree bearing even an average crop, either on walls or in open quarters. There is a sprinkling of Victoria and Orleans Plums here and there, but everyone I meet say they have no crop. Bush fruits generally are an average crop, black Currants being scarcest. The Strawberry crops suffered from the frosts of June 12 to 14. Our plants were so much injured that at date we have not yet picked a Strawberry. J. Whitton, The Gardens, Glamis Castle, Glamis.

KINCARDINESHIRE.—Gooseberries and Currants of all kinds an extra heavy crop; too early to say what the crop of Strawberries may be. I fear they will

not be so good as the immense blossom indicated. Pears in this locality no use except on walls. *J. M. Gairns, Arbuthnott, Fordington.*

MIDLOTHIAN.—The cold, late, and changeable spring was very trying to fruit crops during the flowering period. Frost in the beginning of April killed most of the Pear and Plum blossom on wall trees, except what was within two inches or so of the face of the wall. The same nip of frost—9 degrees—killed the young Peaches and Apricots, except those close to the wall, although they were protected by two-ply of old herring nets; still, the crop of Apricots is a heavy one, and being close to the face of the wall, the fruit is very fine. Later Pears, Plums, and Cherries set fine crops; but while the Apples were in full flower, in the middle of May, a few cold, raw, wet days prevented them setting, and the crop is light, but the fruit is large and clean. Except Gooseberries, which were nipped by the April frost, all other small fruits are bearing a heavy and fine crop. Strawberries are the finest we have had for some years. Fruit trees are healthy and clean, and have not suffered to any extent this season from insects. *Malcolm Dunn, Dalkeith Gardens.*

PERTHSHIRE.—The crop is very bad—in fact, we could not say how bad it is till now, as what fruit was set did not come to anything. *P. W. Fairgrieve, Dunkeld House Gardens, Dunkeld.*

— Apples and Pears, the latter especially, had a grand appearance when in flower; but the severe frosts in April have left us with scarcely a fruit, Jargonelle and Marie Louise Pears being the only varieties having anything like a crop. Gooseberries were just coming into leaf on April 15, when we had 17° of frost, which killed nearly the whole of the bloom, and in some instances a large number of the branches withered off. *J. Croucher, Ochertyre, Crieff.*

SELKIRKSHIRE.—Owing to the gales we had at the end of May and beginning of June, the Apple blossom was very much damaged. Some trees have fair crops, and others blank. Victoria Plums are an abundant crop; Jefferson, Kirke's, Washington, and Green Gage, are fairly good. Small fruits, especially Red Currants, are a heavy crop, but all things are rather late, owing to the low temperature we are having at the present time. *W. G. Pirie, Sunderland Hall Gardens.*

6, SCOTLAND, W.

AYRSHIRE.—Not for years have we had such a poor crop of hardy fruit. Apple and Pear trees had a very promising appearance when in blossom, but the crop has turned out very badly, and until recently the foliage had a very unhealthy look. The Gooseberry bushes are much damaged with red-spider, and the crop of this fruit is in some gardens a very poor one. Black Currants have a heavy crop. *D. Murray, Culzeam Castle, Maybole.*

— All outdoor fruits are under average, the late frosts destroyed much of the bloom. With fine weather (which is much needed) the quality of most things should be good. We have been having too much rain and dull weather of late. *W. Priest, Eglinton Gardens, Irvine, North Ayrshire.*

DUMFRIESSHIRE.—We never count on good crops of Apples and Pears outdoors in this locality, but this season they are more deficient than for the last twenty-five years. Indeed, this has been the most unfavourable season of my experience. There have been (July 4) only two days that were anything like summer, and the temperature all through May and June has been very low, often below freezing, and seldom above 40° at night. Strawberries will not be ready for ten days or a fortnight yet. *D. Thomson, Drumlanrig.*

LANARKSHIRE.—A splendid promise of Apples and Pears in the Clydesdale orchards was ruined by the severe frosts we experienced in April and May. Apple and Pear trees, which were literally bristling with fruit-buds, have failed to produce a single fruit. Plums, on the other hand, are abundant, more especially the Victoria, which succeeds remarkably well

on the stiff clayey loam peculiar to this neighbourhood. Damsons are fairly heavy. New Orleans and Magnum Bonum full crop. Cherries are abundant and large. Peaches *nil*. Apricots very thin. Gooseberries under average. This crop is an important one in the orchards on Clydeside, the varieties Whitesmith and Whinham's Industry being grown in quantity. Red and black Currants are excellent both in abundance and quality. Strawberries abundant and large. *A. Angus, Dalziel Gardens, Motherwell.*

STIRLINGSHIRE.—All kinds of fruits, except Apricots, promised an abundant yield, but soon dropping commenced after the blooms had set, and the thinning was a very severe one. Black Currants on bushes planted last year are weighted to the ground with fruit. Other small fruits were severely punished by late frosts. Apples and Plums dropped three-fourths of their fruit when they were as large as Filberts. *M. Temple, Carron House, Falkirk.*

2, ENGLAND, N.E.

DURHAM.—Apples and Pears never were certainly worse in this county than this year, the trees being simply fruitless, and everywhere in the county you have the same tale from those who cultivate fruits.

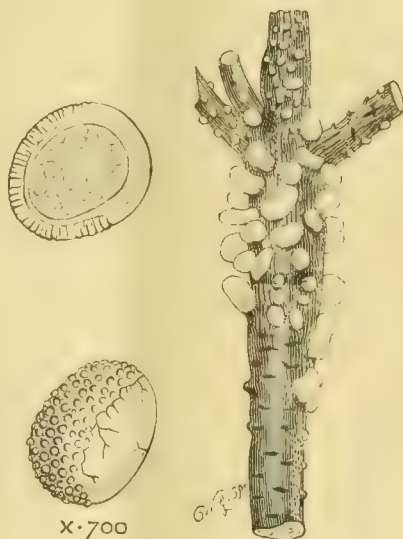


FIG. 22.—PERIDERMIIUM STROBILI: SPORES DRAWN BY DR. KLEBAHN.

A Fungus occurring on the shoots of the Weymouth Pine, and in a different form on the leaves of Currants. (SEE P. 133.)

Amongst Apples, such free croppers as Lord Suffield and the various Codlins are without a fruit. Strawberries, Currants, and Gooseberries are fairly represented. Pears are fine under glass, and if a gentleman wishes good fruits, this is the way to get them in Durham. *J. Hunter, Lambton Castle Gardens.*

— These gardens are near the sea, and very few varieties of Apples and Pears will ripen. We had a cold May and June, which caused a late blooming of fruit trees, and this was favourable to the setting of the fruit; Lord Suffield, various Codlins, and the new Hawthornden, are the best. Pears do not ripen well; the varieties Jargonelle, Marie Louise, Louise Bonne of Jersey, and Bergamot produce fairly good fruits if the summer is warm and dry. *R. Draper, Seaham Hall Gardens.*

— Apples and Pears have but poor crops, but the fruits are likely to be of fairly good quality. Peaches and Nectarines are not grown with us outside; Apricots are almost a failure as regards the fruit, for the frost not only destroyed the buds, but the wood as well. *John Short, Hummersknott, Darlington.*

NORTHUMBERLAND.—In the gardens many kinds of Apples are a full crop, but in orchards only a light

crop. The following are a few of the best:—Red Calville, Keswick Codlin, Pott's Seedling, Ecklinville Seedling, New Hawthornden, Grenadier, Lane's Prince Albert, Frogmore Prolific, Stirling Castle, and a few others. Strawberries are a fair crop—Noble is a very fine variety for early use. Pears are a light crop. Plums on walls are very fine, viz., Denyer's Victoria, Lawson's Gage, Jefferson, and Kirke's. Peaches and Apricots are a full crop, and the trees healthy. Gooseberries are very heavily cropped, especially Sulphur Yellow. *G. Harris, Alnwick Castle Gardens.*

— The late spring frosts made sad havoc this season with the Pears and Plums, but small fruits are fairly good on the whole, and Gooseberries first-class, particularly Whinham's Industry, which is as usual a very heavy crop, and is undoubtedly a sure bearer, and the most productive for early market or jam purposes. *William Fell & Co., Royal Seed and Nursery Establishment, Hexham.*

YORKSHIRE.—There was good promise of an abundant crop of most kinds of hardy fruits in the shape of there being plenty of blossom, but which, in the case of Apples and Pears, failed to set. In my opinion, this was caused more by the embryo fruit-buds not being well developed last autumn than from spring frosts. We never get good crops of these fruits hereabouts when the previous autumn is cold and wet, as it was in 1891. The months of April and May were fine and dry, though there were frequent frosts at night; yet we have an abundant crop of Gooseberries and Currants of all kinds. Peaches on walls are the best crop for some years past. We took care to keep the trees healthy last year, and the wood well laid in, so as to get it as ripe as possible; the only protection they had was a one-inch mesh herring-net hung double the whole depth of the wall, and kept therefrom by some Larch poles about 8 feet apart. Late in the autumn we partially lifted the roots, which doubtless had something to do with the young wood getting more consolidated. All fruits are fully a week to ten days later this year than in the average of years, though the season's growths are, generally speaking, very healthy. Keswick Codlin is the best Apple; as to crop, the trees are loaded all about us. *H. Clayton, Grimston Park Gardens, Tadcaster.*

— The fruit crops in this district as a whole are the best of the past ten years, and trees more vigorous. Pears are much under average. The following varieties are carrying a fair crop, Williams' Bou Chretien, Beurre Diel, Marie Louise, Thompson's, Louise Bonne of Jersey, Délices d'Hardenpont, Flemish Beauty, Dr. Trousseau, Crassane, Styrian, Seckle, and Beurre Goubault. Apples are heavily cropped, Lord Suffield, Keswick Codlin, Mère de Ménage, Nonsuch, Blenheim Orange Pippin, Manington Pearmain, King of the Pippins, Ecklinville Pippin, Schoolmaster, Stirling Castle, Queen Caroline, Northern Greening, and Stackpool. Plums are never a heavy crop on our strong limestone soil with the exception of Victoria and Gisborne's, which crop well generally. *Wm. Chuck, The Gardens, Brodsworth Hall, Doncaster.*

— Apples, Pears, and Plums all promised well when in flower throughout Holderness, but the trees are not carrying more than 20 per cent. of an average crop. *Thos. Lambert, Burton Cressable.*

— The 17° of frost registered here on the morning of April 16 ruined the crop of Apricots, and considerably thinned the Gooseberries. Apples did not set well, and are a thin crop; the varieties which promise the best yield are Lord Suffield and King of the Pippins. *J. Riddell, Castle Howard Gardens.*

— Considering the cold, backward season, the fruit crops in this locality are very fair. Apricots on outside walls thin, very good crop in the open shed. Keswick Apples rather scarce; Pears very strong and good on walls; early Plums thin crop, some late kinds plentiful; dessert Cherries very heavy crops on untrained trees. Laxton's Noble Strawberry is a heavy crop. *Bailey Wadds, Birdsall House Gardens.*

YORKSHIRE.—The show of bloom on all fruit trees was very good, especially on Apples and Pears, but on April 14, 15, and 16, we had 8°, 10°, and 12° of frost respectively, which destroyed the bunches of bloom, in a great measure, wholly. Peaches are a good crop in this garden, on a high, partially-heated wall. The buds of the Gooseberry bushes were very much destroyed in the winter. *W. Culverwell, Thorpe Perrow, Bedale.*

— Bloom of all description was abundant and fine. We had no frost to injure the blooms, but experienced a great amount of dull cold sunless weather. The crops of fruit are not generally equal to expectation. *Robt. C. Kingston, Brantingham Thorpe, Brough.*

7. ENGLAND, N.W.

LANCASHIRE.—I regret to have to report almost the total failure of two important fruit crops, the Gooseberry and the Apple. The first was destroyed

show of bloom, both on Pears and Apples, Currants and Gooseberries. Raspberries and Strawberries, being much later into flower, escaped the destruction. Driving through Cheshire a few days since, I noticed Damsons to be very few and far between. *B. Barham, Croxteth, Liverpool.*

3. ENGLAND, E.

CAMBRIDGESHIRE.—Apples, Pears, and Plums looked very promising for good crops early in the year, being full of bloom on walls and on standards in the open, but all suffered alike with the late frosts and biting easterly winds, and the same may be said of Peaches, Nectarines, and Apricots. Bush fruits are clean and plentiful in all possessions. It has been a good season for Strawberries for crop, size, and flavour. *Sydney J. Burgess, Dalham Hall Gardens, Newmarket.*

— The Apple and Pear crops in this district are a failure, but this is not a district for growing these

almost a total failure, owing to the frosts that occurred while the trees were in bloom. The Plums, and some of the Cherries, have been badly attacked by the black aphid. All small fruits are good except Gooseberries, which are poor. Morello Cherries were an abundant crop, but the fruit is all dropping off. *J. Douglas, Great Gearies, Ilford.*

— Taken all round, hardy fruits are a failure, Apricots, Peaches, Nectarines, and Cherries excepted. Standard Cherries a heavy crop generally; Morellos, however, sadly thinned by the fruit dropping in stoning. Of Apples, Striped Beaufin, Hawthornden, and French Crab carry the best crops here. White Magnum Bonum, Orleans, and Bonne Bouche Gage are the most prolific amongst Plums. Raspberries are bearing well, though many fruiting canes were killed by the frosts in the winter. *William Earley, Ilford.*

LINCOLNSHIRE.—Apple trees look well, and a good crop. Among the best cooking Apples here are Schoolmaster, which takes a leading place. This I attribute to its strong and robust bloom, and it bears abundantly yearly. Grenadier is also a fine bearer, large and early. The same may be said of Queen Caroline, the old and good Keswick Codlin, and Beauty of Kent. Laxton's new Strawberries, Scarlet Queen and Competitor, will make their way; I picked a fruit of the latter weighing 3 oz. the other day. *R. Gilbert, Burghley Gardens, Stamford.*

— The fruit crops altogether are the worst I have seen for many years. Apples, Pears, and Plums are not one quarter crop, although we had an abundance of bloom; but the severe frosts coming on when the blossom was just expanding, the greater part was destroyed. Of Gooseberries we had an excellent set of fruit, but we had 20 degrees of frost when they were just forming, which brought the greater part to the ground. Apricots and Peaches are good where protected with Frigi Domo. *D. Lumsden, Bloxham Hall.*

— Several circumstances combined to cause the unfruitfulness of the occupants of both orchards and fruit gardens; the wet and sunless autumn of the preceding year left the young bearing wood in an unripened condition, and the long and severe weather of the winter of 1891-92 hardly terminated in May, arrested the growth, and damaged the little blossom that was produced. There could be no fruit when there was no bloom, and half the Apple trees in our orchards had no bloom at all. There was but little prospect of fruit at any time on Pears and Plums, partly from the same cause, and, in the case of Plums, from being overtaxed by excessively heavy crops the preceding year. The Gooseberry crop was injured by late frost. *William Ingram, Belvoir Castle Gardens, Grantham.*

LEICESTERSHIRE.—Pears are not a good crop generally, although the following varieties, Beurré d'Amanlis, B. Superfin, Louise Bonne de Jersey, and Marie Louise are showing well. Of Apples, those varieties which are carrying a sprinkling are Wellington, Peasgood's Nonsuch, New Cauldwell, Celine, Duchess of Oldenburgh, Braddick's Nonpareil, and Pott's Seedling. *A. Hamsher, Leau Manor Park, Loughborough.*

NORFOLK.—Fruits of nearly all kinds are short in crop, owing to the bad weather experienced in spring and early summer. We had a splendid show of bloom, but there is now but poor show of fruit, Pears, Plums, Apricots, and Peaches are the worst. Cherries are a good crop on standard trees, but not so good on walls, having dropped off a good deal at stoning. Strawberries have been plentiful and fine. There is a good crop of small fruits, but the caterpillar has been very busy amongst the Gooseberries. Nuts, especially Walnuts, are a good crop. *H. Batchelor, Cutton Park, Norwich.*

— With one or two exceptions, fruit trees of all kinds are remarkably healthy, clean, and free from insect pests in this district at the present time. Some kinds of Apple trees are heavily laden with fruit, while other sorts have produced little or none. *A. Lancaster, Holkham Gardens, Wells.*



FIG. 23.—CRONARTIUM RIBICOLA.

A, back of black Currant leaf, with spores of two kinds; B, the Uredospores; C, masses of Teleutospores; D, the same, more highly magnified; E, Teleutospores, from specimens sent by Dr. Plowright.

(SEE P. 133.)

by 14° of frost on the 14th and 15th of April, the trees being wet from snow and sleet on the latter date. These frosts must also have affected the unexpanded Apple and Pear blossoms, though few suspected it at the time. The caterpillar finished the work of destruction here and in neighbouring gardens, so that Apple trees known to have borne good crops for twenty years, have one Apple when there ought to be fifty; and Gooseberries the same. *Wm. P. Roberts, Cuerden Hall, Preston.*

— The fruit crops in this district are much below the average, taken as a whole. Apples and Pears, with very few exceptions, being a total failure, which I attribute to the unripened state of the wood, and the severe spring frosts, which also partially destroyed the Gooseberry crop; Plums, too, are scarce; but Peaches on the open wall are a good crop. Cherries, too, especially Morellos, are a very good crop; and Strawberries and Raspberries extra good crops. *J. Hathaway, Lathom House, Ormskirk.*

— Apples are a very poor crop indeed round this district. Pears are better, but much under the average, the 12° and 13° of frost on Easter Sunday and Monday was most destructive to a very excellent

fruits in a large way. Plums are largely planted here but the crop this year is very light. Gooseberries in most gardens suffered very much with red-spider, and acres of the bushes looked as though they were dead, but they are now growing well. Many growers have not half a crop; others have a good crop. *Andrew Grant, The Vineries, Willingham.*

ESSEX.—Apples, Pears, and Plums showed well for fruit, but before the blooming period was over the trees suffered very much from frosts which were experienced; nearly every morning our thermometer registered a certain number of degrees of frost, and on only seven mornings in the month of April was the thermometer above 32°, and only five mornings were we without frost up to May 15; hence reducing the above-named fruits to about a quarter of a crop. The Gooseberries and Currants suffered greatly; Peaches, Nectarines, and Cherries escaped, being well protected; Apricots were killed in bud by 22° of frost on the morning of February 17. *James Vert, Audley End Gardens.*

— Apples are of excellent quality, and a few varieties are heavily laden, others a poor crop; but the trees are very vigorous. Pears and Plums are

SUFFOLK.—Apples on espaliers are carrying good crops in the kitchen garden here, and the fruit will be fine here. In the orchard there are very few. Peaches and Nectarines on walls are a splendid crop. Of Apricots, good varieties of Pears and Plums, we have a large quantity, but they are hardly up to the average. The fruit crop for 1892 is, with us, very satisfactory. *G. W. Eden, Henham Gardens, Wangford.*

— Considering the prevalent low temperature of the early spring months, it is somewhat beyond expectation to find that most of the fruit crops in this district are so good and plentiful. With the exception of Apricots and Pears, which suffered most, other fruits are about an average crop. Plums, and the fruit trees and bushes, are unusually clean and healthy. *J. Wallis, Orwell Park Gardens, near Ipswich.*

— The fruit crops in this district, with the exception of Apples, are very satisfactory. Of Peaches and Nectarines there is a good set, and thinning the fruit has had to be done with a heavy hand. Our trees have been free from aphid, and the leaves are unaffected with blister. Of Cherries both trained trees and standards are excellent. I never saw the latter carrying better crops. The late frosts caused many of the Gooseberry and Currant trees to drop their fruit; still, the crop is a good one. *H. Fisher, Flinton Hall Gardens, Bungay.*

— The fruit crops in this locality are generally very light. Apples, with the exception of King of the Pippins, Court Pendu Plat, a few Ribston Pippins, and Keswick Codlin, are almost a failure here. There are a few trees in the neighbourhood with a fair crop on them. Pears are very scarce, especially the trees which had a full crop last year. Plums, Cherries, and Apricots are almost a blank. Small fruits are plentiful, Strawberries especially, are the finest I have seen here. *Thos. Blair, Shrubland Park Gardens, Claydon.*

(To be continued.)

HOME CORRESPONDENCE.

BUSH versus TRAINED PEACHES AND NECTARINES.—The ordinary or general mode of managing Peaches and Nectarines under glass is to train the trees on trellises; but where one has a suitable house, there can, I think, be no question that it is far better to grow them in the bush or loose natural form, for though the fruit may not be quite so fully exposed to the sun and light as when on the upper side of a trellis, much more may be grown, on account of the extra leafage and the free liberty the trees have, compared with those restricted to a flat uniform surface. Being of this opinion, and having a span-roofed structure erected three years ago, I planted four trees on each side the central pathway, and they have completely filled the division, which is 30 feet long by 20 feet wide; although very small pot plants when put in, except one about the same size taken from a wall, the growth they all make being as free as a Willow. The Nectarines are on one side, and the Peaches on the other, the first-mentioned being literally laden with fruit, which I have endeavoured to count on one, and they ran up to over 400, the variety being Pitmaston Orange, which are not yet ripe, but I send for the Editor to see fair samples of Lord Napier, and perhaps he will give his opinion of them. I fear, however, in thus alluding to these particular trees myself that I shall be thought egotistical, but I only wish to show that the system of culture is a good one, and far superior to that which has been so long in vogue, but, as already stated, the house used must be light and of proper height for the purpose. The way we manage our trees is to disbud freely, and leave no more shoots than are absolutely needed for the following year; and if they do appear too thick, or throw too much shade during the summer, we cut out, thin, and shorten back any of the top ones that are overstrong, and depend on the laterals for fruiting. Although we have such heavy crops on the trees, we took more off at the thinning-time than there are left; and where the stoning process is over, our practice is to mulch with old Mushroom-bed dung, in which soot is mixed freely, and a little guano. Heavy soakings of water are then given at times, as required, according to

the state of the weather, till the fruit shows signs of approaching ripeness, but no more after that, as a wet condition of the soil affects flavour. When the Peaches and Nectarines are gathered, it is our practice to syringe freely and heavily, and to close the house at about 4 o'clock in the afternoon so as to help force up and develop the buds, and when these are sufficiently prominent, plenty of air is kept on night and day to aid the wood in ripening, as I attach much importance to that, and in maintaining the foliage fresh, healthy, and green up to the last. *J. Sheppard, Woolverstone Park.*

COUNTY COUNCIL HORTICULTURE.—In referring to this interesting subject in your last issue, you ask "what is the result of all this?" that is, the County Council lectures on horticulture in so many parts of the country during the past winter. Well, I would reply, that some foundation has been laid towards the development of wider knowledge than before existed in relation to gardening, but only some foundation, and no more. But then it would be unfair to expect very much more yet. After all, in many districts only four, six, or eight lectures were delivered, and it is not possible to expect that from so small a commencement great results can be hoped for yet. Some good has been done in arousing wider interest in gardening, and there is good reason to believe that very much more interest will be shown in the subject as knowledge is extended. Lecturers' audiences have chiefly been of the working class. In an experience of over fifty lectures, I have found a few gardeners, some of whom have honestly expressed satisfaction, because they had learnt more concerning their art than they before knew, and I have hardly once had to encounter adverse criticism. Still, the bulk of our audiences have consisted of persons other than gardeners, and if, as may be found in all classes of society, there is much of ignorance of common things, still very hearty attention and interest have rarely been wanting. Very much may depend upon the capacity of the lecturer to present his subject in a bright attractive fashion, and also to give really practical information. In some districts attendance and interest would be remarkable, and in others lax and cold, but then it was usually due to the existence of good gardens and allotments, or otherwise. It will be well if County Councils will realise that, in setting in action this horticultural movement, they are doing much to increase the demand for allotments, and thus it becomes all the more incumbent upon these bodies to do their utmost to satisfy that demand. Referring to the recent examination of results instituted by the Surrey County Council, in combination with the Royal Horticultural Society, I would point out that examinations of this kind can only be satisfactory when the members of the audiences take notes freely of what is told them by the lecturers, as only in that way can the mind be refreshed with knowledge, and teachings be theoretically impressed. Now, the average auditor is not only very inexperienced in note-taking, but too often is indifferently educated; hence it was, that out of over 600 persons who heard last winter's lectures in the county of Surrey, only about one-twelfth submitted themselves for examination, the chief places being taken by elementary teachers, who attended the ordinary or school-teachers' courses, and, of course, brought considerable capacity in note-taking to bear on the subject. Without wishing to say a word in deprecation of that particular subject, I fear that rather too much stress is, or has been, laid upon "fruit culture" from a market or profitable aspect. It is not wise to ride that horse too hard. It is not the sole aim and object of gardening. I very much like to press upon auditors a love for flowers of all such kinds as may be grown with comparative ease, and help to beautify our cottage homes, and gratify the most refined senses. Even in dealing with fruit culture, I prefer to advocate it from the domestic rather than from the market or money-making aspect. The happiness of families, their health, comfort, and good-feeding, have their profitable as well as pleasurable aspects, and merit the highest consideration. So far as relates to vegetable culture, very many of the poorest auditors are far from being novices; some of them could now give gardeners many points in vegetable competition; and it is very needful to be careful what is said in the presence of men who can grow ordinary vegetables as well as most. Still, there is a great body who know little, and unfortunately have less taste for gardening. Their sluggish minds the technical education movement may do much to stimulate. I have had already this summer some very pleasurable as well as interesting work in going over large areas

of allotments, noting their merits and demerits, then meeting the allotment-holders, and addressing them in the evening. Such opportunities are like to striking whilst the iron is hot. Better results may be looked for in such case than in addressing gatherings of workers at flower shows, as just then hearers seem more disposed to enjoyment than instruction. However, in those cases very much depends upon the kind of interest locally created—and that differs surprisingly in localities. I think every winter-course should consist of not less than eight lectures, in the proportion of four to ground cultivation, manuring, and vegetable culture; two to fruit culture, and two to flowers. Higher grade instruction may well come later, or to specially-selected audiences. *Alex. Dean.*

RASPBERRIES AT PENSHURST CASTLE.—As I had the pleasure to accompany the members of the National Chrysanthemum Society on the occasion of their visit to Penshurst Castle on July 22, I, like most other visitors, availed myself of the opportunity of walking round the fine old kitchen garden, which is of considerable extent. In old-established gardens, one is sure to meet with something, either in the fruit or vegetable line, which is flourishing out of the common run of things, and seems, as it were, to form a particular feature in the garden for common remark. At Penshurst, the palm must be awarded to the Raspberries. I never saw canes loaded with such fine fruit—as large as medium-sized Strawberries. The idea of training is simple and good. Planted in rows, wide apart, the fruiting canes are simply drawn away right and left to stakes, leaving an open space right down the centre over the stools, so that the young canes can grow up and mature in full sunlight quite uninterrupted. Although the kitchen garden appeared to be in a low situation, I noticed that Mr. Bridger had them mulched with short grass, to keep the moisture in the ground. Such fruit as I saw there, punneted and sent to Covent Garden in good condition, would pay well to grow. It would be interesting if Mr. Bridger would state what name he has this variety under, and how long he has propagated his plants from the same stock. *G. W. Richards.*

PARSLEY.—It is good practice to make a sowing of Parsley sometime during the present month, and when the plants are of good size, to transplant a number of them at the foot of a south wall, say from 6 inches to one foot or more away from it. Another good place for a bed of Parsley, is the border in the front of a forcing-house, the bottom-heat from the beds and the sun keeping the plants slightly on the move; and a good supply of leaves may be gathered earlier than from plants in the open quarter. Parsley placed in the situations specified, are easily protected from frost, and the soil being dryish, the plants are not so liable to injury during bad weather. *H. Markham.*

FRUITS OF THE MANGOSTEEN.—In the issue of the *Gardeners' Chronicle*, July 16, 1892, is an article relating to the importation of ripe fruits of the Mangosteen from Trinidad. It is there stated that the Mangosteen was almost the only fruit worth eating which the Queen had not tasted. This is incorrect, the Mangosteen having produced ripe fruits in the gardens of the Duke of Northumberland at Syon in May, 1855, ripe fruits of which were on that occasion presented to Her Majesty. Thus Trinidad cannot claim to be the first to afford Her Majesty the opportunity of tasting what is so often called "the finest fruit in the world." The Mangosteen, as flowered and fruited at Syon, will be found figured and described in Curtis' *Botanical Magazine*, vol. xi., May, 1855. [See *Gardeners' Chronicle*, April 21, 1855.] *William Higgin, Stanwick Gardens, Darlington.*

RHODODENDRON FALCONERI.—In your issue of June 18, p. 695, a correspondent at Ipswich described the flower of *Rhododendron Falconeri* as shaded lilac, saying it had flowered for the first time with him. On p. 19, vol. xii., a correspondent, "W. D. S.," says that it has flowered with him this year, and that it is primrose colour, and asks if it varies in colour, or if there are other varieties of it? Now, I think your first correspondent has *R. campanulatum*, not *R. Falconeri* at all, although I could not be positive without seeing the plant. "W. D. S." describes it as primrose coloured, but there are many colours in primroses. I think myself it is a somewhat difficult colour to describe. It seems to me the nearest colour, for it is what painters call bone-white, although there are Primroses that will match it exactly, so there is no doubt "W. D. S." has the true variety. He then asks if any correspondent can

say if it changes its colour, or if there are other varieties of it? I do not think there are other varieties of that species, the form being quite distinct from any other; neither do I think it varies in colour. I have it here in quite different positions and soils, but its flowers are the same. I have had about eighty trusses on one plant, about 10 feet in height, and it was a grand sight; but, as a rule, it does not flower every year, but every two years—but it is a most noble variety. *J. Sharman, Rozel Bay, Jersey.* [The colour is dead white, with the faintest shade of yellow, and there is a lilac or pale violet suffused spot at the base of each segment of the corolla. Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JULY 12.—Present: Dr. M. T. Masters (in the chair), the Rev. W. Wilks, Dr. Müller, Prof. Church, and Rev. G. Henslow, Hon. Sec.; visitors—Prof. Emory Smith of the Leland Stanford Jr. University, California, and Dr. Kränzlin of Berlin.

Termes at La Rochelle.—The secretary read a letter received from Mr. Warburton, giving further details of the injuries done by *Termes lucifugus* at La Rochelle. He believes it to have been imported from South America. He says, "It cannot now be got rid of, as it has spread too widely—not only at Rochelle, but at Rochefort, up the river Charente, and at Saintes. I am not certain as to what plants it has attacked, but *Pelargonium* and *Dahlias* are among them. It has destroyed Vines, and any other plants it has come across, such as fruit trees and most flowers. It lives in wood principally, consequently it does damage to plants only in or near houses. As the ants can only move underground in subterranean galleries, I do not think they could do much harm in open fields, where the galleries would always be destroyed by tillage operations. The *Termes* only spreads in two ways, as far as I can ascertain—namely, by the wood in which it exists being carried to other places, and by eating its way from one house to the next. This last process is a very slow one. I do not think that the *Termes* exists in any other part of France than that part of the Charente Inférieure, extending from the entrance of the river Charente to some distance up its course, so far, in fact, as the cargoes of wood from South America used to be carried up in ships in the last century; and at La Rochelle and Saintes, which were both great places for this import in olden times."

Tomato and Sulphate of Copper.—As another instance of the possibly injurious effects of this substance, Dr. Masters mentioned that M. Cornu found that its application, though given in the prescribed quantity, proved fatal to the foliage of the Tomato. Prof. E. Smith was asked if Tomatos and Potatos suffered in California as here, with the same fungus, *Phytophthora infestans*. He replied that though Tomatos are grown in 100-acre tracts, there is no disease to which they are subject, though Potatos are, if not to the same or at least to an allied form of fungus.

Calochilus.—Mr. Ware sent a spray of this Australian Orchid. It has an erect oscillating and fringed lip, the column being declinate, and the whole flower a delicate mauve colour. Dr. Kränzlin observed that it is very difficult to cultivate, as the natural conditions of its native habitat cannot easily be supplied.

Pinus sylvestris Injured.—Dr. Masters showed a drawing of a bough of this tree which he had observed at Boscombe. It had, apparently, been split longitudinally in three pieces. They, however, were re-united beyond the spaces injured. No cause could be assigned for the remarkable occurrence.

Dianthus Attacked by Fungus.—Rev. W. Dod sent some specimens of different species attacked with fungi. They were sent to Kew for examination and report.

Æcidium on Paris quadrifolia.—Dr. Plowright forwarded specimens with the following communication:—"During the present summer Mr. W. Thompson, of Carlisle, and I have been engaged in working out the life history of this *Æcidium*. The details of our work we hope shortly to publish. In the meantime it seems desirable to state briefly that we find the *Æcidium* on *Paris quadrifolia*, which occurs near Carlisle, is connected with a *Puccinia* allied to

P. sessilis, *P. digraphidia*, and *P. Phalaridis*, which species, it will be remembered, have their acidospores on *Allium ursinum*, *Convallaria majalis*, and *Arum maculatum* respectively. The Carlisle *Puccinia* was found by us to germinate freely from the end of April till the middle of May. Applied to the above named host plants it produced no result, but succeeded upon *Paris quadrifolia*, on which plant it gave rise to *Spermogonia* followed by *Æcidia*. The resulting acidospores were applied on June 10 to the foliage of *Phalaris arundinacea*, which in 20 days bore a *Uredo* with dark orange or reddish-brown spores. Further details of our culture will be published shortly."

Cronartium ribicola.—Dr. Plowright sent specimens of this fungus, observing that they were gathered on July 3, in the garden of Mr. C. J. Boyes, Oakwood House, Setch, near King's Lynn. "For several years past I have been looking out for this fungus, but until the above-named day without success (see fig. 23, p. 135). It occurred on black, white, and red Currant bushes in both stages—viz., *Uredo* and teleuto spores. The parasite was found sparingly in two gardens adjoining Oakwood House. Several Pines of various species are growing in these gardens, but the season is too advanced for the *Peridermium* to be encountered in its perfect stage." Dr. Masters observed that this disease on *Pinus Strobus* has been known for several years, but it is only now that the fungus has been found in England on Currant bushes by Dr. Plowright.

Daisy, Monstrous.—Dr. Masters showed drawings of a very unusual form of flower, in which the disc florets had cohered into a campanulate cup, the styles and stigmas uniting into a column. A detailed examination, with figures, will shortly be published.

Tsuga Pattoniana and T. Hookeriana.—He also showed branches of these trees, pointing out the differences. Professor E. Smith remarked upon the great differences which obtain between the maritime horizontal form of *Cupressus macrocarpa* and the erect fastigate inland variety. Mr. Henslow alluded to the fact that the *Deodar*, so different from the *Cedar of Lebanon* in habit in this country, resembles it in its native home on the Himalayas.

Carnations Attacked by Hylemyia Grubs.—In response to the request for observations made by the Scientific Committee, "W. D." writes as follows to the *Journal of Horticulture*, July 14, p. 33:—"The earliest stage of the operations of the grub is to be seen about the early part of June, and any symptoms of decay in the main or lateral stems of the plant should be examined, when a very small yellow grub will be found, changing to a nut-brown colour as it gets older, eating out the heart of the stem, but it cannot be seen until the attacked part is cut away and examined. It also attacks the young foliage and eats its way into the 'grass' (young leaf-shoots at the base of the plants), and any indication of curling or decay should lead to immediate examination. The grub ultimately turns to a small brown chrysalis about a quarter of an inch long. The only remedy is frequently and closely searching, examining, and hand-picking."

University Horticultural Education.—Professor Emory E. Smith gave an interesting account of the new Horticultural Department of the Leland Stanford Jr. University of California. He stated that this great University, which opened on October 1 last, is located about 30 miles from San Francisco, in the heart of one of the largest fruit districts in the world; and had a first endowment of over £4,000,000. The endowment being ample, no fees are necessary, the education being practically free, students only having to arrange for board, books, and clothes. Belonging to the University there are about 40,000 acres of rich land, about 1100 of which are already in bearing as vineyards, a considerable tract being orchard-land. Immediately surrounding the University buildings there are 8000 acres of rich land. Upon this is already located one of the finest stock-breeding farms in America. Something like 1000 acres of this tract will be planted as orchard, and about 100 acres will be used for illustrative horticultural work of various kinds; 250 acres will be devoted to landscape gardening, and about 100 acres to botanical purposes. This is the first University in the world to elevate horticultural education to its true place of dignity among the arts and sciences, by making it one of the leading features of the Institution. It will be noted that, in this case, horticulture has been severed from agriculture, and has been made entirely independent of other departments. Regular students from any part of the world of sixteen years of age or over can enter the University by passing a satisfactory examination.

There is also a provision for the entry of special students of any age or degree of proficiency, without any fee or examination, but simply upon the recommendation of the professor in charge of the department in which he desires to work.

The one idea held in view by the Department of Horticulture is to harmonise and teach simultaneously the practice and theory of horticulture, and to make the subject so attractive that many will seek this class of education, and follow horticultural industries rather than those which at present are made educationally more alluring; so that the brighter youths of the rural district who now flock to the cities will rather be drawn towards rural pursuits than city professions. It is hoped, by thus aiming at the highest possible horticultural education, to elevate horticulture into a recognised position of equality with the most dignified arts and sciences. Degrees will be given in horticulture of equivalent value to those in other departments of the University, when the students have acquired the necessary proficiency. The first degree can be obtained by students in horticulture after four years' satisfactory work. After this three years of independent work are provided, giving the student every opportunity to make original investigations and conduct experiments, as well as follow out any line of practical work; thereby enabling him to earn still higher degrees. As an illustration of what we hope to do, a class will plant say 50 acres in orchard, and the students before acquiring their first degree, will not only have budded and grafted the trees, but will have pruned and brought them into bearing, packed the fruit and shipped it, and kept accurate accounts of their operations.

Of course, at the same time that students are carrying on their practical work in the field, regarding which they have no discretion outside the directions of the professor in charge, they will be conducting their scientific studies, such as entomology, botany, geology, ornithology, zoology, agricultural chemistry, &c. The chief branches of the department (any special one of which students may follow out as a specialty for the three years after obtaining their first degree, and all of which have to be taken in the general course) are fruit culture, fruit preservation, vegetable growing, floriculture, and landscape gardening. One feature of this system of education is that each student must at some period previous to taking his first degree, work for several weeks in one of the best nurseries, canneries, greenhouse establishments, &c., in the country, under the direction of the regular superintendents of the several establishments. This enables the student upon taking his first degree to decide which industry he may prefer to make the chief object of his three years' independent work and study, for the constant aim will be to teach the commercial aspect of every problem as thoroughly as the scientific and operative sides.

Special students who do not pass examinations will have every advantage in the class work; and while they cannot secure degrees they can earn certificates of proficiency, stating the length of time they have worked in the department, and the degree of excellence attained. We are inclined to inaugurate a system of examination quite different from that usually in vogue. The student will be required each day, or at frequent intervals throughout the terms, to give the day following the performance of certain practical or scientific operations both a written and verbal account of the work accomplished. The excellence of these reports, and the general standing of the students in their classes throughout the year, will rather determine their fitness for acquiring degrees than the old-fashioned final examination. At present there are about 520 students at the University, and in October next there will be about 1300; but in following years, when more buildings have been erected, the number will probably be more than doubled. A number of these students are entering, or preparing to enter, the horticultural department. It will be understood that the examinations in this University, and the mental attainments required of the student, are on a par with those of Oxford, in England, and it will thus be seen that a bid is made for students of first-class ability. A large number of the first horticultural authorities in America have been consulted regarding the formation of this department of horticulture, and general satisfaction was expressed at the plans under which the work is, and will be, carried on. The students' expenses at the University need not exceed £5 per month, the charge for board and room being £4 per month, the actual cost to the University. Students who are industriously inclined can

frequently work their way, and scholarships will be offered to those showing great progress in their studies.

This, it will be understood, is a very brief and general outline of the great work in hand, as it would take too long to develop the ideas and plans in detail.

An unanimous vote of thanks was given to Professor Smith by the members of the Scientific Committee for his most interesting account.

JULY 26.—We have not witnessed so large and generally pleasing exhibition at the Drill Hall for some long time. The National Carnation and Picotee Society occupied, with its pretty exhibits, very good in quality, in spite of the unkindness of the weather of late, a good amount of tabling. Gloxinias and Begonias, besides a new South African annual, *Nemesia strumosa* sp. of brilliant and varied colour, from Reading; *Caladiums*, *Sarracenias*, *Nepenthes*, and other insectivorous plants, from various sources; a few choice and novel forms in Orchids, considerable quantities of hardy border flowers, Lilies, together with a large quantity of hardy fruit of much merit, were amongst the principal items shown on this occasion.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and O. Thomas, H. Herbst, B. Wynne, C. F. Bause, F. Ross, Norman Davis, J. Laing, and W. Watson.

Messrs. Jno. Laing & Son, Forest Hill, had an extensive group of well-grown *Caladiums*, including the choicest varieties. Some of the larger specimens were *Albo-lutea*, *Madame Mercier*, B. S. Williams, and *Madame Imbert Kœchlin*; also a collection of decorative *Carnations*, and many varieties of *Pentstemons*, some *Zephyranthes*, &c. (Silver-gilt Banksian Medal.)

Messrs. Sutton & Sons, Reading, showed a batch of their well-known strain of *Gloxinias*, and obtained an Award of Merit for *Her Majesty*, a pure white variety of great size and substance; *Invincible Purple*, a handsome flower, of wonderful good habit; and some of the netted varieties, in shades of pink and mauve, &c., were very beautiful. Messrs. Sutton & Sons also exhibited some plants of the new cross-bred *Begonia Meteor*, suitable for window-boxes, bedding, &c. It was obtained from a cross between B. Pearcei and B. "phosphorescence," the former species being the seed-bearer. The hybrid has the acaulescent habit of B. Pearcei, but blossoms more like B. "phosphorescence," which are bright carmine. It is stated to grow only about 4 to 6 inches high, and all the flower-spikes are produced from the base.

Mr. T. S. Ware, Tottenham, had cut flowers of single and double *Begonias* of great merit. *Princess May*, a large double white variety, received an Award of Merit, as did also *Baronne de St. Didié*, with primrose-yellow flowers, also double (Vote of Thanks). Messrs. Pitcher & Mander, The United States Nursery, Hextable, Swanley, had cut flowers of herbaceous plants, including *Monarda didyma*, *Achillea*, *The Pearl*, and the effective purple spikes of *Liatris spicata*.

Messrs. Jas. Veitch & Sons, Chelsea, had some examples of insectivorous plants in *Cephalotus follicularis*, *Sarracenia Courtii*, *S. Wrigleyana*, *S. porphyro-neura*, *Dionæa Muscipula*, *Drosera capensis*, and *Nepenthes Amesiana*, *N. Wrigleyana*, *N. Burkei excellens*, and *N. Mastersiana*, one of the finest of the dark-coloured varieties; also some cut blooms of varieties of *Rhododendron javanicum-jasminiflorum*. Some very fine flowered plants of *Lilium auratum* and *rubro-vittatum* also came from Messrs. Veitch. Messrs. B. S. Williams, Upper Holloway, exhibited about one dozen species and varieties of *Sarracenias*, and three of *Nepenthes*, also *Cephalotus follicularis*, *Pinguicula caudata*, and *Dionæa Muscipula* (Vote of Thanks). A large exhibit of *Sarracenias* came from the United States Nursery, Hextable, Swanley, of Messrs. Pitcher & Mander; the varieties seemed small and immature as regards the pitcher. We observed many plants of *S. Mitchelliana*, and *S. M. maxima*, some of *Tolliana*, *Swaniana*, *Wrigleyana*, *Variolaris*, *Flambeau*, *rubra*, *purpurea*, *flava maxima*, *formosa*, *illustrata*, *Courtii*, *Vittata maculata*, one of the few that possessed high colour; *Stevensii*, &c. *Dionæa Muscipula* and a *Darlingtonia* were to be seen in the group (a Silver-gilt Flora Medal).

A very extensive collection of cut flowers came from Messrs. Paul & Son, Cheshunt, comprising herbaceous plants, such as *Lilium* in variety, *Oenothera Youngii*, *Veronica angustifolia rosea*, *Actæa racemosa*, *Echinops ruthenicus*, &c.

A couple of dozen plants of *Disa grandiflora* in bloom, and an extensive collection of cut *Roses*, which Mr. Paul says are just in high flower with him at the present time. The same firm had also a large number of hardy border *Carnations* and *Pinks* (Silver Gilt Flora Medal).

Messrs. Clibran & Son, Oldfield Nursery, Altrincham, exhibited blooms of a so-called *Eucharis Clibranii*, obtained from a cross between *E. grandiflora* and *Urceolina pendula (aurea)*. The blossoms are white, and are more campanulate than any of the *Eucharis hybrida* yet raised, and will no doubt be regarded as a novelty worthy of attention.

Mr. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, showed sprays of *Clethra arborea*. This is a greenhouse tree of 15 feet to 20 feet high, producing racemes of white fragrant flowers from the points of shoots. Leaves are leathery, and resemble those of a *Rhododendron*.

Mr. Henry Eckford, Wem, Salop, received a Vote of Thanks for a number of distinct hybrid Sweet Peas, in very beautiful shades and colours. An Award of Merit was granted to a variety called *Lady Beaconsfield*.

Mr. Jas. B. Riding, Chingford Nurseries, received a vote of thanks for some very fine flowers of *Gloxinias* in variety; and Messrs. Cannell & Sons, Swanley, a Bronze Banksian Medal, for really charming blooms of *Tuberous Begonias*, single and double. Mr. W. Marshall was awarded a First-class Certificate, for *Aster diplostephioides*, a beautiful large white flower, with purple blotch in centre; and an Award of Merit for *Crococoma aureo imperialis*, W. A. South, Esq., Neasden, N.W., exhibited a plant of *Dasylirion* in bloom, some 14 feet high (Vote of Thanks). Messrs. Jas. Green & Nephew, 107, Queen Victoria Street, E.C., had a stand with samples of Munstead flower-vases in green and white.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. James O'Brien, Sydney Courtauld, T. B. Haywood, A. H. Smee, J. Jaques, Jas. Douglas, W. H. White, Ed. Moon, Chas. Pilcher, Thos. Bond, H. Ballantine, and H. M. Pollett.

Cattleya Rex (illustrated in *Gardeners' Chronicle*, February 28, 1891, p. 273), was exhibited by Welbore Ellis, Esq., Hazelbourne, Dorking; and by H. M. Pollett, Esq., Fernside, Bickley. Both plants showed the accuracy of the illustration, and the distinctness of the plant itself, but neither, it was said, were so good as the original, or the one which flowered with Mr. Statter. A First-class Certificate was awarded.

Messrs. F. Sander & Co., St. Albans, exhibited a small group, comprising *Cattleya Gaskelliana alba*, *C. Schofieldiana bella*, a very large form; *Odontoglossum Schroderianum*, the curious little *Angracum distichum*, *Cypripedium callosum pulcherrimum*, *C. Dayanum superbum*, two *C. Chamberlainianum*, several new hybrid *Cypripediums*, and the singular bluish-white *Cynorchis triphylla*.

Messrs. Hugh Low & Co., Clapton, also had a small group, the prominent feature in which was *Cattleya Schilleriana Lowii*, a most remarkable novelty with flowers similar to the type so far as the sepals and petals are concerned, but the lip is white, beautifully veined with dark lavender-blue; the whole lip much resembling that of one of the lesser forms of *Zygopetalum Mackayii* (First-class Certificate). *Aërides J'Ansonii*, also in Messrs. Low's group was remarkable; also *Sobralia Lowii*, *Lælia amanda*, *Cypripedium De Witt Smith*, *C. ceananthum* and *Miltonia Moreliana atro-purpurea*. Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr., Mr. Murray), sent *Cypripedium Youngianum superbum* (*Philippinense* ♂, *superbiens* ♀), which had the general aspect of *C. Morgania*, but the petals are much broader and flat (Award of Merit). Another fine hybrid from the same exhibitor was *C. Bryani* × (*Argus* ♂, *Philippinense* ♀), a very handsome hybrid, with broad, deflected petals, heavily blotched with blackish-brown, and white upper sepal, greenish at the base, and with narrow purple lines radiating from the base. Lip greenish-white, tinged light brownish-rose (Award of Merit). Mr. Cookson also showed *C. Youngianum* ×, *C. Tautzianum* ×, and a spike of *C. Morgania* ×.

G. R. Le Doux, Esq., Langton House, East Moulsey, showed a small group, in which were several good forms of *Cattleya eldorado* and *C. e. Wallisii*, *Odontoglossum citrosium*, *Oncidium trulliferum*, *Miltonia vexillaria*, and the curious *Cœlogyne pelastates*, which was awarded a Botanical Certificate.

Messrs. Pitcher & Mander, the United States Nur-

series, Hextable, Swanley, exhibited *Cypripedium Stonei candidum*, *C. tonsum*, *C. Ashburtonia expansum* ×, *C. javanicum superbum*, two plants of a dark form of *C. grande* ×, *C. Curtisii*, *C. superbiens*, *C. chlorops* ×, *Saccolabium Cœleste*, &c. C. J. Lucas, Esq., Warnham Court, Horsham, showed *Eria vestita*, a tall-growing species, with fleshy leaves and long racemes of white flowers, the whole plant flowers, and all being covered with reddish-brown hairs. Also cut spike of *Cattleya Warscewiczii*, with one of the flowers abnormal. F. Wigan, Esq., Clare Lawn, East Sheen (grower Mr. W. H. Young), showed a fine plant of *Platyclinis filiformis*, with about seventy spikes (Cultural Commendation); *Dendrobium Leeanum atro-purpureum*, a fine spike of *Staurosis Lissochiloides* (*Vanda Batemannii*), and a spike of the light form of *Lælia elegans*.

From the Marquis of Salisbury's gardens, Hatfield (gr., Mr. Norman), came six fine spikes of *Saccolabium Blumei*, for which the gardens are noted.

J. F. Alcock, Esq., Northchurch, Berkhamstead (gr., Mr. Wade), sent a plant of *Mormodes citrinum*.

Chas. Winn, Esq., Selly Hill, Birmingham, sent his new hybrid *Cypripedium* × *Edith Winn* (*C. Stonei* ♀ *C. purpuratum* ♂), which showed marked traces of *C. Stonei*, and evidence of merit when stronger. The Committee requested to see it again.

P. McArthur, The London Nurseries, Maida Vale, sent good forms of *Cypripedium superbiens* and *C. Godefroyæ*; and C. Ingram, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), exhibited *Cypripedium Hecla* × (*superbiens* ♀ *Swaniamum* ♂); *C. × The Gem*, (*marmorophyllum* ♀ *insigne Chantini* ♂); and *C. × B. J. J. cœananthum* ♀ *Lawrenceanum* ♂).

Fruit and Vegetable Committee.

Present: P. Crowley, Esq., in the chair; and Messrs. W. Warren, G. T. Miles, A. Dean, W. Bates, J. Willard, G. H. Sage, A. H. Pearson, J. Hudson, F. Q. Lane, H. Balderson, G. Norman, J. Smith, W. H. Divers, Robert Hogg, T. F. Rivers, R. D. Blackmore, Harrison Weir, W. Wilks, H. J. Pearson, J. Cheal, and T. J. Saltmarsh.

There were some excellent examples of Peaches, Cherries, Gooseberries, Tomatos, &c.

Messrs. James Veitch & Sons, Chelsea, had a splendid collection of Gooseberries, especially so when we remember that, on the whole, the fruit is not quite up to the usual standard this season. The varieties staged numbered about eighty, and the following were the best of these. Reds:—*Highlander*, *Dan's Mistake*, *Industry*, *Clayton*, *Companion*. Yellows: *Pilot*, *Leveller*, *Leader*, *Mount Pleasant*, *Tiger*, *Trumpeter*. Greens: *Surprise*, *Telegraph*, *Keepsake*, *Green Overall*. Whites: *Eva*, *Flora*, *Freedom*, *Miss Nightingale*, *Moreton Lass*, and *Ostrich*. Dessert: *Green Walnut*, *Green Gascoigne*, *Early Green Hairy*, *Early Red Hairy*, *Early Sulphur*, *Golden Drop*, and *Whitesmith*. These were all gathered from bushes or cordons of two years old. From the same exhibitors came also five baskets of Cherries in as many varieties, from pyramids, and three dishes of white Currants (Silver Medal).

Messrs. T. Rivers & Son, Sawbridgeworth, contributed a collection of fruit (twenty dishes). The quality was of the finest throughout, and the Cherries and Peaches attracted a great deal of attention. Some fruits of *Rivers' Albatross Peach*, grown in a warm-house, were very fine; but the variety seems to lack colour. Stump the World under the same condition carried much better colour on somewhat smaller fruits. *Peach Early Rivers* had been grown in a cool-house along with *Lord Napier Nectarine*, and the dozen fine fruits of the *Peach* were well ripened, whilst the *Nectarines* were quite hard. *Hale's Early Peach* was represented by two dozen very handsome well-coloured fruits from a cool house. *Early Rivers' Nectarine* had also been grown in a cool-house, and received a First-class Certificate. Several good seedling Peaches and Nectarines were included in the collection, and one of these Peaches struck us as being exceptional. It was the same colour as a first-class coloured Apricot. Of Cherries, there were twenty varieties, and a finer lot could scarcely be seen. These included *Turkey Black Heart*, *Early Rivers*, *Bigarreau Noir de Schmidt*, *Bigarreau de Schreken*, large *Black Bigarreau*, and *Bedford Prolific*, all black varieties; and *Emperor François*, *Bigarreau Napoleon*, and *Bigarreau Monstrueuse de Mezel*, red; and also the *White Bigarreau*.

Mr. R. Gilbert, High Park Gardens, Burghley, excited much interest and comment by some remarkably large fruits of *Tomato Royal Sovereign*, the

seven fruits weighing 10½ lb. (An Award of Merit.) Mr. George Groves, gr. to General Owen Williams, Temple House, Great Marlow, Bucks, obtained an Award of Merit for some fruits of a seedling Tomato obtained from "Maincrop." The fruits were medium sized, and smooth skin.

Mr. W. H. Divers, Ketton Hall, Stamford, had eight dishes of first-rate Peaches, Princess of Wales, Sea Eagle (especially large and good), Barrington, and the Nectarine Peach. (Silver Banksian Medal.) Lord Foley, Ruxley Lodge (gr., Mr. J. Miller), exhibited a dozen fruits of Grosse Mignonne Peach, and a seedling Melon. (A Vote of Thanks.)

Messrs. Carter & Co., contributed bines and fruits of their new Pea, "Daisy," which appeared to be a good large pea, and a heavy cropper.

Mr. Wythes, gr. to the Duke of Northumberland, again exhibited some seedling Melons, one obtained from Wm. Tillery and Eastnor Castle varieties, and another from Syon House and High Cross hybrid, and a third from Eastnor Castle and Syon House. Mr. G. H. Sage, Ham House, Richmond, obtained an Award of Merit for a seedling Melon called Emerald Gem, an American variety. The fruit was rather small, deeply ribbed, and it is described as being a very free-fruited variety; flesh red, and flavour very good. Another seedling, Yellow Gem, came from Mr. J. Fitt, Panshanger Gardens, Hertford. From the Royal Gardens, Windsor, came half a dozen fruits of a seedling Melon, four fruits of Scarlet Princess, and two fruits of Countess Melon. This latter variety is a pretty yellow-coloured fruit. Mr. Owen Thomas, Frogmore, also sent three dishes of Peaches, the following two were ripened out-of-doors, Waterloo and Early Rivers. The other dish was Walburton's Admirable, and consisted of ten very handsome fruits (Bronze Medal). Messrs. J. Hammond & Son, St. Ann's Hill Nursery, Carlisle, sent some well-fruited shoots of a seedling black Currant, W. E. Gladstone, the fruits being large and of good flavour.

LECTURE ON INSECTIVOROUS PLANTS.

In the afternoon a paper on the above subject was read by Mr. A. J. Manda, of the United States Nurseries, Hextable. There was, he said, a great number of species and varieties, many of which he regarded as natural hybrids.

Alluding to *Cephalotus follicularis*, the lecturer said it was a native of King George's Sound, and was introduced into this country some seventy years ago, although it was still considered a novelty. Although this was an insectivorous plant, the best results could be obtained by cultivating it and eeding it in the ordinary manner from the roots, and insects might be entirely excluded by means of a bell-glass.

Dionæa Muscipula (Venus's Fly-trap) could also be grown to greater perfection, by excluding insects, and feeding from the roots.

The genus *Drosera* or Sundew, of which the European species *D. rotundifolia* was well known, embraced a vast number of beautiful species, which are spread over many parts of the world.

Of the genus of *Nepenthes* (see fig. 19), Mr. Manda said that a liquid is produced in the pitcher before the lid is opened, and that when once opened this lid never closes. To cultivate them here, they required a warm, moist temperature, and plenty of water and syringing. The drainage must be exceptionally good, that all fear of sourness be avoided. Good fibrous peat, with the small taken away was the best soil, and in the summer the temperature should never be permitted to fall below 75°. They would require less water in winter.

Sarracenia (the Side-saddle Flower), see fig. 20, inhabited heaths and bogs, where water is abundant. Grown here, with root-foed alone, they were finer than any in their natural homes. *S. rubra* had a delightful fragrance, and to cultivate these plants great heat was not required. In winter they should rest in a cold frame, which would only prevent frost from reaching them, and if they were plunged in moss, they would keep sufficiently damp without watering. In March they should be cleaned and repotted, or top-dressed and placed in a moist house, with temperature about 60°. Give plenty of water and syringe carefully, so as not to break the young growths. Keep close whilst pitchers are forming, for they are very soft and are easily injured. This treatment will keep away thrips and green-fly. Afterwards more air and less shade can be given, so that the various tints may be developed. The soil should be two parts fibrous peat, mixed with some nodules of charcoal and a little rough sand. The pots should be well drained with burnt breeze. The Portuguese Fly-catcher (*Drosophyllum lusitanicum*)

came from Spain and Portugal, as well as from the Mauritius. The lecturer said that this species produced beautiful flowers, but he did not think it lived long in cultivation.

In conclusion, Mr. Manda said that it was quite certain that these plants were provided with various kinds of apparatus for the catching and absorption of insects, but the supply thus afforded was not so good as could be supplied by the intelligent gardener, and those that in their homes are allowed to practise their fly-catching propensities are not so luxuriant, neither do they live so long as those that were fed through the roots in this country.

The Chairman (Mr. D. Morris) said, a good many people might be disposed to ask why these exceptional powers had been developed in these plants, and one theory was, that they grow in poor soils containing but little nitrogen, and that they obtain from the insects, &c., what they could not get in any other way. A theory is held that the juice in the *Nepenthes* does not contain much pepsine until bacteria have been developed, and have set up a fermentation. Professor Henslow said that he had no experience in the culture of insectivorous plants, but they had always been a source of great interest to him. He ventured to think that perhaps the theory respecting the relative absence of nitrogen in the soil in which they generally abound was partially right, but other plants grew side by side with them, and it remained to be explained how it was that they obtained all they wanted, and had not developed similar characters. The Professor also thought that it was very curious that the methods of attaining the same end were so diverse. In *Nepenthes*, the pitcher was merely a developed water-gland at the apex of the leaf; and in the *Drosera*, the apparatus was a sticky fluid exuding from hairs all over the surface; and then again in the *Butterworts*, and the other species a different apparatus to each was found. It was significant that in nature they had poor little roots, and that under proper treatment, the roots greatly developed, and then the plants could be fed through these augmented roots. It seemed that they had degenerated, and were living in their natural homes as semi-parasitic existence.

Professor Williamson, of Manchester, remarked that Darwin called attention to the smallness of the roots, and he, Professor Williamson, who had cultivated them for the last twenty years, found that they grew better each generation, and that by obtaining seeds from them here, and growing them from such source year after year, they gradually recovered the position it was held they had fallen from. But, on the other hand, they must remember that Darwin studied this matter with care, and with such care as has never been attempted since, unless perhaps by some of the German botanists. He found that the seed obtained from those plants that had been fed with insects and with pieces of meat produced stronger plants than those which had derived their nourishment in the ordinary way by the roots. But after all he, Dr. Williamson, agreed that as the method of cultivating them here was better understood, and the treatment given them was more and more suitable to their growth, it would be found that that system would produce better results even than those attained by Darwin.

The Doctor then called attention to the fact that *Dionæas* were being taken from America to such an extent that it was feared that the plant would be exterminated, and urged the imperative necessity of raising our plants from seed obtained in England, and added that he had practised this plan for years with complete success.

NATIONAL CARNATION AND PICOTEE SOCIETY.

—Owing to the great pressure on our space the report of the show of the above held in the Drill Hall, James Street, Westminster, on Tuesday last, will be deferred to our next issue. The blooms were generally remarked to be fresh and large, and in the case of flaked and bizarre varieties less "run" than the wet, cold weather of late had rendered very probable.

MARKETS.

COVENT GARDEN, July 28.

MARKET brisk, with supplies good. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Cherries, ½ sieve	3 0 5 0	Melons, each	1 0 2 6
Currants, Red, ½ sieve	2 6 3 0	Peaches, per doz.	2 0 8 0
— Black, ½ sieve	4 9 5 0	Pine-apples, St. Michael, each	2 0 6 0
Grapes, per lb.	1 0 2 0	Strawberries, per lb.	0 3 1 0
Lemons, per case	12 0 25 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0 12 0	Heliotrope, per doz.	3 0 6 0
Arum, per dozen	6 0 9 0	Hydrangea, per doz.	9 0 18 0
Aspidistras, per doz.	15 0 30 0	Ivy Pelargoniums, 12	4 0 6 0
— specimen, each	11 6 21 0	Lilium Harris, doz.,	18 0 31 0
Begonias, per doz.	6 0 12 0	Lobelia, per doz.	2 6 4 0
Calceolarias, per doz.	3 0 6 0	Marguerites, per doz.	6 0 12 0
Coleus, per doz.	4 0 6 0	Mignonette, doz. pots	4 0 6 0
Cyperus, per dozen	4 0 10 0	Musk, 1 doz.	2 0 4 0
Dracænas, each	1 0 5 0	Palms, various, each	2 0 10 0
Ferns, various, doz.	4 0 9 0	— specimens, each	10 6 84 0
— per 100	8 0 12 0	Pelargoniums, p. doz.	8 0 12 0
Ficus elastica, each	1 6 7 6	— scarlet, p. doz.	2 0 4 0
Fuchsia, per doz.	4 0 9 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	2 0 4 0	Myosotis, or Forget-me-not, 12 bunches	1 6 4 0
Canterbury Bells, doz. bunches	2 0 4 0	Pansies	1 0 2 0
Carnations, 12 blms. doz.	0 9 1 6	Pelargoniums, scarlet, per 12 bun.	3 0 4 0
— 12 bunches	3 0 6 0	— 12 sprays	0 6 1 0
Cornflower, 12 bun.	1 6 3 0	Poppies, 12 bunches	2 0 6 0
Eucharis, per dozen	2 6 4 0	Primula, double	4 0 6 0
Gardenias, per dozen	1 6 3 0	Pyrethrum	2 0 4 0
Heliotrope, 12 sprays	0 3 0 6	Roses, Tea, per dozen	0 9 2 0
Lilium candidum, 12 bloom	0 6 0 9	— coloured, dozen	1 0 1 6
— 12 bunches	18 0 24 0	— yellow (Mare-chals), per doz.	2 0 5 0
— Harrisii, doz.	2 6 4 0	— red, per dozen	1 0 2 0
Maiden Hair Fern, 12 bunches	4 0 6 0	— Moss (French)	12 bunches 6 0 12 0
Marguerites, per doz. bunches	3 0 4 0	— outdoor, 12 bun.	2 0 6 0
Mignonette, 12 bun.	2 0 6 0	Stocks, doz. bunches	3 0 6 0
Orchids:—		Sweet Peas, doz. bun.	3 0 6 0
Cattleya, 12 blms.	4 6 8 0	— Sultan, 12 bun.	2 0 4 0
Odontoglossum crispum, 12 blms.	2 0 6 0	Tuberose, 12 blms.	0 3 0 6

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes Globe, ea.	0 4 0 6	Mushrooms, punnet	2 0 ...
Beans, French, lb.	2 6 3 0	Mustard and Cress,	yellow
Beet, red, per dozen	2 0 3 0	punnet	0 4 ...
Carrots, per bunch	0 4 0 6	Parsley per bunch	0 3 0 6
Cauliflowers, each	0 3 0 6	Shallots, per lb.	0 6 ...
Cucumbers, each	0 6 0 9	Spinach, per bushel	3 6 ...
Endive, per dozen	2 0 3 0	Tomatos, per lb.	0 4 1 3
Herbs, per bunch	0 9 1 0	Turnips, per bunch	0 4 0 0
Lettuces, per doz.	1 6 2 0		

NOTICES TO CORRESPONDENTS.

ARBITRATION, &c.: C. P. Were we in your case we should consult a solicitor. We are unable to advise you.

AMERICAN BLIGHT ON APPLE TREES: R. N. Make use of kerosene emulsion on the stem, branches, and shoots. Recipe:—Dissolve ½ lb. hard soap in 2 quarts of boiling water, and add 1 pint of kerosene oil, and mix thoroughly; before using dilute this with 2 gallons of water for most plants. To be applied in winter, rubbing it well into the bark with a half worn-out painter's brush. The roots should be laid bare, and the soil saturated with soap-suds. This will kill the insects that infest these. Fresh soil should be filled-in over the roots, and both operations will need to be repeated for several years, and the soap-suds watering two or three times in the year, at any season.

CHANCE SEEDLING PEA: R. P. An excellent variety, and worth preserving; pods long and well filled with seeds, of a bright green colour.

CORRECTION: In our last issue we mentioned a class in practical horticulture as conducted in Suffolk by Mr. Jordan. The class in question was conducted by Mr. Sheppard, of Woolverstone Gardens, and the comments made apply to that gentleman. How the mistake originated we cannot divine, but we are pleased to be able to make the correction.

FARFUGIUM GRANDE, *syn.* LIGULARIA KEMPFERI AUREO-VARIEGATA: R. N. The plant was described in our pages in 1857, January 3, from a plant shown by Mr. Glendinning, of Chiswick, at a meeting of the Royal Horticultural Society, it having been introduced by R. Fortune during 1854 and 1856, and whose description of the plant was published in these pages February 25, 1860.

GLOXINIAS: A. W. Y. Of no particular merit.

HAWTHORN SEEDS AND APPLE AND PEAR PIPS: The Young One. The first-named should be stratified as soon as collected; that is, put in thin layers with sand or loamy soil, and protected from frost, sowing them in beds in March. They do not usually appear till the second summer. Apple and Pear seeds if sown in the autumn, and the soil not allowed to freeze, will vegetate in great part the first year, and certainly all will come up the second season.

HOGGIN: C. N. Pebbles—gravel of the size of horse-beans.

LINE: *C. W. D.* Eggs probably of the Lace-wing moth.

MIGNONETTE: *W. T.* Both are excellent and desirable varieties.

MUSTARD AND CRESS AT COVENT GARDEN MARKET: *W. R.* The trade is in the hands of certain growers, who find no difficulty in meeting the demand. You should not engage in the business before first ascertaining by personal enquiry among market men whether a further demand is likely to arise shortly.

NAMES OF PLANTS: *Albert Butcher.* Scilla (*Ledebouria*) lanceifolia, or a nearly-allied species.—*S. H. M. H.* Pyrus aria, the white Beam. Your question should have been addressed to the editor, not to the publisher.—*Southampton.* Yucca flexilis (*Y. acuminata* of gardens), probably. You should have sent leaves and a flowering branchlet.—*J. B. 1.* Veronica spicata; 2, Echium vulgare; 3, Lamium purpureum; 4, Centranthus ruber; 5, Lysimachia vulgaris; 6, the major form of Oncidium longipes.—*F. A. G. 1.* Lycium barbarum; 2, Lysimachia nummularia.—*R. T.* Menyanthes trifoliata.—*J. H. 1.* Clematis flammula; 2, Taxodium distichum; 3, Staphylea pinnata; 4, Cotoneaster nepalensis; 5, a seedling Cypress, probably; 6, Lysimachia vulgaris.—*J. Dutrich.* Odontoglossum Lindleyanum, not *O. crispum*. The Dahlia is a very dark-coloured one, as you say.—*G. P. 1.* Lysimachia vulgaris; 2, Centranthus ruber; 3, Achillea ptarmica, fl.-pl.; 4, Lythrum salicaria; 5, Linaria purpurea; 6, Asclepias Curassavica; 7, Clematis, of the lanuginosa section.—*T. & J. R.* Oncidium luridum guttatum (true).—*C. D. 1.* Send flowers; 2, Fuschia corymbiflora; 3, Diplacus glutinosus; 4, Pteris cretica var. albo-lineata; 5, P. argyrea; 6, Cestrum fasciculatum.—*C. N. A.* Commelina; we cannot say which one.—*H. E.* Corydalis claviculata.—*W. S. L.* Purple fruited egg plant—Aubergine. Pea: without seeing the pods and the ripe seeds we cannot tell you with certainty what the name of the variety is. Géant, a large late French variety; Early Maple, Dwarf Gray Sugar, and many others, mostly French varieties, have violet or purple flowers.—*R. G., Bealey,* Cattleya guttata.

OWN-ROOT ROSES: *T.* The stronger shoots that spring from the roots should be preserved, at full length, and if they have grown to 3 or 4 feet, and you do not want them to grow much longer, fasten them in a horizontal position, or layer the upper portion for 1½ foot, you will then obtain young plants without further trouble. If you stop the shoots now, the resulting shoots will not mature, and would have to be sacrificed at the winter pruning, if not killed before. At the winter or spring pruning of the Roses, about 1 to 1½ foot, or even more, if the wood should ripen well, may be left, and the shoots springing from the pruned shoots will bear flowers. Be sure to thin out entirely, down to the old wood, or to the roots in the case of suckers, the weak shoots, and those that have not flowered during the present season; and cut back those which have flowered to about one-third their length. This last bit of work being performed as soon as the first crop of flowers is over. It applies more especially to hybrid Perpetuals, Teas, and Noisettes.

PODS OF PEAS BROWNED AND CRIPPLED: *T.* The work probably of thrips, although we do not find any of the insects or larvæ upon the pods. Syringe the pods of such plants as are unattacked with soapy-water, in which a little tobacco-water is mixed. The syringing should be repeated.

TUBEROUS BEGONIAS: *E. H. C.* The blooms are very good, as regards colour and size, the single ones being amongst the largest we have noticed.

VINE LEAVES DISCOLOURED: *W. H. M., Munches.* There are no traces of insects or fungus, and in the absence of particulars as to the treatment, we should ascribe the state of the leaves to excessive sun heat and lack of ventilation.

COMMUNICATIONS RECEIVED.—Conqueror (shortly).—*F. B.*—*J. D. S.*, Baltimore—*J. C. J. S.*—*S. C. H. C. G. N.*—*D. T. F.*—*D. M. R. R.* (report not received).—*W. T.*—*W. K. J. A.*—*W. E. G. A.*—*E. M. E.* (many thanks).—*J. H. G. J.* Sanders (too late for the tabulated report, which appeared in our last issue).—*H. W. W.*—*J. B.*—*W. K. R. M.*—*Senex.*—*J. S.*—*E. M.*—*J. D.*—*J. C.*—*D. T. F.*—*R. D. J. O. B.*—*A. P. J. G. B.*—*A. D.*—*J. J. W.*—*R. M. Grey.*—Subscriber, Workshop, next week.—Dewdrop.—*F. M.*—Gardener, see next week.

DRAWINGS RECEIVED.—*J. A.*

DIED.—On July 22, at Upper Edmonton, after a brief illness, HALLIE, the second daughter of HENRY B. MAY, aged 17 years.



HOUSEHOLD TROUBLES.

The supper was laid on the table trim
When out comes, roaring, my young son, Jim,
"Oh! daddy, the rats! A dozen or two
Are gobbling the supper, and baby too."
My wife, with a scream, seized iron and broom,
I clutched a bottle, and made for the room
Never was heard such a hullabaloo!
It woke up the cat, and the terrier, too.
The terrier thought we were hunting the cat,
Got a grip of her tail, as she went for the rat.

Jim, with his hatchet, tumbled over a pail,
And tried to hold terrier back by the tail.
I caught Jim by the wool, but rather too late—
The table received such a bump from his pate
That teapot, plates, lamp, chairs, baby and all,

Were upset on the floor, 'mid crash and squall.
The people about shouted, "Murder! Fire!"
And the police rushed in the cause to inquire;
They'd listen to nothing we wanted to state,
But to the next station lugged me off straight.

Swore I was drunk—nearly murdered my wife,
And of my poor infant endangered the life,
Broke tables and chairs, and the crockery ware;
When the Justice said, "What a savage old bear!"
Not heeding a word my poor wife did swear,
Imprisoned and fined, I cursed my sad fate,
When lately I learned, but rather too late,
Instead of depending on traps, dogs, or cats,
My only protection was "ROUGH ON RATS."

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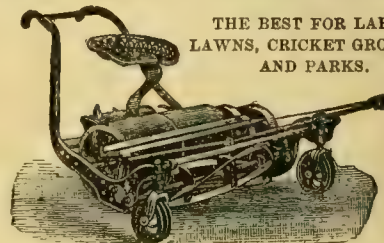
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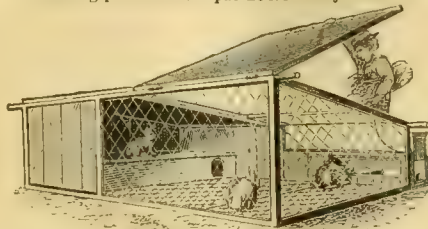
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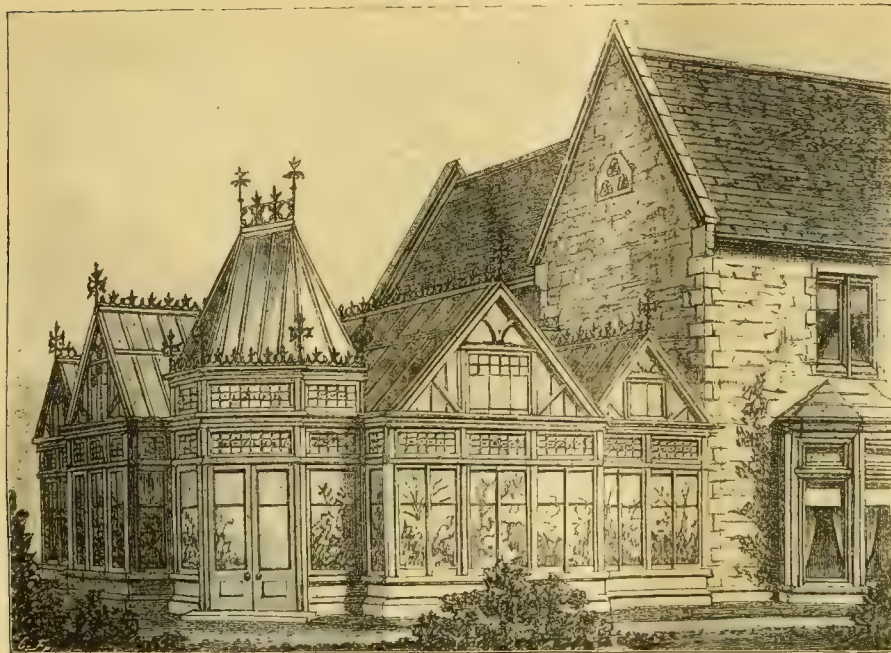
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Friday Next.

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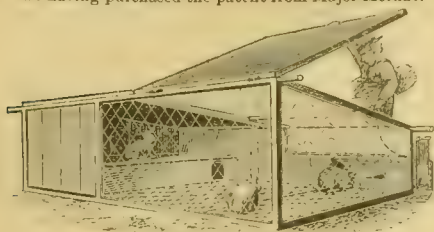
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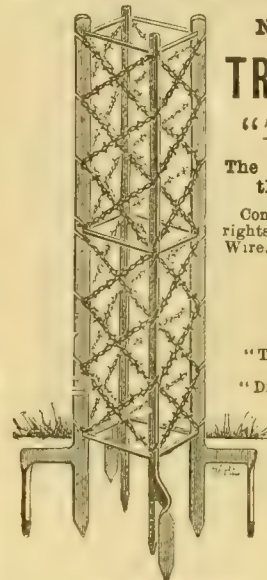
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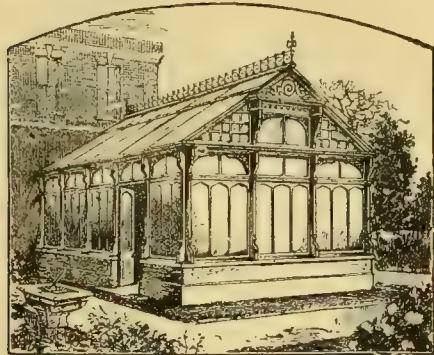
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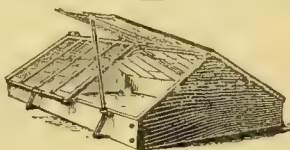
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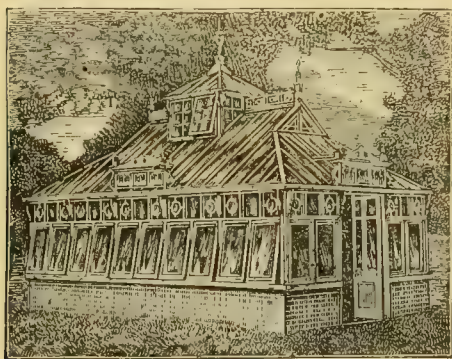


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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 6, 1892.

BUDDING.

ALL rosarians, professional or amateur, have
for the nonce changed their creed, and
instead of paying their devotions to the lovely
blooms they have gloated over for some weeks,
have turned their attention to the wood—they
have all, in fact, become Buddhists, not worship-
pers of Gautama of the golden tooth, but of
pagans of the budding knife; and according to
their needs, so is the extent of the devotion,
from the amateur who has only to do a few
dozen to the grower for sale who has, perhaps,
his hundreds of thousands to finish off before the
month of August is well over. It is not my
intention to describe a process so simple and so
well understood, but to deal with a few collateral
issues which are of importance, and deserve to
be carefully considered. The season is favourable
in many respects, and as there have been great
losses amongst Roses owing to the two last winters
and springs, probably a larger number than usual
will be operated upon.

1. *Time*.—This is, I think, a question entirely
to be decided by the state of the stock and buds
to be used. It may sometimes happen that the
former is sooner ready than the latter, and *vice*
versâ; but when the bark of the stock rises
freely, and when the buds of the Roses to be
used are sufficiently developed, then I think any
time from the middle of June to the middle of
September may be utilised for the purpose.
The month of July has generally been considered
the best month, and so probably it is. Those
buds which are inclined to grow have a good
time to show themselves, but most growers, I
think, prefer the buds to lie dormant during the
winter. Cool days should be chosen, if possible,
and morning and evening rather than midday;
but a rosarian's own sense of comfort will
quickly lead him to the same conclusion.
Standards are all very well, but to kneel down
to bud the dwarfs in a broiling sun is a process
which is the reverse of agreeable, and one which
the rosarian will try to avoid as much as
possible.

2. *Stocks*.—There are now, we may say, two
kinds of stocks on which the operation has to be
performed, the Brier and the Manetti, the
former being again subdivided into standards,
Brier cuttings, and seedling Briers. The former
is very little used now by amateurs, except in
the case of Tea Roses, the general consensus of
opinion being that either standards or half-
standards form the best stock for this class, and
this is the easiest operation that the rosarian
has to perform. The plants are at the proper
height, with little or no stooping to be endured,
and the operator feels this is the sort of
thing that suits him: but, as for hybrid
perpetuals, he does not give them a standard,
and by most opinions are divided as to the
value of the Brier cuttings or seedling

Brier, but the buddist does not always recognize that the seedling Brier is objectionable. Its thin small stem, added to the necessity of inserting the bud close to if not underneath the level of the soil, constitute a task he by no means relishes. The Brier cutting, on the other hand, gives him stouter material to work upon, and he can get through it better.

There remains but the Manetti, the most



FIG. 24.—A METHOD OF SEPARATING THE SHIELD FROM THE WOOD WITH A SILK THREAD, WHICH SUCCEEDS ADMIRABLY IF THE BARK RUNS EASILY, THE BUD BEING DETACHED WITHOUT INJURY.

favoured of all stocks, its bark rises so easily, the wood is so stout, and the vigour of the stock is so great, that it is no wonder so many prefer it; the Rose foreman of the nursery can tell you what number he and his mates can get through in a day, and what a pleasant operation it is. The number, however, of hybrids budded on Briers is yearly increasing, and some growers profess that for all kinds of Roses the Brier is to be preferred.

The Bud.—I think that more importance ought to be given to this subject than has hitherto been done, and greater care exercised by the amateur who buds his own Roses, and has the matter under control. It is a law of Nature that like produces like, and the principle of heredity has come to be more fully recognized than it used to be; it holds good in the vegetable as well as the animal kingdom. No one who has an inferior animal cares to breed from it,

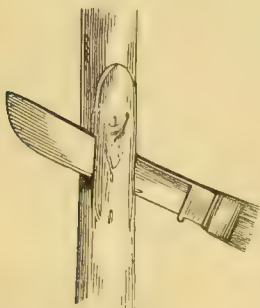


FIG. 25.—THE USUAL MANNER OF TAKING THE BUD FROM A SHOOT.

and the last thing I suppose a gardener would dream of if he had a fruit tree which either bore inferior fruit, or was barren, to propagate from that tree. Now there are some things that seem to me to point to the existence of the same state of things in the Rose. Take for example what are called "sports." One branch of a bush or tree shows a departure from the type which it is considered desirable to propagate; the buds must all be taken from that one branch; for this purpose it would not do to take it from any other part of the bush, but the buds on that one

branch may all be expected to be of the same character; sometimes, indeed, it appears difficult to permanently fix the sport, and there is a tendency to revert to the type.

Again, other branches of a bush may be blind, that is, produce no flower buds, and this is the case with some Roses more than with others; while, again, I think most Rose-growers have noticed that the blooms on one bush are inferior to those of another of the same variety; they are thinner, and less satisfactory. These facts all point to a difference of strain in many of our Roses, just as, again, we see many varieties altered in constitution so as to become climbing Roses instead of being dwarf close-growing. I therefore hold it to be a matter of paramount importance that the utmost care should be taken in the selection of buds. In the first place, I do not think that any bud should be taken from a flowerless shoot. It might get over this habit in the next season, but, as a rule, I think not, and that it, and anything propagated from it, will disappoint the grower. In the same way, where sports have to be budded from, care must be taken that the buds be taken from a flowering shoot. Sometimes a shoot is strong, has good fat-looking buds, and the grower may be tempted, although it has not flowered, to use them. I think that he had better not. I do not suppose that this has been absolutely proved, and therefore we can but act on inference, but I believe it would be found to be correct if the matter was really tried. The same where sports have to be propagated; the greatest care should be exercised only to use those buds where the sport has remained constant. A friend told me that out of a row he had budded of



FIG. 26.—SHOWS THE SHIELD IN PROCESS OF BEING DETACHED FROM THE WOOD IN THE ORDINARY MANNER.

Sir Rowland Hill 75 per cent. reverted back to Charles Lefebvre, from which it had originally sported. I do not know where he got his buds, but if he had to bud them next year he would take very good care not to use the buds of any of those bushes which had thus played him false, and hence it is of great importance that when a new Rose is brought out it should be distinctly stated whether it is a seedling or a sport; for if the latter there is no guarantee of its fixedness, and it would have to be carefully watched. If these things be as I have stated, it is quite evident that there is likely to be disappointment somewhere in plants purchased from Rose growers; it is impossible that they can take this care—they have to propagate tens and hundreds of thousands. A budder goes down a row of plants, takes off the buds which seem to him to be ready; he does not stop to examine whether they have flowered or not, and when these plants are distributed, some may get into the hands of those who will feel that through some want of care or bad management of their own their plants do not act as they expected. There are some growers who, I believe, do give orders to their men not to use flowerless shoots; but all who know the virtues of the much-petted British workman are well aware that he will not allow any matter of so small a character to once influence him.

Perhaps some on reading this may say, "What a bother, and how troublesome to have to take so much care about so simple a matter!" Yes, but is there anything to be had without trouble and care? Of course, things may be done in a kind of way without it, but to do any matter well there must be trouble, and whether is it better to do this than to have the

vexation of seeing, when the Rose season comes on, and you are expecting to see fine blooms, that you have many a vacancy, and others with inferior flowers?

We have had in many respects a very doubtful season, but the weather has been favourable, so far, for budding, and with a little care there ought to be no blanks. Cool, very cool, weather, and occasional rains, are all in favour of the budder, as far as his stocks and buds are concerned, while they add materially to his own personal comfort. *Wild Rose.*

NEW OR NOTEWORTHY PLANTS.

MARICA OCCIDENTALIS, Baker, n. sp.*

THIS new species of Marica resembles *M. Northiana* in colouring, but the flower is not so large, and the leaves are much shorter. It was imported by Linden from Peru, and this is the first time we have had any species of this genus from the west side of the American continent. Like the other species, it needs stove heat. It flowered at Kew for the first time this summer, in July.

Leaves, five, in an erect fan-shaped cluster, ensiform, bright green, the central ones a foot long, above an inch broad at the middle. Stem erect, above a foot long, broadly winged throughout, with a large free leaf below the inflorescence. Clusters of flowers three; spathes cylindrical, an inch long; valves firm, green, lanceolate. Ovary protruded from the spathe, cylindrical, 6-sulcate, one-third of an inch long. Outer segments of the perianth oblong, white, spreading, an inch long; inner half as long, convolute, the concave base mottled with brown, the ovate tip with violet. Anthers linear, white, adpressed to the styles; filaments free. Style-branches white, connivent; crests erect, ovate-lanceolate. *J. G. Baker.*

NEW ORCHIDS.

The second decade of new Orchids described by Mr. Rolfe appears in the May-June number of the *Kew Bulletin*. With one exception, the species are represented in European collections, as will be seen below:—

1. *Pleurothallis subulata*.—A species allied to *P. cardiophallia*, Rchb. f., with cordate-oblong leaves and dark lurid-purple flowers, from the collection of Baron Hruby, of Peckau, Bohemia. Its native country is not recorded (p. 137).

2. *Restrepia ecuadorensis*.—An Ecuadorean species of the affinity of *R. antennifera*, Kunth, but with shorter lateral sepals and other differences, though with a general resemblance in coloration. It was imported by Messrs. F. Sander & Co., of St. Albans, and flowered in their collection (p. 138).

3. *Restrepia Shuttleworthii*.—A small, brightly-coloured Andine species, sent to Kew for determination by Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, in March, 1891. It is allied to the Guatemalan *R. xanthophthalma*, Rchb. f., but the flowers are more heavily marked with crimson-purple blotches, and other differences. A plant from the same source flowered in the Kew collection in March of the present year (p. 138).

4. *Dendrobium platycaulon*.—A very singular species, allied to *D. lamellatum*, Lindl., but with the flowers twice as large, and a very different lip. The curiously-flattened pseudobulbs bear from three to five leaves near the apex, and racemes of three to six straw-coloured flowers. It is a native of the Philippine Islands, and was introduced by Messrs. F. Sander & Co., of St. Albans (p. 139).

5. *Bulbophyllum densiflorum*.—A small species allied to *B. triste*, Rchb. f., but with a longer raceme of yellow, not deep purple, flowers. It is a native

* *Marica occidentalis*, Baker, n. sp.—Acaulis, foliis pedalis ensiformibus nitidis viridibus; caule plano alato apice folio libero praedito; spathis 3 cylindricis, valvis firmis viridibus; pedicellis spathis aequilongis; ovario cylindrico 6-sulcato; perianthii segmentis exterioribus oblongis albis; interioribus multo minoribus convolutis apice maculis violaceis decoratis; styli cristis ovato-lanceolatis.

of the Eastern Himalayas, and was sent to Kew for determination by Mr. Nelson Campany, The Gardens, Thedden Grange, Alton, Hants (p. 139).

6. *Eria cristata*.—A pretty little species belonging to the section *Cylindrolobus*, and allied to *E. marginata*, Rolfe. The flowers are white, with some yellow markings on the lip, and a hairy crest at the base of the front lobe, in allusion to which the name is given. It is a native of Moulmein, whence it was sent to Kew by Mr. C. Peché in 1882 (p. 139).

7. *Odontoglossum auriculatum*.—A pretty little species allied to *O. Lindleyanum*, Rehb. f., but differing in its hastately-trilobed lip, the disc of which is light purple instead of brown. It was imported by Messrs. F. Sander & Co., of St. Albans, together with *O. nævium*, Lindl. The name is given in allusion to the ear-like side-lobes of the lip (p. 140).

8. *Odontoglossum guttatum*.—An interesting species allied to *O. odoratum*, Lindl., but with fimbriate column-wings, and light-yellow flowers, irregularly blotched with chocolate. Its fimbriate column-wings recall *O. crocidipterum* and *O. præstans*, which are different in other respects. It is a native of Ocaña, whence it was introduced in 1886 as *O. blandum*, Rehb. f. It flowered with *G. R. le Doux*, Esq., of Langton House, East Molesey, in March, 1892, and a plant has been presented by him to the Kew collection (p. 140).

9. *Vanilla ensifolia*.—A species from the Cauca province of New Granada, characterised by its narrow sword-like leaves. It is described from dried specimens at Kew and in the Herbarium of the Pharmaceutical Society (p. 141).

10. *Spiranthes olivacea*.—A small species with dark olive-green leaves, marked with a few white spots, and light olive-green flowers, tipped with light pink, and a whitish lip. It was introduced from North Peru by Messrs. Charlesworth, Shuttlesworth & Co., of Heaton, Bradford. A plant presented by them to Kew flowered in March of the present year (p. 141).

We also observe a new genus of Orchids, described by the same author, from a collection of Solomon Island plants recently made by the Rev. R. B. Comins. It belongs to the *Anætochilus* group, and has handsome red and green leaves. It is said to be allied to the genus *Macodes*, and is called *Pseudo-macodes Cominsii*.

BOOK NOTICE.

THE SILVA OF NORTH AMERICA, &c.—By Charles Sprague Sargent, vol. iv., Rosaceæ—Saxifragaceæ. (Boston and New York, Houghton, Mifflin & Co.)

THE fourth volume of this publication amply maintains the reputation acquired by earlier volumes, as within its limitations the most important work of its kind that has yet been produced. The text comprises full descriptions of the trees of the North American continent, together with bibliographic references, historical notes, discussions on geographical distribution, and indications of their value as timber or fruit trees. The task has fallen into appropriate hands, for no one could be found as competent to deal with this subject as the Director of the Arnold Arboretum of Harvard University and the editor of *Garden and Forest*. As for the illustrations, they fulfil the requirements of botanists, as being faithful representations of the plants as they are, not as the draughtsman thinks they ought to be, and not "artistic" smudges, which leave as much, or more, to the imagination than they convey to the intelligence. The drawings were originally made by Mr. Faxon, and have been engraved under the superintendence of the famous French artist, M. Riocreux, by MM. Philibert and Eugène Picart.

In the present volume many very interesting subjects are passed in review, as may be understood when it is stated that the genera now treated of include *Prunus*, *Pyrus*, *Cratægus*, *Amelanchier*, and other genera of Rosaceæ; *Chrysobalanus* *Isaco*, which

at first excites surprise at its presence, but its existence in Florida justifies its inclusion in this volume. Professor Sargent's opinion on certain botanical points will be perused with interest; thus, he takes a broad view of the limits of genera, and includes under *Prunus*, as subgenera, *Amygdalus*, *Emplectocladus*, *Armeniaca*, *Prunus* proper, *Cerasus*, *Padus*, and *Laurocerasus*. Similarly with *Pyrus* he groups as sections, *Malus*, *Pyrus* proper, *Aria*, *Aronia*, *Micromeles*, and *Sorbus*. The genus *Cratægus* again is one of special interest to tree cultivators, on which account, and as serving to give an indication of the contents of the book, we may cite the following passages, omitting, however, the bibliographical citations and extracts which our space will not allow us to copy.

"*Cratægus* is widely and generally distributed through the temperate regions of the northern hemisphere. About forty species, nearly equally divided between the Old World and the New, can be distinguished. Fourteen are found within the territory of the United States, a larger number of species occurring in the region between the Red and the Trinity Rivers in Western Louisiana and Eastern Texas than in any other district of similar extent. Three species at least occur in Mexico, and of these one ranges southward to the mountains of Ecuador, the most southern country which any member of the genus is known to reach. In Europe, where *Cratægus* is distributed from Scandinavia to the shores of the Mediterranean, and from the Atlantic to the Black Sea, fourteen species are now generally recognised; in the Orient, six endemic species are known; two occur in the Himalayan regions of Central Asia, and three in China and Japan.

"*Cratægus* has few useful properties. The wood of all the species is heavy, hard, and solid, and is sometimes used for levers, the handles of tools, and other small articles. In the United States, the fruit of some of the species is made into jellies and preserves, and in northern China the fruit of *Cratægus pinnatifida* is employed for the same purpose. The Old World *Cratægus oxyacantha*, the most widely-distributed plant of the genus, is sometimes cultivated in Afghanistan and the north-western Himalayas as a fruit tree, and in some parts of Europe its fruit is fermented and used to strengthen cider and perry. Many of the species are esteemed as ornamental plants, and *Cratægus oxyacantha*, with its numerous varieties developed in cultivation, has been for centuries a favourite park and hedge plant in Europe.

"The American species of *Cratægus* are preyed upon by numerous insects, and are often injured by serious fungal diseases.

"The generic name, from *κρatos*, refers to the strength of the wood produced by the different species."

The species are treated in the same way, so that the book is a veritable encyclopædia. Little or nothing is left for the systematic botanist to do, so that the anatomist and biologist of the future will find their materials ready to their hand, and their course clearly mapped out for them. Needless to say, the planter and the tree-lover will find all available information within the covers of this most notable book.

CORDON OR TRAINED GOOSEBERRIES.

It is only right that those amateurs who may be enamoured of the terms cordon and trained, should know that these methods of growing the Gooseberry and Currant involve some small amount of labour in summer thinning and shortening of the shoots.

By cutting back a one-year old plant, be it Currant or Gooseberry, you get the foundation of the future cordon in three or four shoots that result from the cutting back. These shoots should be allowed to grow unrestrained for one year, and then be slightly topped and fastened to a stake if meant for an upright cordon, or in other ways if intended to grow obliquely or horizontally.

Of course, these shoots will bristle in two years with short laterals for their whole length, and if these are allowed to grow at will, they will make fruit gathering a disagreeable bit of work—in fact, all but impossible without hedgers' gloves, for the hand must be passed through and amongst them to reach the fruits, which hang entirely on the main stems at that age. Hence the need for a summer pruning, at which time the laterals are shortened to half their length, the weakest cut down to a snag half an inch long, or removed entirely, if fruit-spurs are numerous enough, and the leaders of the main shoots laid-in and made secure, and, finally, two or three new shoots taken from near the ground laid-in, to take the place of the old ones that will need renewing piecemeal. It is not necessary to lay in these shoots from the base every year, once in three years being sufficiently often, and it holds good of Currants as well as Gooseberries. Treated in this manner, these small fruits may be planted in lines by the sides of walks, say 1½ feet back from the edging, and 3 feet from plant to plant, or they may be planted in a quarter by themselves, in lines 4 feet or more apart. By having upright cordons on stout stakes sawn off at one height, say 5 feet, and secured neatly with slating laths stretching down the lines, and nailed on to the top of each stake, the whole is kept in precise form, and the netting of the fruit is easily done, but the nets should not be laid on these laths, but on others at wider distances apart, and rising 1 foot above the tops of the plants, any neglect of this causing the nets to get badly torn.

At the winter-pruning, all the laterals that were left at half their length at the early July pruning must be cut back to three-quarters of an inch from the base, long fruiting-spurs—that is, those that are longer than 3 inches—cut away entirely, or shortened, new shoots laid-in, and everything higher than the stakes cut off.

In fastening these upright-growing plants, tarred string or willow shoots should be used for ties, except for the youngest shoots, for which strong bast is best. In oblique or horizontal cordons, if these are grown on a wall, the stems to the number of four may be spread out—say, 1 foot or 9 inches apart, or they may be tied in a bundle round a wire or a wooden rail. For these, the same kind of treatment as regards pruning is required. *Yellow Hornet*.

ORCHID NOTES AND GLEANINGS.

MESSRS. JAMES VEITCH & SON'S Cattleyas and *Lælias* are now almost out of bloom; greater prominence seems to be given to the rarer plants. Among these, such is the new hybrid, *Disa Veitchii* (*racemosa* × *grandiflora*), one spike of which was carrying twelve flowers, which are of a rosy-crimson, and of so much beauty that the species bids fair to run the older *D. grandiflora* hard for the first place; and, beside being a very free grower, it is a certain flowerer. Another good plant is *Phalænopsis Artemis* × (*P. amabilis*, Bl. ♀, *P. rosea* ♂), a decided acquisition, with flowers of a delicate pink colour unlike those of any other *Phalænopsis*. Beside it stood the pretty and rare *Cypripedium Aylingii* × (*niveum* × *ciliolare*), whose white purple-spotted flowers resemble those of *C. niveum* in colour, but with more ample sepals and petals. It has much beauty, and is of a class that is likely to be always rare. *Cypripedium Chamberlainianum*, too, a most quaint and beautiful new species, was noted in several examples, each of which, in the rich crimson spotting of the pouch, or in some other particulars, differ from each other, all being very handsome, and none the less desirable because of these differences. Another noteworthy species which, if not new, is still very rare, is the curious, fleshy-leaved *Trichopilia hymenantha*, a plant of which was carrying several pendulous eight-flowered racemes. The flowers are white, speckled with bright reddish-purple on the lip. It is a distinct and desirable species.

Other plants not often met with, but which are now in bloom at Messrs. J. Veitch & Son's nursery,

are *Dendrobium atro-violaceum*, the snow-white *D. aqueum*, the rich vinous crimson-coloured *Epidendrum O'Brienianum*, an almost perpetual flowering plant; a giant form of *Oncidium longipes*, which bears six or seven flowers on a spike; an unknown *Lycaste*, with white petals and lip, and the perfume of *Primroses*. There is also a large lot of rare *Cypripediums* in bloom, species and hybrids; some *Cattleya Mendeli*, of fine quality; a fine show of *Oncidium macranthum*; and the East India houses are replete with superbly-cultivated specimens of *Vandas*, *Saccolabiums*, *Aërides*, &c., a few being in flower. The Rockery show-house was gay with the flowers of the Orchids of the season, as usual.

THE CEDARS, BANBURY.

THE CEDARS is the residence of J. Coleman, Esq. an ardent lover of gardening, who has been very successful with the cultivation of the tuberous *Begonia*, and many of the finest varieties sent out by the best raisers are to be found in his collection. Those in flower at the time that I saw the gardens were *Dr. Feltz*, very fine, bearing large double flowers of deep crimson. *B. Mrs. H. Coleman*, raised by Mr. Coleman, a very brilliant deep scarlet flower, which, when fully expanded, measures 6 inches in diameter. *Golden Queen*, a choice double-flowered yellow variety. *Professor Henry Smith*, another double-flowered yellow of a different form, with flowers 5 inches across when full blown. Among the whites in flower were *Her Majesty*, of a pearly hue and much substance of petal, a fine flower and a good grower. *Albert George*, *Mrs. H. G. Murray Stewart*, *Edward's Red Eye*, *Mrs. Armstrong*, *Frances F. Fox*, and *Mrs. G. Price* were among the other good varieties noticed. *Begonias* are not the only plants which have done well at The Cedars—Orchids figuring prominently, and they are cultivated equally well with the *Begonias*. Several good *Cattleya Mendelii* and *C. Gaskelliana* were in flower, besides various *Cypripediums* and *Dendrobiums*, and all in fine health and promising to flower well again next season. Considering that this place is quite new, and the proprietor a gentleman deeply interested in plant culture, we may confidently look for fine things at no distant period. J. M.

PHENIX PARK, DUBLIN.

THIS charmingly-situated royal park covers an area of 1760 acres. It is 6 miles round, contains 16 miles of excellent roads, and a like length of equally good footpaths, the most frequented of these being well lighted with gas-lamps. The park has much to show in beautiful trees and varied scenery. There are majestic Oaks with trunks 3 to 4 feet in diameter, and said to be about 500 years old, and numerous ancient Elm and Beech trees of great size and handsome outline; deep valleys with lakes in the bottoms, and wooded slopes; broad expanses of furze-covered land, level plains, and shady groves, and perhaps finer views of mountain scenery are obtained from here than can be had from any other royal park in Her Majesty's dominions. In May and June the flowers of furze, and of many acres of Hawthorn trees, or, rather, huge bushes, make a grand display of colour, and form a great attraction to the Dublin citizens.

"The Whitethorn-bush with seats beneath the shade,
Was for talking age and whispering lovers made."

There are some thriving woods, consisting of various species of timber trees from sixty years old down to those which were quite recently planted. The soil is a stiff boulder clay on the carboniferous limestone, and any quantity of the finest gravel of all sizes is procurable within the limits of the park from an extinct sea beach and an overlying eschar of gravel.

It may be interesting to mention that the so-called "fifteen acres" used for the manœuvring of troops is a fine plain of 500 acres. Fifteen hundred head of sheep, and over a thousand fallow deer, said to be the finest under the Crown, are grazed in the park.

The People's Garden is the appropriate name given to that portion of the Phoenix Park which is devoted to flower gardening, and the area is about 16 acres. Within that space of ground a charming variety of scenery is found, scenery to which Nature has contributed liberally, and which the landscape gardener and park bailiff, Mr. William Dick, and his predecessors in the post, have made the most of. We found great breadths of velvety lawn, with large flower-beds, and isolated groups of shrubs, bordered with choice perennials, herbaceous and other plants, and surprises met one on every hand. Here are to be found fine examples of carpet-bedding, of ribbon-borders, and of subtropical gardening. In one part the pedestrian descends some zigzag walks, amidst huge boulders, piled up very naturally, and amongst which numerous alpine, and some fine specimens of *Phormium tenax variegatum*, and *Hyacinthus candicans* were observed to flourish, and further on are some deep ravines, whose sides are clothed with many kinds of shrubs, climbers, trailers, and through which streams lazily wend their way in the direction of the adjacent Liffey. In this part numerous seats and capital shelters of the Swiss style, open at one side, are provided, and perhaps the best of these is one situate at the top of the expanse of green sward, in the centre of which stands the statue of the Earl of Carlisle, which would afford sitting accommodation for a great number of people. Immediately in front stretches a lawn, with well-filled flower-beds and borders at intervals round the outside, and isolated trees and shrubs, and beyond is the fine range of the Royal Military Hospital buildings that block the view on one side, whilst away (some twelve and seven miles respectively) in front and extending to the right and left, are the Wicklow and Dublin mountains, and a charming landscape in the middle distance.

About 100,000 bedding plants are used for summer bedding, and 150,000 bulbs for spring, besides myriads of Wallflowers, *Aubrietias*, *Doronicums*, *Arabias*, and many others. The bulbs used are largely of Mr. Dick's propagation. Subtropical plants and carpet-borders were in fine condition at the time of my visit, the moist climate being very congenial to their requirements. Tuberous-rooted *Begonias* made a grand display, and Mr. Dick considers them, as many others do, as being infinitely better than *Pelargoniums* for bedding purposes. *Violas* are largely employed, especially for forming the groundwork for various standards and pyramidally-trained plants.

Beds arranged as follows were very telling in effect, especially when viewed in connection with the several examples of carpet-bedding patterns, good in design, arrangement of colours, and keep, namely, Flower of the Day (variegated) *Pelargoniums*, intermixed and edged with blue *Violas* with "dot" plants of *Abutilon Thomsonii*, the pale green leaves of the latter, marbled with gold, showing to great advantage above the ground of light and blue. *Golden Harry Hieover*, and standards of *Acacia lophantha* planted in a groundwork of, and edged with, *Blue Perfection Viola*, made a pretty bed. A long bed having *Calceolaria amplexicaulis* in the centre, then a good band of *Mrs. Gibson* (scarlet) *Pelargoniums*, edged with *Sedum Lydium*, produced a quiet though pleasing effect; the same may be said of a similarly-shaped bed, having a centre of single-flowered *Petunia*, with a band a yard wide of *Mrs. Turner* (pink) *Pelargoniums*, and edged with the large silvery-leaved *Duke of Edinburgh Ivy-leaf Geraniums*, pegged into position. Beds having *Cannas* in the centre, and surrounded by *Begonias* and standards of *Acacia lophantha*, with stems 2 inches in diameter, and *Echeveria metallica*, 18 inches high, round the outside, contrasted well with the other arrangements, as also did four dozen standard plants of *Ficus elastica*, together with several similarly-grown plants of *Heliotrope* and silver-leaved *Pelargoniums*, set in a ground of *Harrison's Musk*, with *Alternantheras* and *Pyrethrum laciniatus*, forming panels at the sides and ends of the large square bed thus arranged.

Contrasting with these were circular beds having centres of *Helen Linsey* (pink), with broad

bands of *Mrs. Mappin* (variegated) *Pelargoniums*, with a judicious intermixture of young plants of *Acacia lophantha* from 2 to 3 feet high, the whole being edged with a good band of blue *Lobelia*, *Dracenas*, *Ricinus Gibsoni*, and *Fuchsias*, planted on a groundwork of *Harrison's Musk*, with bands of *Iresine Lindenii* (dark), *Pyrethrum* (Golden Feather), and *Alternanthera paronychioides major*, edged with *Echeveria secunda glauca*, made a fine contrast to the arrangement just described. A circular bed, about 20 feet in diameter, had a telling effect planted as follows:—A good-sized plant of *Kentia australis* occupied the centre, surrounded by *Agave americana fol. aur. var.*, *Yucca alifolia variegatum*, as well as the green-leaved variety, *Dracenas*, *Echeverias tabuliformis* and *metallica*, these being planted on a carpeting of silvery *Sedum*, and around which were bands of *Alternanthera paronychioides major*, *A. lutea*, golden *Arabias*, with "dot" plants of *Echeveria metallica* and *Pachyphytum bracteatum* in the line dividing the *Arabias*, and a band a foot wide of the blue-foliaged *Kleinia*, the whole being edged with *Echeveria secunda glauca*.

It may be interesting to mention that the People's Garden is within 400 yards of Sackville Street, the principal street in Dublin, and perhaps one of the finest of its kind in the world, and that the park has eight entrance gates and lodges, that it is more than four times the size of Regent's Park, London, and nearly five times as large as Hyde Park. The park contains the Vice-regal Lodge, the Chief Secretary and Under-Secretary's lodges respectively, the Royal Zoological Gardens, wherein are said to be the finest lions in Europe, the Ordnance Survey Barracks, the Royal Hibernian Military School, and the *dépôt* of the Royal Irish Constabulary. In conclusion, I may be permitted to say that the practical manner in which all the details and good keep of the gardens and park are carried out, reflect great credit on Mr. William Dick. *Tourist*.

IRIS LORTETI (BARBEY).*

THIS most beautiful *Iris*, belonging to the *Oncocyclas* section, was discovered some years ago between Meis and Hounin in South Lebanon, by Dr. Lortet, the accomplished naturalist of Lyons. It was described by Barbey, *Herborisations au Levant*, p. 178, 1882, who there gives a large coloured figure of it. Thanks to the unwearied zeal of Mr. Max Leichtlin, a considerable stock of roots has recently been imported from Palestine, and is now in the hands of Mr. V. Tuberghem, of Haarlem, who supplied the flower represented in the accompanying figure.

The *Oncocyclas* group of *Irises* is best known through *Iris Susiana*, which has been in cultivation in western Europe for more than two hundred years, and is still more widely grown than any other member of the group. *Iris Susiana* has its home in western Persia, and stretching away towards the Caucasus lives the next best known, *Iris iberica*. This part of the world may indeed be regarded as the centre of the group, and as we pass westward along the southern regions of Asia Minor, we find several forms, more or less closely allied to *I. Susiana*, all of them beautiful. Near Mardin grows the lovely *I. Gatesii*, not far off the striking *I. Heylandiana*, more to the west in Cilicia the handsome *I. Saari*, and in Palestine is found an *Iris* which, sent to me from the neighbourhood of Nazareth, through the kindness of Miss Lee, of the Mission School, I exhibited at the Royal Horticultural Society some two or three years ago under the provisional name of *I. Saari var. Nazarena*.

I have not yet described this latter *Iris*, because I have so far failed to flower it again in a manner sufficiently satisfactory for description; but I am inclined now to think that it deserves a specific name, and should be called *I. Nazarena*. It must be admitted, however, that the structural differences between it and *I. Saari*, as, indeed, those between *I. Sari* with *I. Heylandiana* and *I. Susiana*, are not

* *Iris Lorteti*, Barbey, in Boissier, *Flor. Orient.*, v., p. 131; *Herbar Levant*, t. 7. Baker in *Bot. Mag.*, t. 7251, August, 1892.

very marked, though on account of differences in colour the several plants are, for garden purposes, very distinct.

Iris Lorteti in general features comes very close to I. Saari, and especially, perhaps, to my I. Nazarena, but its wonderful colouring puts it by itself as, perhaps, the most beautiful Iris in the world. In the specimens gathered by Lortet, the outer segments are described and figured as showing a very pale blue ground covered with crimson spots,

I learn that the plants imported by Mr. Max Leichtlin show considerable variation in colour; apparently, however, the "note" of the plant is a peculiarly charming combination of crimson spots, and blue or violet veins, on a white or creamy-yellow ground.

The flower figured by Barbey is as large as that of an ordinary, or rather smaller I. Susiana; the one figured now is distinctly smaller, but it was sent from Holland in bud, and probably did not acquire

Barbey describes the leaves as being very narrow, though his figure somewhat contradicts this, and in the plants grown by me the leaves are very distinctly broader and more ample than in I. Susiana; indeed it appears to me to promise a larger foliage than is possessed by any other *Oncocyclus* Iris.

As regards cultivation, I have come to the conclusion that all these Palestine *Oncocyclus* Irises should be treated in this country by the "taking-up" method—at least, until they have become acclimatised, if ever they do. But one or two points appear to be essential for success by this method. In the first place they should be planted quite late—say in October, or even November, according to climate; this prevents their making any growth of leaves before winter comes on. In the second place they must be protected during winter and early spring, so that the young shoots receive no injury from frost. As soon as the foliage, after flowering, begins to die down, they should be taken up, well ripened in a sunny greenhouse, and kept absolutely dry until it is time to plant them again. The object of this treatment is to secure their not making any very active growth until fairly warm weather sets in, so that when they are hardest at work they may be comforted by genial sunshine, and not buffeted by autumn rains and winter frost as they are when they are left in the ground or planted in early autumn. M. Foster, Shelford, July 30.

[A coloured figure of Iris Lorteti is, by a coincidence, given in this month's *Botanical Magazine*, t. 7251, from a plant that flowered in the garden of Captain Elwes. There the sepals, or falls, are shown as having a pale yellowish ground, thickly beset with minute purplish dots and streaks radiating from a large purple blotch which forms the sign post for the insect visitors in their quest of the nectar, and in their consequent pollen-distributing function. The petals, or falls, are of a light violet colour. Ed.]



FIG. 27.—IRIS LORTETI.

which, scattered sparsely over the marginal parts of the fall, are concentrated into a dark crimson patch or "signal" in the centre beneath the end of the style; the inner segments or standards are similarly described as being of a delicate pale rose. In a plant flowered by myself this summer, the falls showed a creamy-yellow ground marked with crimson spots, concentrated at the centre into a dark crimson signal, while the standards were nearly pure white, marked with very thin violet veins hardly visible at a distance.

its full size. I imagine that, when well grown, the flower will be found to be about as large, but on the whole rather smaller than that of a well-grown I. Susiana.

It is perhaps hardly necessary to add that the flower has the characteristic features of its allies; an oval fall convex from side to side as well as reflexed vertically, bearing a loose beard of scattered hairs, an orbicular, erect standard, and a nearly horizontal style lying close on the claw of the fall, and bearing conspicuous semicircular crests.

REMARKS ON THE FRUIT CROPS OF 1892.

[For Tabulated Summary, see p. 93.]

(Continued from p. 136.)

4. ENGLAND, MIDLAND.

BUCKS.—The Apple and Pear crops are very thin ones in this neighbourhood. Plums, except on walls, which are fairly good, are a short crop, the repeated late frosts and cutting east winds having played havoc among standards in exposed situations. Strawberries were extra good both in quantity and the quality of the fruit, especially President and Laxton's Noble. Gooseberries are much troubled with caterpillars. C. Turner, Cranfield Court.

— Although all kinds of fruit trees were late in blooming, much damage was done by spring frosts. Apricots had set an excellent crop, and the fruit was swelling fast when the frost came and destroyed more than half the crop, even under double nets. All kinds of fruit trees are remarkably healthy this season, and hardly any insects have been seen, and no blight of any kind. J. Smith, Mentmore, Leighton Buzzard.

— Speaking generally, the fruit crops in this district are good. Apple trees are heavily laden with fruit (in some instances too heavily), and, with the recent rains, are swelling fast, and promise to be an excellent crop. Pears are a failure, excepting a few trees against a wall facing the east. Here Williams' Bon Chrétien, Pitmaston Duchess, and Seckle are bearing fairly well. Plums generally are very thin, some trees on walls, including Victoria and Early Prolific, are carrying a fair crop; standard trees are very thinly fruited. Apricots are a failure, but Peaches and Nectarines are abundant, many fruits having to be removed from the majority of the trees; the latter are healthy, and have not been much infested with aphids this year. Bush fruits are abundant and good. Strawberries were rather smaller than usual, and will be over sooner, owing to the dry weather earlier in the season. From autumn-planted runners we began gathering a good

supply on June 7, the varieties being Noble and Vicomtesse H. de Thury. The first fruit was ripe on June 3. Filberts and Cob Nuts are plentiful. *Chas. Herrin, Dropmore, Maidenhead.*

BUCKS.—The crops of Apples, Cherries, Peaches and Nectarines, Currants, Raspberries, Strawberries, Nuts, and Walnuts are very good indeed. The crops of most kinds of Plums are very short, excepting Greengages and Damsons, which are a little better. Amongst new varieties of the Strawberry we have two that are excellent, viz., Laxton's Royal Sovereign, which partakes of the Queen type, and Gunton Park, a large Cockscomb-shaped, dark-coloured fruit, of excellent quality. *G. T. Miles Wycombe Abbey.*

— Apples were well furnished with bloom-buds, but in consequence of the very backward season, and the continuance of frost every night, the blooms opened badly, and the set was very light, especially on pyramidal trees; espalier trees are carrying quite double the quantity of fruit. Lane's Prince Albert surpasses all other varieties as a pyramid. On espalier trees of Alfriston, Ashmead's Kernel, Irish Peach, Cox's Orange Pippin, Cockle Pippin, Golden Harvey, Gravenstein, King of Pippins, Lord Grosvenor, Lord Suffield, and Margil are the best. Pears and Plums on pyramidal trees are practically failures; on walls and espaliers under average, but of fair quality. Gooseberries very light crop; Raspberries and Currants fair. *J. Jacques, Waddesdon Gardens, Aylesbury.*

CHESHIRE.—The fruit crops are this season the worst that we have had for several years, no doubt owing to the very hard spring frosts we experienced hereabouts, and to the severe attack of the Gooseberry sawfly-caterpillar afterwards, which quite crippled the growth of the bushes. The loss of the Gooseberry crop will be severely felt by our market cultivators. *Jno. V. Smith, Arley Hall, Northwich.*

— Fruit trees generally did not flower very plentifully last spring, owing, as I believe, to the cold and unfavourable character of last season; and this, with the low temperature during a great portion of April and May, caused the flowers to fall without setting, and there is, in consequence, very little or no fruit on many trees. A few varieties of Apples and Pears have an average crop, but the greater portion have few or none. Strawberries have ripened very slowly. Gooseberries less than I have known for many years. Aphides and caterpillars were in great numbers, particularly the latter, on the Oak trees, but great numbers have been destroyed by rooks, which are now devouring the moths. *Wm. Whittaker, Crewe Hall.*

DERBYSHIRE.—The fruit crop hereabouts is perhaps the poorest for very many years. Several kinds are almost a total failure, such as Apricots, Pears, and Plums. I may attribute the cause to the unusual fluctuations of temperature, for on April 5 the temperature was 71° in the shade, and on the 18th we had 12° of frost. The temperature for April was the highest average for fifteen years. The rainfall was the lowest average for ten years. Some of the very early blooming Apples are a good crop, also some of the very late-blooming kinds are satisfactory. *J. H. Goodacre, Elvaston Gardens, Derby.*

HERTFORDSHIRE.—Apples are again this year slightly under average, but the fruits are very clean and healthy, such varieties as Cellini Pippin, Kerry Pippin, Cox's Orange Pippin, Hawthornden, and Blenheim Pippin, carrying heavy crops. Small fruits, with the exception of Strawberries, are very fine this season. The Strawberry plants suffered very much from the long continuation of wet and cold during the past winter, and in many places one-third of the plants were killed outright. *Joseph Fitt, The Gardens, Panshanger.*

— Apples and Pears in this district are a poor crop, although the prospect was at one time good—the trees had abundance of blossom, but it did not set. Bush fruits of all kinds are plentiful; Raspberries and Strawberries are good. Red and black Currants are carrying remarkable crops; also Peaches and Nectarines. Apricots are a good

average crop; Filberts are an immense crop. *C. E. Martin, The Hoo Gardens, Welwyn.*

HERTFORDSHIRE.—The bloom on all our fruit trees, except Pears, was plentiful, a fact that may be due to the heavy crops of 1891 restricting and checking exuberant growth of shoots. Plums were very promising when in bloom, but the frosts destroyed the open bloom to such an extent that the crop is almost a failure. The same causes reduced the crops of red and white Currants to about one-quarter of a crop, but black Currants did not suffer. Peaches set well, and the trees are carrying a very heavy crop. As regards Cherries, I never saw finer in this county. Apple trees are clean and free from caterpillars. Wellington Apple promises to be very fine this year. Of late-introduced kinds Lady Henniker promises to be one of the best, and succeeds in this garden; it is a good grower and bearer, with large, handsome, and good flavoured fruits. *George Norman, Hatfield House Gardens.*

NOTTINGHAMSHIRE.—In the early season as each came in bloom, viz., Apples, Pears, Plums, and Cherries, all gave promise from the quantity of bloom for an abundant crop, but when in flower came a time of cold east wind, very dry and cutting, with very little sun, and frost from April 1 to the 19th; we had only two nights in which there was no frost. On April 1, 11° of frost, and on the 19th, 12°. This long time when most in bloom, killed almost everything; the trees for a long time made no growth, all seemed paralysed. We have a few Apples on Duchesse of Oldenburgh, Lord Suffield, and Blenheim Orange, but very few on others. Pears are very scarce, Emile de Heyst, Louise Bonne of Jersey, Beurré Diel, Catillac, Easter Beurré, are the best that we have. The dessert Plums are very scarce; Damsons only a few. *A. Henderson, Thoresby, Allerton.*

OXFORDSHIRE.—The Apple crop is good, with few exceptions. Pears on walls fairly good, but thin on open trees. Plums good, excepting on some wall trees that were overcropped last year. Cherries good; Morellos, which were very promising, went off suddenly, I think at stoning time, leaving a rather thin crop. Peaches and Nectarines, best crop for some years. I gathered Waterloo on an open wall on the 17th June; Amsden's June and Alexander would be ripe ten days after. Apricots poor. Small fruits plentiful, except Raspberries, which are poor. Strawberries fairly good, President being the best cropper. Nuts plentiful; Walnuts thin. Fruit trees very free from blight, blister, &c. *George Stanton, Park Place Gardens, Henley-on-Thames.*

RUTLAND.—Apples flowered well, but a large number of the blossoms were killed by frost before they expanded, and those trees which are bearing are chiefly the trees that had very small crops last season. Pears had very little blossom, and much of that was destroyed by frost, so that we shall have scarcely any this season. Plums also showed very little flower, partly owing to the heavy crops they bore last year. Bush fruits of all kinds are heavy crops, and good. Strawberries were finer and more abundant than we have had for several years. Peaches and Nectarines are not cultivated to any extent outside in this county; what few we have, suffered much from the late severe winter. *W. H. Divers, Ketton Hall Gardens, Ketton.*

SHROPSHIRE.—Peaches and Nectarines a full crop. Apricots bloomed well, but suffered, like Plums, from frosts. Apples failed to set, which I must attribute to the growth being immature, with the exception of a few "all-round" varieties, such as King of the Pippins, Keswick Codlin, Tower of Glamis, Hawthornden, &c. Little or no bloom on most kinds of Pears. *A. S. Kemp, Broadway, Shifnal.*

— Early prospects were all that could be desired until the withering north-east winds swept over the district, carrying devastation with it, and causing the trees to look as if they had been scorched. Many acres of Strawberries were ruined by a peculiar kind of blight which was hitherto unknown hereabouts. *Neil Sinclair, Park Hall Gardens, Oswestry.*

WARWICKSHIRE.—In parts around here the Apple

crop is a pretty good one, but Blenheim Orange, Northern Greenings, and Ribston Pippins are very thinly set. Peaches and Nectarines are very heavily cropped, and the foliage clean and healthy. *J. Rodger, Gardens, Charlecote Park.*

5. SOUTHERN COUNTIES.

BERKSHIRE.—There was every prospect of a good fruit season, plenty of bloom, and a good set; but the frost on May 6 and 7 thinned all crops, and nearly destroyed the Pears, which fell abundantly; 8° was lowest reading here, but 12° was registered in the district. Apples, under average, but some varieties have heavy crops; especially Jolly Beggar, Manx Codlin, Lord Grosvenor, Lemon Pippin, and others. Pears, very thin on walls: and standards much under average. Same remarks apply to Plums. Cherries extraordinary crop, trees clean, and fruit fine quality. Knight's Early Black, Bigarreau Napoleon and May Duke, Black Eagle and Tartarian, very fine. Apricots, fair crop. Strawberries plentiful, but small. Noble a heavy crop, and better flavour, probably owing to drought. Waterloo is fine on this soil, also Sir J. Paxton. *O. Thomas, Royal Gardens, Windsor.*

— Our fruit crop here and round about is a very moderate one. Apples promised well when in blooms but were in places much destroyed by the severe frosts. For the last twenty-two years I never saw the Pear crop so bad on walls and standards. Plums the same. Our best crops in the open are Peaches and Nectarines, both clean and good. Bush fruits are moderate. Strawberries suffered from the great heat and want of rain; altogether a most trying season. *James Tegg, Bearwood, Wokingham.*

— Taking the fruit crop all round in this district, it is the worst we have had for many years. Everything looked promising up to June 14, when we had 4° of frost. Plums and Apples had the appearance of having passed through a fire, and dropped abundantly. *J. H. Rose, Lockinge Gardens, Wantage.*

HAMPSHIRE.—Apples are an exceptionally heavy crop, the trees perfectly healthy, and free from insect pest of any kind. Varieties which have been classed as failures for many years—for instance, Ribston Pippin, Blenheim Orange, Devonshire Quarrenden, Wormsley Pippin, New Hawthornden, and Golden Pippin—are now heavily laden with fruit. The varieties Warner's King, Ecklinville, Mère de Ménage, Lord Grosvenor, Beauty of Hants, Cox's Orange Pippin, Worcester Pearmain, Irish Peach, King of the Pippins, Lady Henniker, and Stirling Castle, which we annually look upon as sure croppers, are this year no exception to that rule. *E. Molyneux, Swanmore Park, Bishops Waltham.*

— Fruit crops in this district are quite up to the average, with the exception of Plums and Pears. Apples were never more beautiful than at the last blooming season; and although at one time it was feared the frost had destroyed the crop, the trees of all varieties are bearing well. Peaches, Nectarines, and Apricots have had to be heavily thinned and kept moving with copious supplies of water. Pears are very scarce, and were it not for a south wall of cordons, a total failure would have to be recorded. Cherries plentiful and good. *A. Maxim, Heckfield Place Gardens, Winchfield.*

KENT.—The Apple crop in this neighbourhood promises to be good; trees and fruit very clean. Pears and Plums are a failure. Cherries very good on standards and walls. Peaches and Nectarines are exceptionally good. Black and Red Currants clean and bright. Raspberries and Strawberries good, but the latter were much damaged by the heavy storm of the 28th June. Auguste Nicaise the best here. *F. Moore The Gardens, Blendon Hall, Bealey.*

— Crops generally short. Apples not plentiful, but the trees healthy, and not damaged by the caterpillar, which destroyed the foliage so much in recent years. Gooseberries, in many places in this district, were so much injured by late frosts as to have but a very light crop indeed. Raspberry canes of the least hardy kinds cut down by the severe winter, and crop consequently very light. Cherries (on walls small, on account of want of moisture and low tem-

perature. Peach trees very healthy, but bearing scanty crop. Pears the same. Red and white Currants fair as regards crop. Black Currants cropping fairly. Taken as a whole, the fruit crop is unsatisfactory. It may be added that the Strawberry crop felt very much the want of rain at the time when needed for the swelling of the fruit. *G. A. Don, Bedgebury Park, Hawkhurst.*

KENT.—Apples are an average crop, and the trees have kept cleaner this season. Pears very thin, but likely to be of good quality. Peaches and Nectarines are very good on open walls. Small fruits only average all over. Gooseberries very thin, and Strawberries also lighter crop, but much better quality than last season. *W. Craik, Hothfield, Ashford.*

MIDDLESEX.—Peaches are a good crop. At the time the trees were in flower we had quite a week of mild weather, but rather windy; these conditions

requires to be much thinned. *Geo. Wythes, Syon House, Brentford, W.*

MIDDLESEX.—The fruit crops are not so heavy as last year. Apples look clean and well. Pears were quite killed after they were set with the late frost. Small fruits suffered in the same way. Plums are a nice crop. Strawberries are only a half crop in this district. *J. W. Bates, Cross Deep, Twickenham.*

SURREY.—I presume an examination of the fruit crops in most places for the present year will show a good one. Here, at our elevation, perhaps, we do not suffer from late spring frosts so much as in the low districts. I consider we have the best crop of Apples we have had for many years. Plums are a heavy one; Pears an average, all clean, and promise to be good samples. Gooseberries, Currants, and Strawberries are abundant and fine; Currants and Gooseberries I have never had better. It is worthy of note

very thin. Filberts and Walnuts a moderate crop. *F. Rutland, Goodwood.*

SUSSEX.—Apples on orchard trees are quite a failure. Pears on walls not half a crop, elsewhere there is none. Plums on walls and pyramids in enclosed garden a failure, standards in open orchard carrying about half a crop. Peaches set very thickly, but the fruits were afterwards thinned by frost, still there is a heavy crop left. *F. Geeson, Cowdray Park, Midhurst.*

— Apples here are a heavy crop. The following are bearing best on standards:—Cox's Orange, Ribston, Kerry, Blenheim Orange and King of Pippins, Warner's King, Wellington, Devonshire Quarrenden, Lord Suffield, Irish Peach, Mère de Ménage, Keswick Codlin, Northern Dumpling, Non-such, D. T. Fish, Hambledon Deux Ans, Mr. Gladstone. On espaliers Worcester Pearmain, Margil, Cox's Pippin, and Scarlet Nonpareil. On cordons Lord Suffield, New Hawthornden, Frogmore Prolific. *E. Burberry, Castle Gardens, Arundel.*

WILTSHIRE.—In spite of the very unseasonable character of the weather which prevailed during the period fruit trees were in flower, and indeed up to the third week in June, the fruit crop for 1892, excepting Pears and Plums, will compare favourably with that of previous years, but Pears and Plums, taken on the whole, are almost complete failures. Of Pears, Williams' Bon Chrétien, Marie Louise, Beurré Gris, Ne Plus Meuris, and Doyenné du Comice, trained against west and south-west walls, are bearing light crops. Of Plums, Reine Claude de Bavay, Green Gage, Early Favourite, Guthrie's Green Gage, Coe's Golden Drop, The Czar, and Ickworth Imperatrice are lightly cropped. Apricots under glass-coping are good. Peaches and Nectarines, where protected by canvas when in flower, are heavy crops; the fruit having had to be severely thinned. Apples are an average crop; many of the trees in our orchard are bearing immense crops in the middle, while the outside trees have scarcely any fruit on them. Young trees, both standards and espaliers, in the kitchen garden of Blenheim Orange, Annie Elizabeth, Red Quarrenden, Red Astrachan, Emperor Alexander, and King of the Pippins, are well cropped. Gooseberries and Currants are immense crops. *H. W. Ward, Longford Castle, Salisbury.*
(To be continued.)

CYRTANTHUS TUCKII (BAKER).

ALTHOUGH this distinct-looking Amaryllid has been in cultivation some few years, it is still practically unknown outside of botanic gardens. It was originally described by Mr. Baker, of Kew, in the *Journal of Botany*, 1876, p. 183, from specimens sent by Prof. MacOwan, at whose request the plant was named after Mr. William Tuck, of Grahams-town, South Africa.

Cyrtanthus Tuckii is a native of Cape Colony, and has been found growing at an altitude of 4000 to 5000 feet on the Boschberg mountains, and at somewhat lower elevations in Kaffraria. Mr. F. W. Moore, of Glasnevin, appears to be one of the first to have grown the plant in Europe, as Mr. Baker in his *Handbook of Amaryllideæ* remarks having received a living specimen from that gentleman in 1884.

At a recent meeting of the Royal Horticultural Society in the Drill Hall, Westminster, a plant in bloom was exhibited by Mr. J. O'Brien, who is remarkable for his success in obtaining and flowering all kinds of rare Cape plants. *C. Tuckii* is an important addition to the other species of Cyrtanthus at present grown, and, as will be seen by the accompanying sketch, its flowers are by no means small. They are of a bright orange-scarlet, and have the filiform pistil more or less protruding from the tube of the perianth. The bulbs are ovoid, and are furnished with two linear glaucous-green leaves, 12 to 18 inches long, which appear at the same time as the fleshy glaucous-green peduncle, at the summit of which the flowers are arranged in a loose umbel, subtended by two lanceolate greenish spathe-valves. Under cultivation, *C. Tuckii* should

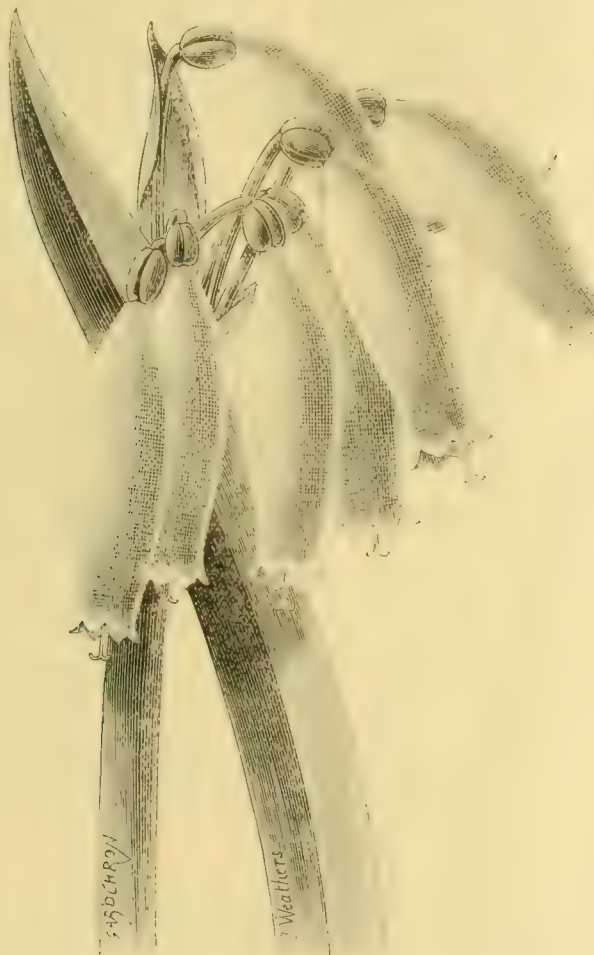


FIG. 28.—CYRTANTHUS TUCKII: FLOWERS ORANGE-SCARLET.
Drawn by Mr. J. Weathers.

were favourable to their setting, and they held on well. Apples were late in flowering, and so escaped the late frosts and set well. Pears.—During the time these were in flower it was nothing else but frost, night after night, and consequently very few set. Gooseberries, Currants, and Raspberries are abundant, clean, fine and good. Strawberries.—Fruit good, but smaller than last year. *A. J. Ball-hatchet, The Gardens, Fulham Palace, London, S.W.*

— The fruit trees early in the season gave great promise of heavy crops, but the severe weather when in bloom destroyed much of the bloom. Apples such as Manx Codlin, Keswick ditto, Grenadier, and Lord Grosvenor varieties bear a heavy crop. Late and dessert varieties are scarcer. Pears, especially the early varieties, are a worse crop; Louise Bonne of Jersey is the best of these. Plums are a failure. Morello Cherries dropped badly, but the trees will finish a fair crop. The Apricot crop

that Plums were such an exceptionally heavy crop in 1891, and are equal to it in 1892. All that we want now is hot weather, to bring out the fine qualities of the best varieties of Pears and Apples. *A. Evans, Lythe Hill, Haslemere.*

SUSSEX.—Pears and Plums all bloomed abundantly, and set well, but the severe frosts completely killed all the fruit on the bush trees. I never remember to have seen Raspberry canes so much injured. *Geo. Goldsmith, Leonardslee, Horsham.*

— The long cold spring has not been favourable for the fruit crop, but we have abundance of Apples. The two severe winters have punished the Fig trees terribly, so that there are but very few fruits on the trees, and lots of the young wood killed. *Joseph Rust, Eridge Castle Gardens.*

— Apple and Pear crops excellent, also all bush fruits. Raspberries very good. Plums and Apricots very thin indeed, owing to the spring frost. Figs

soon become a valuable and decorative greenhouse plant, and Mr. O'Brien may possibly be willing to give some information regarding its cultivation, for the benefit of those who already may have plants in their collection. *John Weathers.*

CYPRESSES IN TROPICAL AFRICA.

In the last number of the *Kew Bulletin* is a very interesting account of the botany of the Milanji Mountains to the south of Lake Nyassa. These mountains have recently been visited by Mr. Alexander Whyte, who gives the following account of the vegetation, which is enough to make the mouth of a botanist water. The elevation of the plateau is noted as 6000 feet. The "Cypress" is probably referable to the genus *Widdringtonia*, of which we have already seen scraps from Mozambique. [*M. T. M.*]

"The flora of the mountain proved to be most interesting, the species met with being mostly distinct from those of the plain or even the lower slopes. But, under this heading, I must first attempt to give a short description of the Cypresses, the most striking botanical feature of the plateau. The remnant left of these fine Conifers is confined to a few of the upper ravines and valleys, the largest forest of them finding a comparatively secure habitat in the damp gorges of the Lutsheya valley. A few old scorched monarchs of the glen lead a precarious existence pretty well up the southern slopes of the main mountain, but unless steps are taken to protect them [steps have been taken. *H. H. J.*] these interesting relics of the past are doomed to speedy destruction. It is deplorable to witness the devastating effects of the annual bush fires, from which even this lofty and all but inaccessible retreat is not exempt. During the dry months of August and September these fires, originating from the villages on the lower slopes of the mountain, gradually creep up the precipitous cliffs, from tuft to tuft of grass, until, at last, they reach the glassy plateau. Once there the work of destruction is rapid. The fire rages over the table-land, and eats its way along the edges of the remaining belts of forest, thus annually scorching, if not burning, the bark and timber of the outside trees, and killing outright the young seedlings. In exceptionally dry seasons, it appears that these fires have even penetrated some of the damp forests, and hundreds of damp Cypresses lay prostrate and piled on each other, in all stages of destruction, but generally consumed right through at the base of the tree. I measured several of these dead Conifers, and one (by no means the largest to be met with) was 140 feet in length and 5½ feet diameter at 6 feet from its base, and with a clear straight stem of 90 feet in length. The cones of this species of Cypress (which may be new to science) are somewhat smaller than a chestnut, of the same shape, i.e., longer than broad, and open into four scales or segments, each having a spur-like knob at its apex, and covering five or six winged seeds. The foliage is of the usual Juniper-like description, and the timber is of a dull reddish-white colour, of excellent quality, and easily worked. The bark on old trees is of great thickness, consisting of layers annually shed and renewed. I selected sections of this valuable timber tree, which I hope to send home with the other Milanji specimens by an early date. Seeds of it are put in nursery beds in the Residency experimental gardens at Zomba, and I trust the tree will thrive in its new habitat here. One or two other species of Cupressus are met with, but of dwarf and scrubby growth.

"Tree-Ferns attain to a great size in the damp shady forests of the plateau, and one I measured was 30 feet in height, and 2 feet in diameter at the base. I hope to send home sections of them also.

"Never before have I met with more gorgeous displays of wild flowers than those to be seen in some favoured nooks of these highlands. There we observed creamy-white and yellow *Helichrys*ums, mingling with purple and blue Orchids and Irises, and graceful snow-white *Anemones*, all blooming in

wild profusion, and rearing their heads from a bed of bright green grassy sward—a floral carpet, which Nature alone can fashion. Altogether, we procured several thousand specimens of dried plants of many species, and which, I trust, will be of benefit to science. Many of the trees had not come into flower, and the Ferns had not matured their fronds and seeds. The grass-lands also had been too recently burned to permit of many of the plants reaching the flowering-stage."

THE ROSERY.

ROSES IN POTS.

It may not be out of place to give a few more notes upon the above subject, as the present is a most important period of their existence. If pot Roses are to be successfully grown and bloomed next winter and spring, they must have proper attention during this and the two coming months. My latest batch will be placed out upon a sunny border as soon as convenient now. Unless the wood is well-matured, good results cannot accrue. We often complain of having had a bad autumn for ripening the wood of plants growing in the open air, with the result that winter affects the wood more injuriously than would otherwise be the case, yet we are apt to leave the efficient ripening of pot-grown plants too much to chance. It stands to reason that it is even more necessary to secure well-ripened growth upon plants that are to be forced against Nature and in the dead of winter, and this must be taken in hand at once.

All plants require a certain season of rest, and unless you can secure this for them, they will not respond satisfactorily to winter and early spring forcing. This remark refers especially to pot-roses, and should be borne in mind generally.

If you secure well-ripened wood, and allow this a short period of rest before beginning to force, and above all, force very gradually at first, you will be rewarded with greater success than is possible by any other treatment.

Now, in order to follow upon these lines, we must get the wood ripened at this season, or there will be no period of rest for the plants that are to be forced early. All pot-plants should be stood in a sunny position out-of-doors, and care taken that the roots do not suffer from drought during the first few days after removal to the open air. This is important, as the soil will dry up quickly upon being exposed to the air, and what was quite moist while in the damper atmosphere of the Rose-house, will be too dry in an hour or two after being placed in the full sun. Such a state of things would cripple the plants by injuring the young roots, and is a fruitful cause of premature undue ripening. This is the reason why half plunging the pots, so as to keep the roots in a cooler and more uniform state of moisture, is an advisable proceeding; and to cover the side of the outside rows of pots that face the south, otherwise the roots—that are always thicker at the bottoms and sides of the pots—will be parched by heat and drought; the inside rows of plants are sufficiently protected by one another. The real object of this is to afford them as nearly an autumn treatment as possible, by keeping them rather dry at the roots, and affording them full exposure to day and night air.

In October, a few of the best matured may be pruned, and stood in a pit or frame, keeping them close until growth has well commenced, when more water may be afforded, and the plants be removed to a house with a temperature of 60° to 65°; these will then flower about Christmas, and a little later. All of the pot Roses should be under slight cover, of some sort, before the end of November. By pruning and bringing them on as described in three or four batches, a good successional display of cut Roses may be had until the earlier varieties are again in flower upon warm walls and in sheltered positions out-of-doors. After the many articles upon this subject in the pages of the *Gardeners' Chronicle*, it should scarcely be necessary to call attention to the

great necessity of thorough drainage being secured, and for water being carefully and judiciously afforded.

When well into growth, and not sooner, a little weak liquid-manure may be given to great advantage; but never give the Roses manure-water with the object of starting them into growth, as it does not have the desired effect, but retards it by rendering the soil sour, which would not be the case if the roots were actively at work and able to assimilate food. *A. P.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. A. BURBERRY, *Orchid Grower, Highbury, Birmingham.*

THE EAST INDIA HOUSE.—Every encouragement must be afforded the plants in this division to make strong pseudobulbs or leaves, as the case may be, while summer is still with us; and one way of effecting this is by putting tan, leaf-soil, or seaweed beneath the stages, and forking it over two or three times a week. Some of the species of *Cypripedium*, *Saccolabium*, *Aërides*, *Phalænopsis*, *Calanthe*, *Angraecum*, and others, also *Oncidium Lanceanum*, *O. Papilio*, *O. ampliatum majus*, *O. Jonesianum* (the last-named being suspended close to the glass in the lightest part), and *Vanda teres* and *V. Hookeriana*, which should have full sunshine, grow best in this house. *Oncidium Jonesianum* must not, however, remain here after its growth is finished, but be removed to the Mexican house, where it should be wintered cool and dry. *Odontoglossum Roezlii* should have a corner in the East India-house if a place can be found where moisture condenses at night. It is a plant that delights in great heat and moisture whilst growing if the house be ventilated to ensure a circulation of fresh air. The plants should not now be allowed to become dry at the roots, although on the other hand more mischief may be done them if they are kept in soddened materials. It is an aid to healthy development in the plants to sprinkle Peruvian guano on the paths, or damp down with manure water at night. This is preparatory to the ripening process that follows in the autumn.

THE COOL HOUSE.—*Sophranitis grandiflora* and its varieties, *S. rosea* and *S. coccinea*, are pretty, small-flowered Orchids, which grow best in small pans suspended near the roof. Plants of them are growing freely about this season, and will need a plentiful supply of water at the roots. *S. violacea* must have the warmth of the intermediate house, otherwise the same kind of treatment suits the plant. *Oncidium cheiroporum* grows better in the cool house than in any other if care be taken to keep the water out of the young breaks, these being very liable to damp off if they are wetted whilst young.

THE CATTLEYA HOUSE.—Our plants of *Cattleya Warneri* were re-potted some few weeks ago, and they are freely pushing roots into the fresh potting materials. The plants are close to the ventilators, and have therefore a great deal of air and of sunshine. In order to rest them and ripen the latest made growths, so as to ensure plenty of blooms next year, very little water should be afforded them now—just enough to prevent shrivelling of the pseudobulbs. *Cattleya gigas* should be repotted at this season, when the flowers are past, or in the case of plants which have not flowered, when the pseudobulbs are ripe. I prefer to keep the plants in small pots, if pots are employed, but my plan is to grow them in baskets of Teak wood. *C. gigas* should be put, after repotting, in a similar place to, and treated the same as, *C. Warneri*.

THE KITCHEN GARDEN.

By G. WYTHES, *Gardener, Syon House, Brentford.*

TURNIPS.—A good breadth of Turnips should be sown for autumn and winter use. I usually sow at this date Veitch's Red Globe for use at the beginning of winter, and Golden Ball, which will keep good till late in the spring. Both are hardy Turnips, that always keep well. Where yellow-fleshed kinds are not favoured, the variety Chirk Castle Blackstone may be sown; it is hardy, and well-flavoured.

CARROTS.—A sowing of Short Horn Carrot made at this time will be found of use to draw in

the autumn, and help out the winter supply of large kinds.

ONIONS.—The autumn-sown Onions are often valuable in places where the spring-sown ones do not succeed, and many gardeners are enabled to grow autumn-sown who fail with the others. Choose good ground that is well tilled, so that growth shall be rapid. After digging the land, strew plenty of soot, wood-ashes, and burnt garden-refuse on the surface, and work it in with a fork to about a depth of 6 inches. This will be found preferable to using farmyard or stable manure. If the ground is dry, water it heavily.

SPINACH.—Make two sowings of this vegetable, one early in the month, and another one month later. This crop requires more careful preparation of the ground than Onions, and a heavy coat of manure should be dug into it about two spits deep, but where the land is in good heart, I have found that liberal dressings of fish-manure or of Peruvian guano are good substitutes for other stable or farmyard manure. Land should be selected which has not been recently cropped with Onions, Carrots, or Spinach—plants that are liable to be attacked with wireworm and the grub. When the ground has been got into condition for sowing, it should be trampled evenly, large stones raked off, and the surface levelled, it may then be rolled or not as may be deemed advisable, before the drills are drawn, but in any case it should be firm land, the plants getting a better hold, and going deeper than in loose soils. After the seed is sown it should certainly be rolled. If the rows are 18 inches apart it will not be too wide. If the sowing cannot be made just after rain, water the drills, and sow directly. Of late years I have sown the Improved Round Victoria in preference to the prickly-seeded winter Spinach, it being in every way superior to that kind, and it does not run to seed so readily, and is very hardy. These large-leaved varieties require the rows to be from 18 inches to 2 feet apart, or the plants crowd each other. Another sowing made the middle of September may be sown in closer drills.

FRENCH BEANS.—Some seed may still be sown on warm sheltered borders or under a south wall, and in such a place some kind of glass protection can be usually put over them in the event of frost in September. An early-fruited kind should be sown, and the drills made of moderate depth. Of varieties of French or Kidney Beans Mohawk and Ne Plus Ultra are good for the purpose, the former better than the latter at this season, sowing 2 feet apart between the rows in well-manured land. Beans now in bearing should be supplied with liquid manure, and the pods gathered daily.

SCARLET RUNNER BEANS.—Do not let the plants suffer for want of moisture, particularly if the land is light. Liquid manure should occasionally be afforded. Late sowings should be topped, and all will be benefited by a mulch of short dung.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

DAHLIAS.—In order to secure fine blooms, the plants should be kept uniformly moist at the roots, and the shoots well thinned to let in the light; and to do this, all weakly growths should be cut away, and the stronger fastened to stout stakes, which ought to be placed out of sight as much as possible. Where a mulch is not objectionable, it should be applied at once. I am here only referring to ordinary decorative plants, because for show purposes only a limited number of blooms should be allowed to develop, and liquid manure afforded gives size to the blooms. Earwigs are destructive insects, spoiling the flowers; and to trap them, a flower-pot half filled with moss, or a Bean-stalk, should be placed among the plants, and the insects destroyed daily.

BORDER CARNATIONS.—Plants of the dark-coloured and white Clove Carnations, especially those growing in light soils, should be kept moist at the roots, and if not already done, the flower-buds on either side the central or crown bud may with advantage be removed, as it is necessary to take 2 inches of the flower-stem when the flowers are cut; moreover, these side buds seldom develop into passable blooms. However, in order to prolong the season of these Clove Carnations, it will be necessary to remove the flower buds that surmount the flower-

stalks, and allowing the two side-buds to develop, which they will do later.

HERBACEOUS AND ANNUAL PLANTS.—Many of these plants are at their best during the present month. These include Delphiniums, shrubby and herbaceous Phloxes, Spiræas, Rudbeckias, Eryngiums, Heleniums, Gaillardias, Funkia Sieboldiana; and (of annuuls) Zinnias, Clarkias, Eucharidiums, Shirley Poppies, which make a fine show of brilliant and varied shades of brilliant and varied shades of colour; Coreopsis, Cornflowers, Larkspurs, &c. Where necessary water should be afforded the plants, and support should be given to the taller growing subjects. Remove decayed leaves and flowers, so that these do not mar the general effect.

PLANT-VASES, ETC.—In many gardens well-filled vases of mixed plants or of Pelargoniums contribute to the gay appearance; and these should receive attention in the matter of surface-dressings of some sort of plant manure before affording them water, and as these subjects do not benefit much from the rain, watering should be copious and frequent. Pinch out the points of strong shoots, and keep the plants clean and trim.

PELARGONIUMS.—Wherever the removal of cuttings of the Pelargoniums will improve the appearance of the beds, the cuttings should be taken forthwith, putting them in shallow boxes properly provided with drainage, and filled with a light kind of loamy soil, and surfaced with sand. The cuttings may be put in at about 3 inches asunder, the boxes stood in a dry situation exposed to the sun, and the cuttings sprinkled every afternoon on bright days.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

VINES.—Where the Grapes in the late houses are changing colour, the sublateral shoots should be removed, and those at the ends of the rods stopped, following these manipulations with a liberal top-dressing of the border with manure containing phosphate of lime, and a heavy watering to carry the manure down to the roots. When the Grapes are to hang for a considerable period in the ripe stage, the border should be mulched with half-rotted leaves and stable manure from which the greater part of the straw has been taken out, or some spent Mushroom-bed dung, which will maintain a dry atmosphere in the house, by checking evaporation from the soil. In dry weather air should be admitted to the vinery at all times, but carefully guarding against sudden changes of temperature. It is also necessary to observe these details whilst the fruit is ripening, when such varieties as Madresfield Court, Mrs. Pearson, and Gros Colman, are grown. Although air may be admitted at night, still a minimum of 60° must be observed till the fruit is finished. Should red-spider and thrips be present, these must be dislodged by the sponge in the case of the former, and the latter by fumigation on three consecutive nights, choosing cool, still nights, if possible, for this operation. Be sure that any Vines that have ripened their fruit are not getting dry at the root, and when watering the borders, let it be done in the morning when the weather is bright and warm, and in order to evaporate much of the moisture present in the air of the vinery that has been watered, open the ventilators to their full extent, and maintain a brisk warmth in the heating-apparatus.

EARLY FORCED VINES.—Stop or cut back all shoots of recent growth, and do all that is possible to mature the wood.

ORANGES.—Fruits approaching ripeness will be improved in flavour by a less moist atmosphere being kept than was advised at an earlier stage, the syringe being now dispensed with. Employ some kind of fertiliser whenever water is afforded the trees if they are heavily cropped; still those plants which are in vigorous health and bearing but a moderate crop will need no stimulus in that way. The strong-growing shoots which may be unduly taking the lead should be pinched at the points, and twiggy weak growth cut away when the head is likely to get crowded with wood, which will tend to the proper ripening of the shoots.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Merecroft Castle, Maidstone.

GENERAL HINTS.—Just now work amongst fruit trees abounds, and will so continue till all the training, summer pruning, and the in-gathering of the

fruit are finished. Peach and Nectarine trees are now making rapid growth, and must be attended to without delay; the earliest to fruit being those to receive first attention, training the shoots thinly but evenly all over the trees, and any of the weaker shoots that may not be required, or those which are not likely to bear fruit next year, should be cut back to two eyes; all sub-laterals should be removed, and the points pinched out of all those shoots that have extended beyond the allotted space, securing all shoots. The earliest varieties will have ripened their fruit, and the garden engine should be got to work to wash the foliage, repeating the operation till all red-spider and thrips are cleared off. In bad cases use soap-suds or a weak solution of soft soap and sulphur. The soil should be examined, and, if dry, it should be well soaked for several feet around with manure water, and some more mulching placed on the soil. Fruits of Hale's Early, Early York, and Early Dagmar will now be approaching ripeness, and should not be syringed until the fruit is gathered.

There will be the usual expenditure of time in preserving the fruits from damage by earwigs, wasps, bees, and flies. The most certain way of catching earwigs is to place pieces of Bean-stalks, or anything that is hollow like them, at intervals all over the trees, sticking the ends under the branches. These must be examined daily, and either blown out or shaken into a pail containing hot water; very choice fruits, or some special purpose may be protected with pieces of muslin, the points of the fruits being the place first damaged by the earwig. Flies, bees, and wasps, may be caught in bottles of sweetened beer, or under double hand-glasses baited with fruits.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

HARD-WOODED PLANTS.—Ericas, Epacrises, Indian Azaleas, soft-wooded Heaths, Boronias, Pimeleas, and other similar plants, whose growth for the season is complete, may be stood in the open air for some few weeks, the exposure greatly assisting the ripening of the wood and development of flower-buds. The plants should stand on boards or trellis-work, tiles, &c., or failing these, on a bed of coal-ashes, and the pots protected, in so far as regards the outer row, with boards, strips of bark, or they may be half plunged in the coal-ash bed, the direct sun's rays shining on the pots parching and injuring the roots greatly, if this be not done. Full sun all day long is also not desirable. Small plants should have the pots dropped inside of others several sizes larger. There should be some means adopted for protecting the plants from heavy rains, hail storms, &c. Freshly potted plants are best if kept under glass for a few weeks longer; a cold pit suiting them well. Care must be taken in affording these water at the roots, and use only rain water or that from ponds. Keep a watch on the plants for the powdery mildew, dusting affected parts with flowers of sulphur on first observing it. The Indian Azaleas are very liable to be infested with black thrips whilst under glass, so that when they come out of doors there is a good chance of easily washing them with soft soapy water, or a mixture of tobacco juice and water, and in fine weather overhead syringing in the evening is very beneficial. Any specimen which blooms late and may require repotting should now have attention. Do not afford large shifts, and always pot firmly both large and small plants, using peat of the best quality; a liberal amount of loam for large plants, and a good quantity of sharp silver-sand, and a small portion of fine charcoal.

Heaths, which flowered for some considerable period of time and are now gone over, must have their seed-vessels and dead flowers carefully cut off, and small plants which may have become pot-bound, and only those, should be afforded a shift into pots two or three sizes larger, afterwards keeping them close for a few weeks until the roots take possession of the fresh soil. Nothing injures Heaths so much as watering them as soon as they are potted. It is better to stand them on a bed of damp sand or coal-ashes in a pit, which will avoid the need to water them before the roots have penetrated to some extent the damp potting soil.

ACHIMENES.—Early-flowered pans will now have finished for this season, and may be removed to a pit and given full exposure to the sun, and sufficient water to keep the soil moist till the foliage begins to change and die off naturally. If this treatment be pursued with Achimenes, there will be no need to fear a scarcity of tubers at potting time.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY AUG. 9—Devon and Exeter Horticultural.
WEDNESDAY AUG. 10—Sevenoaks Horticultural.
THURSDAY AUG. 11—Taunton Deane Horticultural.

MEETINGS.

TUESDAY AUG. 9—
 { Royal Horticultural, Drill Hall,
 { James Street, Westminster. All
 { Committees.
 { Lecture at 3 P.M. on Fuchsias.
WEDNESDAY AUG. 10—
 { Royal Botanic Society, Regent's
 { Park. Anniversary Meeting at
 { 1 P.M.

SALE.

FRIDAY, AUG. 12—Established and Imported Orchids,
 at Protheroe and Morris' Rooms,
 at 12.30 P.M.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—62° S.

The Potato Disease and the copper treatment.

So far there is but little evidence of the Potato disease this year, but nevertheless Messrs. JAS. CARTER & Co. are trying in a field near Bromley (Kent) an interesting series of experiments to test the efficiency of sulphate of copper as a preventive of the Potato disease. The Potatoes were planted on April 8 in drills 36 inches apart. The sorts planted were Myatt's Ashleaf, Snowdrop, Beauty of Hebron, White Elephant, King of Russets, Cosmopolitan, Magnum Bonum, Bruce, Surprise, and Imperators. Of each of these two rows were planted side by side, two third portions of the rows being treated to a spray of the Bordeaux mixture on July 11, and again on August 2, the other third portion of the same rows being left untreated. So far, as we have said, there has been little or no disease visible this year, so that the efficiency of the copper solution in checking its ravages is not yet fairly tested. It is obvious, however, that the effect of the copper has been to check slightly the growth of the haulm and foliage, as the plants not subjected to the spray were the more vigorous. Here and there symptoms of scorching were visible on the leaves to which the spray had been applied, and it will be interesting to note which varieties are the most liable to be injured in this way.

The composition of the solution used is 11 lb. of sulphate of copper, 11 lb. of lime, and 100 parts of water. This quantity is sufficient for half an acre of Potatoes, and the total cost of the materials and of the labour is estimated at about £1 an acre. The mixture is of a pale blue colour, and is kept stirred. It is applied by a knapsack pump with a fine spray-nozzle of the French pattern, and by a similar apparatus manufactured

by Mr. STRAWSON. Armed with one of these machines a labourer passes between the rows, distributing the fine spray over and, as far as possible, also beneath the foliage. The results will be watched with interest, for in spite of failures and uncertain results there can be no question that we have in these copper solutions an important aid in combating the disease. Great care is, however, required in manufacturing the solution, so as to be sure that the acid caustic effects of the sulphuric acid shall be duly neutralised by the lime. What is aimed at is the deposit on the foliage, not of sulphate of copper, which is a caustic poison, nor of lime, which is scarcely less caustic, but of the neutral oxide of copper which results from the admixture of the copper salt with the lime. This oxide is injurious to the fungus, but not, or only slightly so, to the foliage of the Potato.

The reader is referred to an interesting contribution to the Scientific Committee, made by Dr. RUSSELL, and reported in another column, wherein that eminent chemist calls attention to the care required in making the solution.

As the fungus threads are not confined to the surface, but are in the substance of the haulm, and in the tuber, it must not be expected that the spraying with copper will absolutely prevent or destroy all the fungus; it will prevent the new spores from germinating on the surface, but it cannot touch the threads in the substance of the plant. There will probably, therefore, be a small percentage of diseased tubers at lifting time, whether the spray has been applied or not. All that can be expected is, that a considerable proportion of the crop, which otherwise would be sacrificed, will now be saved. It becomes a practical question whether this saving will justify the expense. In considering this point, we must not overlook the future as well as the present. It is not only the marketable tubers of the present, but the Potatoes used for seed in the future that have to be considered, and when due weight is given to these considerations, we cannot doubt that even in those cases where no disease occurs, and where, therefore, the use of the copper becomes needless, the check to growth is so small, and the cost of application so little, that the loss will be inconsiderable, and must be classed under the head of insurance—in fact, that the use of the copper solution will be found commercially profitable, as well as medicinally effective.

We have no exact data to go upon, but from what we have seen in former years we are disposed to think that for small growers, allotment holders, and cottage gardeners, the adoption of the Jensen system of high-moulding will be preferable to the use of the copper spray. In any case it is satisfactory to find that by either plan we have a means of attacking the dreaded enemy with a certain measure of success.

It is also satisfactory to find that the disheartening period of apathy and inaction has passed, and that growers have at last been stimulated to try some of the measures which have been pressed upon them for so long. There is still a great deal to be done in the way of destroying by fire affected haulms and tubers, and thus destroying the fungus instead of favouring its growth and scattering it broadcast, as is commonly done. But now that a beginning has been made, and now that the lecturers on practical agriculture and horticulture have the power of calling the direct attention of the cultivators to the best means of coping with the disease, we trust that the days of "do-nothing" are past. We cannot entirely stamp out the disease, but we can certainly muzzle it.

EPIDENDRUM VITELLINUM MAJUS.—The plant figured on p. 159 was engraved from a photograph kindly sent us by Major-General C. B. LUCIE SMITH, of The Acacias, Worthing, with the accompanying particulars about the plant:—"I have blooming at present in my cool house a plant of *Epidendrum vitellinum majus* in a 7½-inch pan, having 18 spikes and 172 flowers of exceptionally fine colour and substance. I obtained the plant when semi-established, in April, 1891, and it is now (July 2, 1892) flowering for the first time." Our readers will readily admit that the plant is an extremely fine one, and that it has produced an extraordinary number of flower-spikes and flowers. Most cultivators of Orchids would recommend the removal of so heavy a crop of bloom after the lapse of a month from the time the first bloom opened, so that the plant might not be unduly weakened, and the prospects for next season spoiled.

ROYAL HORTICULTURAL SOCIETY.—On Tuesday, August 9, 1892, a flower show will be held in the Drill Hall, James Street, Westminster, when prizes will be offered to amateurs for Fuchsias, and a paper on "Fuchsias" will be read by Mr. GEORGE FRY, at 3 P.M. On Tuesday and Wednesday, August 23 and 24, a great exhibition of Begonias, Apricots, Plums, Ferns, &c., will be held in the Society's gardens at Chiswick, and there will be a Conference on each day at 2 P.M.

THE GARDENERS' ORPHAN FUND.—The monthly meeting of the Committee took place at the Hotel Windsor on the 29th ult., Mr. W. MARSHALL, Chairman of the Committee, presiding. Among the special receipts announced were donations of two guineas each from the Chairman and Mr. H. HERBST; from Mr. G. W. CUMMINS the sum of £8 1s., the proceeds of a Rose Fair held in connection with the recent annual show of the Croydon Horticultural Society; from Mr. WILLIAM DEAN, Birmingham, the sum of £3 3s., a moiety of the proceeds from the sale of flowers at a Rose Show recently held in the College grounds at Moseley; and 15s. from Mr. A. J. BROWN, School of Handicraft, Chertsey.

ORCHARDS IN TASMANIA.—We had it the other day, on the authority of Sir E. BRADDON, K.C.M.G., that the area of orchards in the colony of Tasmania is gradually extending. It is felt that there is a great future for the trade in fruits—especially good Apples; and as fruit trees take some years to arrive at the profitable condition, no time should be lost in "sticking in a tree here, and a tree there." A statement recently passing current as truth requires contradiction here. It was to the effect that the Tasmanian Government would sell orchard lands on more favourable terms than now obtain, provided they are at once taken up. The Agent-General in London flatly contradicts this. Possibly a paragraph in one or two journals of the day, to the effect that "hands" accustomed to Apple-orchard work were wanted, has been transformed into the other piece of "news."

MARKET GARDENING IN THE TRANSVAAL.—A "recent arrival" writes from Johannesburg, in the Transvaal:—"The Boers seem a century behind the folks at home. . . . Shops kept by English and other settlers give a lively appearance to the place. . . . Butcher's meat is wonderfully cheap, which is more than can be said of market-garden stuffs: we pay 20s. for a sack (not over large) of Potatoes; and Cabbages range from 3d. each and upwards—more 'upwards,' as we pay 5d. and 6d. each for not over-grand specimens of the tribe."

VANILLA DISEASE.—Mr. GEORGE MASSEE describes in the last number of the *Kew Bulletin* (May and June) a disease affecting the Vanilla plants in the Seychelle Islands. The disease is caused by a microscopic fungus, *Calospora vanillæ*. The fungus passes through various stages, presenting a very different appearance in each, so that each received a distinct name before it was ascertained that the several forms were all stages of one fungus. The mischief to the living plant is caused entirely

by the "Hainsea" form of the fungus, as the *Cystispora* and *Calospora* forms only appear when the leaf is already killed. Basing his recommendation on the known facts of the life-history, Mr. MASSEE recommends that all the fading and dead leaves be removed and burnt at once, as the continuance of the disease depends entirely on the presence of such diseased leaves. Mr. MASSEE farther adds that all stages of the above disease have been observed at Kew on various species of *Oncidium* and *Dendrobium*.

THE FERTILITY OF PEATY SOILS.—There is a

from plant residues. In this respect, the scientist is not in discord with the practical man.

THE SOURNESS OF FRUITS.—From recent researches by L. ROOS and E. THOMAS, it appears that during the first ten or twelve weeks of vegetation of the Vine a sugar (a saccharine) exists in the leaves, sap, and even in the Grape. This is contrary to the accepted theory of PETIT, but the new results appear to be beyond question. In the fourth month of vegetation this sugar disappears, and the organs specified then contain a mixture of other sugars, in

insecticide and a fertiliser, and which is manufactured from alkali waste. The "lime-mud" obtained in making caustic soda or black ash is mixed with unslaked lime, moistened, and then dried and powdered. It is then ready for use, and may either be sown broadcast or, mixed with water, may be sprayed over infected trees and plants.

NATIONAL AMATEURS' GARDENERS' ASSOCIATION.—A party numbering nearly fifty members of the above had their usual outing on Saturday, July 23, visiting Messrs. H. CANNELL & SONS' Nurseries at Swanley



FIG. 29.—EPIDENDRUM VITELLINUM MAJUS: COLOUR OF FLOWERS, ORANGE-SCARLET.

paper in a German contemporary (*vide Landw. Jahrbuch*, xx., pp. 909—928) by C. L. WIKLAND, dealing with the phosphoric acid of soils and its estimation, in which it is stated that the attempts which have been made to ascertain the fertility of soils by means of chemical analysis have met with little success, owing, largely, to the want of vegetation experiments, showing the physiological value of the nutritive matters dissolved by the various reagents. He considers that, of all soils, those which are peaty seem most likely, when subjected to complete analysis, to yield results which would indicate high fertility, such soils being almost wholly derived

which glucose predominates. But the increase in the absolute amount of sugar does not correspond to the diminution in acidity, and hence it is not always true that the sourness of fruits diminishes in proportion to the approach of ripeness. The diminution in the absolute acidity is observed at the moment when the amount of leucose perceptibly increases in the fruit. For farther details, a paper in the *Comptes Rendus*, vol. cxiv., p. 593, may be consulted.

A NEW INSECTICIDE AND FERTILISER.—In America experiments have recently been conducted with a substance which is said to be both an

and Eynsford. The party was met by Mr. CANNELL, sen., who conducted them to his nursery at Swanley, and showed them over his numerous glasshouses, where much was noticed that delighted and surprised them. A luncheon was served at 5 o'clock in a neighbouring Inn; the party afterwards proceeding to Eynsford, where Mr. CANNELL has a farm, and seed, fruit, and tree nursery, which brought their very enjoyable visit to a finish about 8 o'clock.

EXHIBITION AT EARL'S COURT.—A special show of Carnations, Picotees, and garden produce took place on Monday last, August 1, in connection with

the International Horticultural Exhibition at Earl's Court. The show, which extended over the two following days, was not so good as might have been anticipated from the somewhat comprehensive schedule, and the competition, which was in some few instances fairly good, was not so keen as is usually the case.

CHINA-GRASS.—Some time since we drew attention to the fact that a French manufacturer has placed on the market, in competition with what is known as "Woollenised jute," beautifully prepared China-grass, of a variety of shades of colour, ready for the spinner to work up into upholsterers' wares. After a very brief interval, we had to record that the patentees of the woollenised jute had outdone the French manufacturer; to-day we have to note that the latter has very much improved on his first efforts in utilising the "grass," and has placed on the market an article which is certainly a great advance on his previous effort in colour, sheen, and softness. The chemist has been called in to furnish a solution, after taking up which, the fibre can with perfect safety stand preparation by hot rollers. The price, we hear, is also in favour of the material; and now we await the further improvement by our friends in Dundee!

"DICTIONNAIRE PRATIQUE D'HORTICULTURE ET DE JARDINAGE."—This is a French translation of NICHOLSON'S *Dictionary of Gardening*, the utility of which we have daily opportunity of testing. The French edition supplies some deficiencies in the English text, as well as some details suitable for the different conditions of French gardening. OCTAVE DOIN, 8, Place de l'Odéon, Paris, is the publisher.

PETER LAWSON AND SON, LIMITED.—The Directors' statement of the Company's affairs as at June 30, 1892, including the balance brought forward, shows the sum of £6224 12s. 9d. at the credit of profit and loss, and the Directors recommend that a dividend of 10 per cent. per annum, on the paid-up capital of the Company, free of income-tax, should be paid on September 1 next; also, they recommend that £1500 be added to the reserve fund, and that the sum of £2974 12s. 9d. be carried forward to next year's account. The Directors recommend the election of Mr. DAVID SYME, their present Manager, as a member of the Board of Directors. The annual meeting will be held at the office of the Company, 1A, George IV. Bridge, Edinburgh, on August 17.

HESSLE AND HOWDENSHERE HORTICULTURAL SOCIETY.—This was the first exhibition of this newly-formed Society, designed to take the place of the old Hull Society, which became defunct a few years ago. It took place on July 27 and 28 in the grounds of Tranby Lodge, Hessele, and was most successful, large numbers of persons being attracted from Hull and other places to see the display. A good beginning was made, as four large tents were required to take the exhibits, and valuable miscellaneous collections were sent by Messrs. F. Sander & Co., St. Albans; E. P. Dixon & Sons, Hull; Charlesworth, Shuttleworth & Co., Heaton, Bradford; W. Cutbush & Son, Highgate, London; W. Clibran & Son, Altrincham; G. Cottram, jun., Cottingham; W. Edwards & Sons, Sherwood, Nottingham; W. E. Martin, Hull; and J. R. Pearson & Sons, Chelwell; to all of which special awards were made. The leading and most successful exhibitors of plants, &c., were Mr. G. Wilson, gr. to Jas. Reckitt, Esq., Swanland Manor, Brough; J. Leadbetter, gr. to A. Wilson, Esq., Tranby Croft; Mrs. Mellish, Hedsock Priory, Worksop; Geo. Jarvis, gr. to B. Whitaker, Esq., Cliffe House, Hessele; J. Bridle, gr. to R. Falconer Jameson, Esq., Hessele, Hull; G. Cottram, jun.; J. H. Goodacre, gr. to the Earl of Harrington, Elvaston Castle; Perkins & Sons, Coventry, &c. A Certificate of Merit was awarded to a very promising new light Rose raised by Messrs. G. Swailes & Co., the Nurseries, Beverley, from Comtesse de Serenye, and named Mrs. Arthur Wilson. A large number of horticultural appliances were exhibited in various parts of the grounds.

THE OXFORD CARNATION AND PICOTEE UNION.—The eighth annual exhibition of Carnations took place in Mr. Dodwell's garden, Stanley Road, Oxford, on the 2nd inst., two spacious tents being required to accommodate the blooms sent for competition. Scarcely one of the northern growers was able to compete owing to the backwardness of the season; but Mr. M. Rowan of Clapham, who was 1st with twelve fine blooms of Carnations; Messrs. Read and Chaundey, of Oxford; Thomson & Co., and R. Sydenham, of Birmingham; W. Bacon, of Derby; F. Hooper, of Bath; J. J. Keen, F. Nutt, and W. Rebbeck, all of Southampton; C. Phillips, of Reading, and others staged very fine blooms indeed, and it was considered to be one of the best exhibitions ever held in Oxford; the quality of many of the flowers being very high. A considerable number of new varieties were staged, and several First-class Certificates of Merit were awarded. Mr. Dodwell's garden was singularly bright and effective with Carnations, thousands of expanded blooms being on view in addition to those submitted for competition.

CHICAGO EXHIBITION.—Costa Rica's pavilion at the World's Fair will be surrounded by gardens ornamented by a profusion of tropical plants, and in the galleries of the pavilion will be placed more than 3,000 beautiful birds, many of which have very gorgeous plumage. France intends to show its skill in landscape gardening at the World's Fair. A cablegram has been received from the French Commission asking that it be allowed to do, and bear the expense of, the "whole decoration of the spaces surrounding the Horticultural and the Woman's buildings." This generous offer, doubtless, will be accepted if it does not interfere with plans too far advanced to be changed. The French are world-renowned as artistic landscape gardeners, and it is believed, they would hardly have made the offer referred to unless they intend to make a display of surpassing beauty. The Commission asked also for 60,000 square feet for the French horticultural exhibit.

PRESENTATION TO MR. AND MRS. E. S. DODWELL.—This being the jubilee year of the marriage of Mr. and Mrs. DODWELL, advantage was taken of the annual exhibition of the Oxford Carnation Union in Mr. DODWELL's garden, Stanley Road, Oxford, on the 2nd inst., by a few personal friends to present Mr. and Mrs. DODWELL with a piece of plate in commemoration of the event. The weather was fine, and admitted of a large party sitting down to the luncheon at which the presentation was made, Mrs. DODWELL being present, with many members of the family, and a number of ladies and gentlemen.

EPWORTH.—The annual flower show was held on Monday, Bank Holiday, August 1, in the Rectory Grounds, kindly lent for the occasion by the Rev. Canon OVERTON, D.D. The schedule of prizes was much larger than before, and the cottagers came out strongly, and several gentlemen sent non-competitive exhibits. The strong features of the show were hardy fruit, Potatoes, Celery, and cut flowers. The Society is fast growing in importance, and Mr. F. GRANT, High Street, Epworth, is the Secretary.

FLOWERS IN SEASON.—We have received from Messrs. LAING & MATHER, Kelso, some flowers of a very nice flesh-coloured Carnation, of the size of a good Clove Carnation, and with grateful fragrance. It is a fine bloomer, with a perfect calyx. Under the name of Lady Nina Balfour it was recently certificated by the Caledonian Horticultural Society.

SPRING GROVE HOUSE, ISLEWORTH.—The grounds of this historic house were, on Thursday, July 28, the scene of the Hounslow Horticultural Society's annual show. Some excellent groups, good fruit, and generally meritorious productions of the neighbouring gardeners and nurserymen, were staged. Spring Grove is the residence of Mr. PEARS, the soap manufacturer, and is being greatly improved in every way.

TESTIMONIAL.—On Saturday, July 30, a marble timepiece was presented to Mr. W. M. BAILLIE, gardener at Luton Hoo, by the men employed under him, as a mark of respect and esteem, on his retiring from the charge of the gardens.

UTRECHT.—Our correspondent, Mr. J. K. BUDDE, has been appointed Curator of the University Botanic Garden, a post for which his experience in the Edinburgh Botanic Garden and elsewhere well fits him.

BRUSSELS HORTICULTURAL EXHIBITION.—The show was held simultaneously with the National Independence *fêtes*, and in the Orangery and adjacent houses in the Botanic Garden, under the auspices of the Royal Floral and Linnean Societies. Collections of mixed Orchids were staged by MM. G. VINCKE-DUJARDIN and A. A. PEETERS, each of which contained 250 plants. In the collection of the first-named exhibitor we noticed a fine *Eriopsis biloba*, *Cattleya gigas Sanderiana*, with large dark lip; C. Leopoldi, *Odontoglossum Harryanum*, with floral racemes $2\frac{1}{2}$ feet long, and twenty blooms; *Lælia grandis tenebrosa*, *Oncidium Lanceanum*, *Odontoglossum Alexandræ guttata*, *Masdevallia magnifica*, *Oncidium Kramerianum*, O. Forbesi, *Phalænopsis amabilis grandiflora*, *Masdevallia Backhousiana*, *Oncidium Forbesianum aureum*, *Cattleya Gaskelliana*, the lip purple, with scarcely any yellow; C. Mossiae grandiflora imperialis, *Vanda Kimballiana*, very rare; *Oncidium papilio grandiflorum*, *Cattleya Gaskelliana pallida*, *Cypripedium J. H. Haywood*, a hybrid flowered in Belgium for the first time; *Vanda aurea*, also bloomed here for the first time; *Odontoglossum hystrix*, O. Pescatorei, and *Lycaste Skinneri alba*. M. PEETERS showed *Grammatophyllum Ellisii*, rare and beautiful; *Cypripedium Chamberlainianum*, *Cochlidia Nötzliana*, a novelty; *Phajus Humbloti*, *Oncidium macranthum*, *Dendrobium filiforme*, with twenty shoots; *Odontoglossum cristabellum*, O. mulus illustris, O. virginalis, O. crispum guttatum, *Miltonia vexillaria*, *Cattleya Brymeriana*, C. Warscewiczii, &c. M. VINCKE-DUJARDIN also showed seventy-five good varieties of *Odontoglossum*, in which some specimens with five clusters bore sixty-six blooms. One variety had a large lip, much speckled, long, streaked with brownish-purple; another had purple sepals and white petals—sepals, petals, and lip spotted, the latter bordered with white; a third bore large flowers, spotted with orange; a fourth was spotted with carmine.

NEW PLANTS.—JACOB MAKOF ET CIE., of Liège, showed at the Brussels Exhibition a fine *Maranta Leopoldi*; *Nidularium striatum*, streaked with yellow; *Carludovica palmifolia*, *Dieffenbachia Lorenzi*, *Maranta iconifera argentea*, foliage white at base; *Vriesia Kitteliana*, a curious hybrid; V. conferta; *Cupania filicifolia Makoyana*, finer than the type, and more easily propagated; *Pandanus* sp. with elegant foliage. The following new *Anthuriums* were staged:—A. Andreanum Madame Gilkinet, spathe white, striped with purple; Emile Donea, spathe orange; Wilhelm Pfitzer, spathe blood-red, of unusual size; these three were from JACOB MAKOF ET CIE. M. PEETERS sent A. Rothschildianum, Grande Duchesse, A. de Luxembourg, spathe large, rounded; Trésorier Ph. Janssens, spathe prettily shaded; A. Scherzerianum Secrétaire Lubbers, large dark-red spathe, from M. DE CRAEN-LONGHÉ; A. Souvenir de Jules Pererbaix, of the Rothschildianum class, a fine well-spotted spathe from M. L. DE SMET. MM. DE SMET FRÈRES sent twelve fine Palms:—*Chamærops gracilis*, *Cocos campestris*, *Phoenix rapicola*, *Brahea glauca* (Roezli), shown for the first time, very white, and the upper part of petioles peculiarly marked; *Phoenix turbanii*, a variety of canariensis, but with more slender leaflets. M. DE CRAEN-LONGHÉ also sent good specimens. M. P. BINOT, of Petropolis, showed a complete collection of Brazilian Orchids, *Cocos Weddelliana*, and seeds. Ch. de B.

ODONTOGLOSSUM NAT. HYB.—This fine *Odontoglossum* has flowered for the first time; it is a good Pacho, flowers rounded and large, white with purple

edges, of beautiful texture with large deep purple spots on sepals and petals; lip large, rounded, spotted with clear brown; the flowers growing in a close cluster. Shown by M. G. VINCKE-DUJARDIN at the Brussels Horticultural Exhibition on July 21. Awarded a medal.

CYPRIPEDIUM YOUNGIANUM.—*C. selligerum* × *C. Veitchii*; it has the form of *selligerum*, the markings of *Veitchii*; the lip is the colour, the petal the form of the former, the shape of the lip and markings of the petal are those of the latter, while the colour is paler. Shown by the above-mentioned exhibitor on the same occasion.

CYPRIPEDIUM HYB. VAR. NOV.—Shown by M. A. A. PRETERS (*Lawrenceanum* × *concolor*), a remarkable flower, in form like *Lawrenceanum*, in colouring a peculiar mixture of both parents.

EPIPHYLLUM MAKOYANUM.—M. GUILL. DE BOSCHERE, at Berchem, Antwerp, has a fine specimen grafted on a stem $7\frac{3}{4}$ inches long; the head is fan-shaped, $1\frac{1}{2}$ foot long; the plant has 261 flowers and buds. *Ch. de B.*

HYBRID BETWEEN BLACK CURRANT AND GOOSEBERRY.—Mr. CULVERWELL writes, "You will be pleased to hear that my hybrid black Currant and Gooseberry is bearing fruit; there are only a few; possibly some were destroyed by the frost in April. The Gooseberries here suffered severely at that time. This shows that you were right in saying the flowers were perfect, and you saw no reason why they should not bear fruit. The fruits hang in pairs, unlike the Gooseberry, and are changing colour; they are in shape like a Gooseberry, and larger than the Currant. I shall be glad to send you a few of the fruits to see, if you wish it, for curiosity, when ripe. [We shall be very curious to see the fruits in question.]

MONSTROSITY OF MACROZAMIA SPIRALIS.—Baron VON MUELLER writes that Mr. CH. CRESWELL, of Sydney, states that he recently found, near Port Jackson, a female cone of *M. spiralis*, which tapered at the top into a male portion 6 to 8 inches long. He did not observe it at once, and afterwards could not find it again. We are familiar with similar changes in Conifers, but have never met with them in Cycads. The interest would be so great that we trust Mr. CRESWELL will be able shortly to rediscover his plant.

TECHNICAL EDUCATION.—We have before us a report from the department of Agriculture of the Yorkshire College, Leeds, which is one of the colleges connected with the Victoria University. It is very encouraging to find that professors and lecturers in agriculture and the sciences connected with it have been appointed, and that they have already done good work. Practical work on the farm as well as attendance on the lectures are required, in order that a certificate of proficiency may be obtained. In addition to this, lectures to and classes for farmers have been started in various centres, and these we learn have been successful beyond the most sanguine anticipations of the Committee; indeed, the word "enthusiasm" creeps into a sober report on the subject. Next winter courses of lectures on practical subjects will be again given in various districts, each lecture to be followed by a class at which questions may be asked from the lecturer. Examinations will be held at the close of the course, and those who pass them successfully will receive certificates from the Victoria University. Horticulture will probably have its turn. All this is encouraging.

—In *Natural Science*, Mr. J. PERCIVAL discourses of the progress made by horticultural education in Surrey. In one district in the county allotment gardens are established for young men, whose work is superintended by experienced gardeners. Lectures on plant-life are given occasionally. The class who benefit most by the scheme is said to be that which includes labourers, who are proud of their garden, the ordinary country gardener being usually ignorant of the things he

should know most about, and too conceited to accept instruction.

BRITISH GUIANA.—A correspondent having asked for information as to wages and other matters interesting to a gardener proposing to migrate to that colony, we availed ourselves of the kindness of Mr. EVERARD IM THURN, now in this country, and who has obligingly given the following replies, which sufficiently indicate the nature of the questions put:—

"1. An unrecommended man would probably find some difficulty in getting a situation as overseer; but if this were in any way obviated, the highest wages the beginner could expect would be about £40 per annum, an unfurnished room and board.

"2. Flannel shirts, thick knitted socks, old trousers and coats, wide-brimmed felt hat, and a decent black coat to wear at the Manager's table.

"3. An overseer's life is a hard one, and one of great exposure, and I should not recommend it to anyone of a marked rheumatic tendency.

"4. I think an overseer could not make use of choice seeds and bulbs until he was thoroughly established—then he might do so.

"5. I am, perhaps, mistaken, but suppose that no pollen would bear transportation to Guiana and still remain fertile. Of the orders mentioned, only Liliaceæ and Gesneriaceæ thrive in Guiana.

"F. IM THURN.
"August 8, 1892."

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—At the last meeting of the above, Mr. A. HESLOP presiding, an interesting paper was read by Mr. JAS. ELLIOTT, gardener at Jesmond Dene, Newcastle, on "Insectivorous Plants, their Peculiarities and Cultivation." The essayist exhibited several specimens, and he gave good instructions as to the cultivation of these plants generally. A discussion followed, in which some of the members took part. In the course of the evening Mr. E. DREY was presented with a prize for an essay on "Exotic Ferns." By the kind permission of Lord ARMSTRONG the members and friends of this Society will have their excursion to Cragside, Rothbury, on Tuesday, August 16.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting held on July 13, the Floral Committee awarded First-class Certificates to the following exhibits:—For *Vriesia splendens gigantea* (imported new plant), shown by Mr. C. W. R. Scholten, jun., Amsterdam; *Gladiolus brevifolius* var. *lutens* (new plant), shown by Messrs. De Graaff Brothers, Leyden; *Cheiranthus fl.-pl.* Hort. Dammann, 1890 (new plant), shown by Mr. P. Henkel, at Hilversum; *Bomarea Lehmanni*, Baker (insufficiently-known plant), Canna Madame Crozy, Liliun Grayi, S. Wats. (imported new plant), and *L. maritimum*, Kell. (imported new plant), shown by Mr. C. G. van Tubergen, jun., Haarlem. Second-class Certificates were awarded to Canna hybrida No. 1 (new plant), shown by Mr. J. C. de Lange, Rotterdam; and *Polygonum sphaerostachyum* (insufficiently-known plant), shown by Mr. C. G. van Tubergen, jun. A Botanical Certificate to *Wurmbea divisa* (imported new plant), exhibited by Messrs. E. H. Krelage & Son, Haarlem.

EFFECTS OF EARTHQUAKES ON VEGETATION.

—So even earthquakes exercise a beneficial influence, though they are apt to be rather alarming. Signor A. GOIRAU has recently asserted that they induce a more rapid growth of the young plant, and that the result is a greatly increased luxuriance of vegetation in the pastures, arable lands, vineyards and shrubberies; and this is accompanied by an unusually deep green colour of the leaves. It is not to the undulatory vibration which accompanies seismic shocks that this beneficial result must be attributed, but rather to these secondary causes, namely (a), an increased amount of carbonic acid in the air; (b), the diffusion of nutrient fluids through the soil when acting as a kind of manuring by natural distribution; (c.), the production of electricity. It may be said that some earthquakes appear to exert a bad effect upon vegetation, and instances may be quoted to support the assertion, but in all these instances it can be shown that the earthquakes have been associated with a long period of drought. Speaking of the

beneficial effects of electricity, we have yet to record the experiments by Professor A. ALOR in the early part of the year. He noted the influence of atmospheric electricity on the growth of *Lactuca scariola*, *Zea Mais*, *Triticum aestivum*, *Nicotiana tabacum*, and *Vicia Faba*, and has concluded from his observations that atmospheric electricity exercises an encouraging effect on vegetation; that the electricity of the soil has a similar influence on the germination of seeds; and that the less luxuriant vegetation of plants which grow in the neighbourhood of trees is due in great part to the diminution of temperature.

WHEN OUGHT [PLANTS TO FLOWER?]—In a German paper (the *Bot. Gazette*, xvii., 1892, p. 1), Herr A. F. FOERSTE advocates the view that the proper time for plants to flower is the late spring and the early summer. But plants like animals have in their way to struggle for existence, and in this effort two opposite tendencies have arisen, viz., (a).—To obtain advantage over surrounding plants by increasing in size, and thus receiving more air, light, and room for the development of their flowers; this tends to result in the flower being produced in late summer and early autumn. (b) To gain advantage on other plants by the earlier opening of their flowers, by blossoming before the light and air are interfered with by the development of the foliage; this is affected by the reduction of their internodes, and results in the flowers opening in the early spring. As an example of the way in which plants conduct their struggle for existence, it may be mentioned that some autumn-blooming flowers will not mature until the following spring if the conditions are unfavourable at their proper time.

PELORIA OF CATTLEYA GIGAS.—From Mr. LUCAS we have received a flower of this variety, in which the two lateral petals were developed in the form of lips, so that there were, in fact, three lips. Such flowers present close resemblance to the flat Irises like *I. Kämpferi*. A less frequent change is that in which the lip is present in the guise of a lateral petal, as we have seen it in *C. Skinneri* and others. Thus in one genus we get illustrations of the two forms of peloria—that in which the irregularity is heightened, and that on the contrary wherein it is lessened, the result in both cases being the production of a more or less regular flower instead of an irregular one.

PARASITES OF THE RASPBERRY AND APPLE.—The fungus, *Cladosporium herbarum*, which has hitherto been considered harmless, has recently been discovered to be capable of assuming a parasitic form. In this condition it affects the leaves of various plants, including the Raspberry and Apple, in the former spreading from the median to the secondary nerves, and penetrating within, and in the latter locating itself upon the edge of the leaves. There is a paper on these cases of parasitism by MM. PRILLIEUX and DELACROIX in the *Bulletin Soc. Mycol. de France*, vi., p. 134. These scientists also communicate some cases of parasitism in connection with a Botrytis epidemic in *Gentiana lutea*.

PLANT PORTRAITS.

CARYOPTERIS MASTACHANTHUS, *Revue Horticole*, July 16.

COTONEASTER REFLEXA, *Revue Horticole*, July 16, p. 327.

CHIMONANTHUS FRAGRANS, *Garden*, July 16.

ODONTOGLOSSUM TRIUMPHANS, *Revue de l'Horticulture Belge*, June.

AMYGDALOPSIS LINDBLEII, *Revue de l'Horticulture Belge*, June.

HOME CORRESPONDENCE.

DEW: THE NEW THEORY ABOUT IT.—What has come to Professor Wollmy and the writer of the statement in the *Gardeners' Chronicle* some short time ago? As yet we have not been favoured with an answer from the Professor, nor has any correspondence arisen other than "W. P. R.'s" and Mr. Greave's;

surely the subject is not exhausted, on such an important subject to gardeners at all times and places. The theory, as stated by your correspondent, requires that more should be said about it. I shall watch for anything that appears in your valuable journal concerning the matter, which is anything but threshed out yet. *Dewdrop.*

TROUT IN GARDENS.—Some persons think it absolutely necessary to have a running stream for trout to live in, but this is not so, as we kept several in a small pool in the garden for two years, and during that time they thrived really well. The pool in question is one of three in which Water Lilies, Flags, Bullrushes, &c., are growing, and Rhododendrons, Ferns, Bamboos, climbing plants, and such-like on the margin. The pools are made of concrete; some rough gravel laid at the bottom for appearance sake as an imitation of a natural stream. The water supplying these pools is pumped up from a chalk well, 250 feet deep, into a tank, from whence it flows through iron pipes by gravitation into the top pool of the three, out of this over a miniature weir, then into a larger pool. Fresh water was run into the top pool where the trout were kept twice a week for perhaps an hour at a time, except during the winter, when fresh water was run but little once a month or more, according to the state of the weather. The trout were caught in a neighbouring stream, and carried in a water-pot for 2 miles. They were but seldom fed, and then only with worms by which they were coaxed from under large shells and stones in the pool. When the trout were put into the pool there were many small gold fish in also, but they rapidly disappeared, the trout eating them by degrees. *E. M.*

THE LIFTING AND STORING OF POTATOS.—Already (July 28) the disease has made its appearance among Potatos, and yesterday I saw a cottager busy with a hook cutting off the tops, but I advised him to stay his hand, telling him that half a leaf was better than no foliage at all, as it was not an early sort he was operating on, and the tubers, if saved by being thus denuded of the tops, would have been of no use. Had they been Myatt's, or the old Ashleaf, or any sort at all near maturity, it would be well to take them up; and this I should advise to be done in all cases where the skins are set and disease is showing itself; but the lifting should be carefully performed, and all the tubers intended for seed left on the ground for a day or two before being stored, and then laid thinly in some cool, light, airy shed, and not moved again, if it can be avoided, as the less handling the better. Late sorts will not be ready to dig for at least another month, and I am glad to report them looking remarkably well, especially Magnum Bonums. Unfortunately all varieties of Potatos are backward, and the disease, if it comes in a virulent form, will do more harm than usual; but the weather seems now to have become more settled and dry, and therefore not so favourable to the spread of the malady. It is quite my opinion that we should be much more free of it if the American sorts of Potatos were not grown, as they are always the first to show it, their soft leaves and stems perishing from the attacks of it very quickly, and communicating the disease to others near, and perhaps far away. *J. Sheppard, Suffolk.*

APPLE LORD GROSVENOR.—This is by far the best early kitchen Apple that we grow on our strong soil, the fruit being ready for kitchen use earlier than Lord Suffield, which some persons so much favour, and not without reason, it certainly being a grand fruit in light soils. I gathered some fruits of Grosvenor on July 11 that were quite large enough for use, and that exhibited none of the woody flavour which some Apples have when early gathered. Twenty-five trees planted in 1890 are now heavily laden, and yet quite as many were taken off the trees at an early period as they are now carrying. The trees, in spite of the load they bear, are making satisfactory growth. *E. M.*

TRAINED GOOSEBERRIES.—I do not know whether fruit nurserymen as a rule grow cordon Gooseberry plants, but it is satisfactory to learn that they are in considerable request, and will probably become more so in good time. I asked Messrs. Veitch & Sons' fruit foreman from Langley the other day at the Drill Hall which sorts seemed to be most favoured for cordon training, and he replied, the large Lancashire show varieties. Not that Gooseberries were grown in that way for those especially, but rather it is the case that large fruits are now much more in request than formerly for

dessert purposes, bearing out the contention of our ordinary fruit authorities that the taste of big fruits on the dessert table rather increases than diminishes. These cordon bushes, if they may be so termed, are preferred to the fine upright stems, and in that way trained to low walls or close wood fences, or, as is so admirably done at Claremont by Mr. Burrell, to specially designed stout wire fences or trellises 4 feet in height. Probably the preferable method is against walls or close fences, as the bloom is then better protected; the fruits come larger and colour better, and they are by means of nets so easily protected from depredators. In the Gooseberry we have variety in the colour of the berries as well as more or less hairiness, and much difference in flavour and size, so that, with proper variation from day to day, at least a couple of dishes of diverse sorts may be gathered daily. Gooseberries are cleaner when grown on cordons, and, being easily thinned, the berries may be grown to a larger size than on a bush. Mr. Molyneux has at Swanmore a stiff soil on the chalk, which does not promote free growth in Gooseberries, so that little pruning is needed; but the bushes fruit so abundantly that the branches seem as if incapable of carrying their crops without some support. Everyone, however, is not so favourably placed, and where Gooseberries are shy of fruiting on bushes, that is just the place to go for cordon-trained trees on walls, fences, and trellises. For high flavour, Green Gascoigne, Pitmaston Greengage, Red Ironmonger, Red Champagne, Yellow Champagne, and White Smith are of the best; whilst of large ones, Lancashire Lad, Dan's Mistake, Monarch, and Conquering Hero, reds; Candidate, Leader, and Trumpeter, yellows; Thumper, Telegraph, and Shiner, green; and Antagonist and Freedom, whites, make up a round dozen of the best and finest in variety. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JULY 26.—Present: Mr. Morris (in the chair), Mr. McLachlan, Mr. Michael, Prof. Green, Prof. Church, and Rev. G. Henslow (Hon. Sec.); visitor, Dr. W. C. Williamson.

Termes at La Rochelle.—Mr. McLachlan having previously stated at the meeting held on June 21, that the species in question was a native of the Old World alone, though Mr. Warburton is still under the impression that it was introduced to La Rochelle from America, he added the following observations:—"Termes was first noticed at La Rochelle about 1798, and was supposed to have been introduced from St. Domingo, with which place there was much trade at that time. This erroneous idea evidently still exists at La Rochelle as a tradition, having been handed down from generation to generation. A much more probable explanation has been suggested, namely, that it was introduced into La Rochelle with firewood from Landes, where it is very abundant. Termes lucifugus has never been found in any part of North or South America, or in the West Indies. In geographical distribution it is essentially circum-Mediterranean, but extends into Spain, Portugal, and as far north as La Rochelle. I possess the insect from several localities on the European coasts of the Mediterranean, and also from Egypt and Algeria."

Dianthus Attacked by Fungus.—Mr. Massee reported upon the specimens sent to the last meeting by Rev. C. W. Dod, as follows:—"The fungus is *Helminthosporium exasperatum*, Berk. and Br., and is present in various stages of development. As to whether this fungus is the cause of the disease or not it is impossible to say without experimenting on healthy plants. This I am now doing, and will report later. I may add, that *Helminthosporium* has been shown to be the cause of disease in other cases."

Bouillie Bordelaise, Cause of its Failure.—The following communication was received from Dr. Russell:—"I send you now the result of my examination of the bouillie bordelaise used at Chiswick. Mr. Barron, I find, took 7 lb. of sulphate of copper and 10 lb. of quicklime: he slaked the lime in 10 quarts of water, and dissolved the copper sulphate in 7 quarts of water, and afterwards diluted these liquids so as to make the total quantity up to 100 quarts. The clear solution from the lime was added to the sulphate of copper solution, and the precipitate

allowed to settle. The Tomatos were syringed with the clear liquid. The effect has been disastrous, the stems and leaves having in every case been burnt, and the lower leaves had to be removed. Some of the same solution falling also on Vine leaves produced red spots (burns). Now this solution, prepared as above described, was simply a dilute solution of sulphate of copper, containing about one ounce of sulphate of copper in the gallon; so that the whole of the process for preparing the solution was entirely useless, and the product, viz., the hydrated oxide of copper thrown down by the lime, was allowed to settle and was not used; in fact, if you had taken an ounce of copper sulphate and dissolved it in a gallon of water you would have got a solution of exactly the same kind as the one which was used. In the letter from M. Cornu which you have sent me, I see it is stated that this hydrated oxide of copper is the active agent, and that the copper ought to be totally precipitated from the liquid. At the same time, I think that the nature and the preparation of this bouillie bordelaise has not generally been clearly stated and understood. I suppose I may assume that this hydrated oxide of copper is the substance which it is desired to prepare, but it will be a matter of the greatest importance as to whether it is suspended in a solution of sulphate of copper, or in lime water, or in pure water; all of which cases are possible according to the proportions of the materials used. In the case of Chiswick there was a deficiency of lime, and hence the copper sulphate remained in solution. To get rid of the sulphate of copper, which appears to have acted so injuriously, the instructions should be to continue the addition of lime till the liquid just ceased to have a blue colour when a depth of 2 or 3 inches is looked through. I should think that the different results which have been obtained by different experimenters may be to a great extent accounted for by the want of an exact description of how the bouillie bordelaise was to be made and how it should be used."

The following are extracts from M. Cornu's letter received by Dr. Masters (from the Muséum d'Histoire Naturelle, Paris):—"The proportions of the bouillie bordelaise vary from 3 to 4 kilogrammes of sulphate of copper, with 3 to 4 of quicklime, and 100 kilogrammes or litres of water [1 kil. = 2½ lb.; 100 litres = 22 gallons]. It is better to have less copper than lime, so that all of the former may be precipitated. The copper salt must first be dissolved in water (10 litres), and the lime also separately in 20 litres; the two must then be mixed together. Under these conditions the copper is reduced to the state of a hydrated oxide, which is quite or nearly insoluble, and does not burn the leaves. The lime also effects a mechanical adherence of the copper salt to the surface of the leaves. The hydrated oxide of copper becomes soluble under the influence of organic acids contained in small quantities in the liquid in contact with the vegetative organs. There is an elective property in cellulose membranes for salts of copper, and the natural explanation which follows from this fact is: first, that the *Peronospora* is killed by the salt; and secondly, that the spores cannot germinate upon leaves the membrane of which has imbibed the copper salt. Leaves which have thus received the mixture are not invaded by the *Peronospora*, while adjacent leaves are less easily attacked. It has been observed in Burgundy that the Vines were much less attacked by the *Peronospora*, the props of which had been treated with the sulphate of copper, than those not so treated. Hence it is advisable to soak all the objects which surround the plants, especially the props or supports, &c., in the bouillie bordelaise, as well as the walls, soil, pots, &c. The author finally suggests the trial of copper sulphide finely pulverised and scattered over the borders, plants, &c." With reference to this last-mentioned suggestion of M. Cornu, Professor Church observed that copper pyrites in fine powder suspended in mine water has been proved to be most injurious to young grass in water meadows. Free sulphuric acid and basic sulphate of copper and iron were produced; the acid being the chief destructive agent.

Black Rice from Burmah.—Professor Church announced his discovery of the occurrence of a red pigment in the grain of the Black Rice of Burmah. A sample of this remarkable variety of Rice was recently handed to Professor Church for chemical analysis by the Director of the Royal Gardens, Kew. It was an imperfectly decorticated sample, most of the grains still retaining portions of the dark-coloured pericarp. Plunged into slightly acidulated alcohol the pigment dissolved with a magnificent crimson colour, and proved to be identical with one

of the most widely-diffused and best known of vegetable colouring matters. This is the compound represented by the empirical formula $C_{20}H_{20}O_{10}$, and known by various names, such as *anolin*, *anthocyan*, *erythrophyll*, and *colein*. It occurs in black Grapes and black Currants, in the leaves of the Copper Beech, in the stems and leaves of *Coleus Verschaffeltii*, in the florets of the crimson Dahlia, &c. It is soluble in alcohol, but insoluble in ether, and nearly so in pure water; and may thus be distinguished from carotin, which dissolves in ether, and from amarantin, which is soluble in water, but not in alcohol. It becomes purple, then blue, and finally green, or even yellow, by the action of alkalis. Its spectrum is quite characteristic. A full account of this pigment was published in the *Journal of the Chemical Society* for March, 1877.

Figs, Diseased.—Mr. Barron sent some varieties of yellow Figs from Chiswick with dark green spots. Each spot proved to have a scale insect, *Mytilaspis ficus*, in it. The leaves were also affected, but these were neither damaged nor discoloured as was the fruit.

Verbascum, Fasciated.—Mr. Paul exhibited a fine specimen of this plant in this abnormal condition. Mr. Henslow observed that he had several very long fasciated stems of *Asparagus* this year, exceeding 6 feet in length, and from 2 to 3 inches in breadth. He also added that he had raised a fasciated *Tropæolum* by seed for six years in succession. *A propos* of hereditary malformations, Dr. Masters wrote to say that although Dr. Hugo de Vries had succeeded in reproducing by seed the spirally twisted variety of the *Teazle*, yet plants raised by himself from seeds sent to him by Dr. Vries had grown quite normal.

Proliferous Mignonette.—A specimen of this monstrosity was sent by Mr. W. Treseder, of Cardiff. It proved to be the same as one issued by Mr. W. Balchin of Hassock's Gate in 1881, and called *Reseda odorata*, var. *prolifera alba*. It was described and figured by Rev. G. Henslow in the *Journal of the Linnean Society*, vol. xix., p. 214, pl. 32. The peculiarity resides in the fact that every branch arises out of the centre of an abortive flower, and occupies the place of the pistil. Occasionally two branches arise out of the same flower. Each of the branches, especially the lower, may have lateral ones. These also in the same way rise out of the centres of similarly proliferous flowers. The plant, of course, cannot seed, but can be propagated readily by cuttings.

Vegetable Marrow, Malformed.—Mr. Henslow showed a specimen in which a lateral branch had flattened out, and was adherent to the side of a fruit some 5 inches in length. At the summit of the latter a leaf was given off, as well as another branch similarly adherent to a second fruit of about 2 inches in length. At the summit of this was also a leaf, together with a normal flower-bud. In addition to the last-mentioned youngest fruit, there was also a second growing from the apex of the first or lowermost fruit. This was about 4 inches in length, quite free, and normal in character. By the side of this was a young branch with leaves, buds, and tendrils, all undeveloped, and apparently quite normal.

The next meeting of the Scientific Committee will be held on October 4.

National Carnation and Picotee.

JULY 26.—The exhibition of the above was held in the Drill Hall, James' Street, Westminster, in conjunction with the Royal Horticultural Society's meeting on the above date.

It was said by an old Carnation grower that this was the best exhibition of Carnations ever seen in London. It was an extensive show, the flowers were large, and the bizarres and flakes in which scarlet and crimson predominated were in many cases very bright, but the ground colour of not a few was creamy, as if more time was required to bleach them out to the required purity. In a few cases the flowers were getting past their best, but only occasionally so. The Picotees lacked purity of the ground colour also, and the marginal colours were flaky, probably owing to the coldness of the present month. The yellow grounds were numerous and very good, the selfs and fancies superb. A company of young growers from Southampton did well, the southern atmosphere, and more favourable conditions of climate favoured them, and their flowers generally were of excellent quality. Miscellaneous contributions of Carnations were numerous and interesting, and those who admire the Carnation

found much that afforded a varied study of the flower.

Carnations.—In Class A. for twenty-four blooms of Carnations, not less than twelve varieties, Mr. J. Douglas, gr. to Mr. Whitbourn, Great Gearies, Ilford, was placed 1st with large and full flowers; a few somewhat rough and dull-coloured, others particularly bright and effective. He had C.B. Homer, R.F. Thalia, P.F. C. Henwood, S.B. Eurydice, very promising, bearing a fine petal, and richly-coloured flakes; C.B. Phoebe, S.B. Robert Lord, S.F. Rob Roy, P.P.B. Sarah Payne, S.F. Mrs. C. Graham, very fine; R. F. Lady M'Currie, S.B. Robert Houlgrave, C.B. Virgil, S.F. Alisemond, C.B. William Skirving, S.B. J. Crossland, R.F. Rob Roy. A few of the foregoing were shown in duplicate, and the remainder were seedlings. 2nd, Mr. C. Turner, with rather smaller but brighter flowers generally, and undoubtedly of the finest quality. He had P.P.B. Harmony, delicate in colour; R.F. Lady Maria Currie, P.F. C. Henwood, very fine; S.F. Tom Macreath, very bright; C.B. Joseph Lakin, C.B. Rifleman, C.B. H. K. Mayor, S.B. Robert Houlgrave, S.F. Henry Cannell, P.P.B. Jim's Favourite, S.B. Dr. Hogg, very fine; R.F. Mrs. Gibson, S.F. Tom Pinley, C.B. Squire Llewellyn, S.F. Charles Turner, and C.B. Harrison Weir. 3rd, Mr. Martin Rowan, Manor Street, Clapham, with flowers remarkable for their quality, regard being had to the fact they were grown so near to London. 4th, Mr. F. Hooper, Widcombe Nursery, Bath.

There were five collections of twelve blooms, and here Mr. Rowan came in 1st with a dozen flowers, generally of very fine quality, having R.F. Thalia, C.B. J. S. Hedderly, P.F. George Melville, S.B. Robert Lord, C.B. J. D. Hextall, P.F. Gordon Lewis, S.F. Alisemond, P.P.B. Sarah Payne, S.B. Alfred, S.F. Sportsman, C.B. Edward Rowan, and S.B. Robert Houlgrave. 2nd, Mr. C. Phillips, Hamilton Road, Reading, with R.F. Rob Roy, S.B. George, P.F. Gordon Lewis, S.B. Admiral Curzon, P.F. Mr. May, C.B. Harrison Weir, P.F. James Douglas, S.B. Robert Houlgrave, P.P.B. Rifleman, and S.F. Flamingo; 3rd, Mr. H. W. Headland, High Street, Leyton. There were eight collections of six blooms, and here Mr. J. J. Keen, Southampton, was 1st with some excellent flowers, remarkable for their purity and richness of marking, having P.P.B. Sarah Payne, P.F. Gordon Lewis, R.F. Lady Mary, P.P.B. William Skirving, S.B. Fred, and S.F. Matador. 2nd, Mr. Joseph Lakin, Temple Cowley, Oxford, with S.B. Alfred, P.F. James Douglas, P.P.B. William Skirving, S.F. Matador, P.P.B. Harmony, and R.F. Sybil, very fine; 3rd, Mr. F. Cattley, Bath.

Then followed what are known as the class flowers or single blooms, and the awards of the judges went as follows:—Scarlet bizarres, 1st, Mr. M. Rowan with Robert Houlgrave; 2nd, Mr. C. Turner with Dr. Hogg; 3rd, Mr. J. Douglas with seedling; 4th, Mr. J. Keen with seedling; 5th, Mr. J. Lakin with Robert Houlgrave.

Crimson bizarres.—1st, Mr. F. Hooper, with Mrs. A. Cattley; 2nd, Mr. R. Sydenham, with J. S. Hedderly; 3rd and 4th, Mr. C. Black, with Phœbus; 5th, Mr. H. W. Headland, with seedling.

Pink and purple bizarres.—1st, Mr. J. J. Keen, with Sarah Payne; and it was interesting to see this old flower at the head of its class after nearly fifty years' culture.

Purple flakes.—1st, Mr. C. Phillips, with James Douglas; 2nd, Mr. M. Rowan; and 3rd, Mr. F. Nott—both with George Melville; 5th, Mr. J. Douglas, with Simonite's Mrs. Douglas, having a fine depth of purple.

Scarlet flakes.—1st, Mr. J. Douglas, with Matador; 2nd, Mr. R. Sydenham, with Henry Cannell; 3rd and 4th, Mr. M. Rowan, with Sportsman; 5th, Mr. J. Douglas, with Alisemond.

Rose flakes.—1st, Mr. W. J. Lakin, with Sybil; 2nd, Mr. C. Turner, with Lady M. Currie; 3rd, Mr. F. Hooper, with Mr. G. Codling; 4th and 5th, Mr. C. Blick, with Thalia.

The premier Carnation, selected from the entire exhibition, was S.B. Dr. Hogg, shown by Mr. C. Turner, a richly-coloured flower of fine quality.

Picotees.—There were five stands of twenty-four blooms, in not less than twelve varieties, and here, as in the case of the Carnations, size rather than finish appeared to be favoured by the judges. Mr. J. Douglas was placed 1st with L. rose E. Favourite, L.P.E. Her Majesty, L. red E. Violet Douglas, H. red E. Brunette, L. rose E. Miss Flowdy, H. rose E. Lady Holmesdale, L.P.E. Ann Lord, H. rose E. Mrs. Sharp, L. red E. Mrs. Bower, and seedlings; 2nd, Mr. Charles Turner, with smaller flowers, but very

pure, and of fine quality generally, having H. red E. Adolphus, H. rose E. Mrs. Harford, L. rose E. Favourite, L. rose E. Lady Emily Van de Weyer, H. rose E. Mrs. Rudd, H. red E. Brunette, L.P.E. Lady Gordon Cathcart, H. red E. J. T. S. Geggie, L.P.E. Miss B. Coutts, Medium P.E. Zerlina, H.P.E. Muriel, H. red E. Morna, L.P.E. Esther, H.P.E. Mrs. Chancellor, L. red E. Thomas William, and H. red E. J. B. Bryant; 3rd, Mr. M. Rowan.

With twelve blooms, Mr. C. Phillips was 1st out of seven stands, having excellent blooms of L.P.E. Jessie, H.P.E. Zerlina, L. rose E. Orlando, H.P.E. Muriel, H. red E. Brunette, L. rose E. Mrs. Ricardo, H. red E. J. B. Bryant, L.P.E. Lady Curzon, H. red E. Morna, H. rose E. Mrs. Sharp, L. red E. Mrs. Gorton, and H.P.E. Tinnie; 2nd, Mr. H. W. Headland, with L.P.E. Pride of Leyton, a flower of excellent quality; H. red E. J. B. Bryant, L.P.E. Clara Pension, L. red E. Souvenir of H. Headland, L. rose E. Favourite, H. rose E. Lady Holmesdale, H. red E. Dr. Epps, H. rose E. Mrs. Sharp, and seedlings; 3rd, Mr. M. Rowan.

There were eight competitors with six blooms, Mr. J. J. Keen being placed 1st with H. rose E. Norman Carr, L. rose E. Favourite, L. rose E. Ethel, H. red E. Isabel Lakin, H. rose E. Madeline, L.P.E. Clara Pension; 2nd, Mr. J. Lakin with L. rose E. Favourite, medium P.E. Amelia, L.P.E. Juliette, H. rose E. Norman Carr, H. red E. Isabel Lakin, and H. rose E. Elise; 3rd, Mr. J. Rebbeck, Southampton.

There were four collections of twelve yellow grounds, Mr. C. Turner running Mr. Douglas very close indeed for 1st place. The latter had Aurora, Mrs. R. Sydenham, Remembrance, Lilian, Mrs. Henwood, and Seedlings of much promise. 2nd, Mr. C. Turner, with Mrs. Henwood, Edith, M. Wynne, Mrs. Walford, Countess of Jersey, Almira, Consolation, Canariensis, Remembrance, and Optimus, a few of the foregoing being shown in duplicate. 3rd, Mr. C. Phillips, who had very good blooms of Annie Douglas, Dorothy, Prince of Orange, and Victory; and, as showing the popularity of the yellow ground varieties, there were ten collections of six blooms. Mr. F. Hooper was placed 1st, with Countess of Jersey, Mrs. F. Baker, Mrs. Wood, and three fine seedlings. 2nd, Mr. F. Nutt, with Almira, Duchess of Teck, Annie Douglas, Terra Cotta, Agnes Chambers, and Stadraith Bail. 3rd, Mr. J. J. Keen.

Single Blooms.—In these, as in the case of the classes for Carnations, a large number of flowers were staged. Heavy red edges: 1st and 2nd, Mr. J. Douglas, with Seedling; 3rd, Mr. J. Lakin, with Isabel Lakin; 4th, Mr. C. Turner, with Dr. Epps, and 5th, with Brunette. Light red edge: 1st and 3rd, Mr. C. Turner, with Thomas William; 2nd, Mr. H. W. Headland, with Souvenir of H. Headland; 4th, Mr. Rowan, with Mrs. Gorton; 5th, Mr. C. Phillips, with Thomas William. Heavy purple edges: 1st, Mr. J. Douglas, with Muriel; 2nd, Mr. Keen, with Amy Robsart; 3rd, Mr. C. Turner, with Zerlina; 4th, Mr. M. Rowan, with Calypso; 5th, Mr. F. Nutt, with Becky Sharp. Light purple edges: 1st, Mr. H. W. Headland, with Pride of Leyton, and 4th, with the same; 2nd, Mr. J. Lakin, with Miss Lakin; 3rd, Mr. C. Turner, with Mary; 5th, Mr. J. Douglas, with Ann Lord. Heavy rose edge: 1st and 3rd, Mr. J. Keen, with Mrs. Sharpe; 2nd and 5th, Mr. Nutt, with the same; Mr. H. Startup was 4th, with a Seedling. Light rose edge: Mr. J. Douglas was 1st and 4th; Mr. H. W. Headland, 2nd; and Mr. J. Keen, 3rd and 5th, all with Liddington's Favourite. Yellow ground: 1st, Mr. C. Turner, with Countess of Jersey; 2nd, Mr. J. Douglas, with Mrs. Henwood; 3rd, no name, with a Seedling; 4th, Mr. Nutt, with Almira, and 5th, with Agnes Chambers. The selfs and fancies were strikingly fine, generally large full flowers, many of them brilliantly coloured. The best twenty-four blooms were shown by Mr. C. Turner, who had fine examples of Lady Mary Currie, a fine pink self sport; Germania; Rose Unique, a very fine self; Victory, yellow ground; Marnie Murray, a glorious reddish-rose self; Niphetos, white self; Iona Ruby, ruby-pink, very fine; Mrs. Ford, white; Lord Rendlesham, Mrs. R. Hole, King of Scarlets, bright scarlet; Romulus, which had run to a pale buff self; The Governor; Rose Thynne, a fine maroon self; Victory and Gwendoline. 2nd, Mr. J. Douglas, with Mrs. Walford, yellow ground; Lily Henwood, Germania, Victory, Niphetos, Mrs. Reynolds Hole and seedlings; Mr. Douglas, like Mr. Turner, having several of the named varieties in duplicate; 3rd, Mr. C. Blick, gr. to Mr. R. Smith, Esq., Hayes Common, Kent, who had a very fine Eudoxia, a deep pink self; Germania,

very fine; Mrs. George, rosy pink, very fine; and Florizel, maroon; 4th, Mr. M. Rowan. Eight stands of these were exhibited.

There were thirteen stands of twelve blooms dissimilar, and here Mr. J. J. Keen was placed 1st with A. W. Jones, Y.G.; Mrs. Kingscote, edged with pink; Gladys, Lord Rendlesham, Hebe, Victory, Mrs. Harcourt, Mrs. Fred. Vandyke and seedlings; 2nd, Mr. F. Nutt with admirable blooms also of Rose Celestial, Almira, Exile, Stadraith Bail, Theodore, very fine; Mrs. Fred. Vandyke, bright slate colour, flaked with carmine; Annie Lakin, Terra Cotta, Budge, pink; and Germania; 3rd, Mr. C. Blick; 4th, Mr. C. Phillips.

As usual there was a class for a dozen blooms of Carnations in pots, the object being to develop excellence as decorative subjects; but in this direction we do not appear to have made any substantial advancement during the last thirty or forty years. Plants were then grown and bloomed in pots as they are now, and quite as well. The great advance has been made with the Malmaison type of Carnations, of that there can be no doubt; and as they are now grown, they are valuable decorative plants. The best lot came from Mr. Turner, who had Irma, white self; Harmony, P.F.; Romulus, Y.G.; C. Henwood, P.F.; King of Scarlets, self; Duchess of Sutherland, R.E.P.; Ruby, self; L.R.E. Favourite, Mrs. Clements, Y.G.; Victory, Y.G.; Mrs. Nicholas, L.P.E., &c. 2nd, Mr. J. Douglas, who had Niphetos, white self; Lady Gwendoline, self; Mr. Walford, Y.G.; Mrs. R. Sydenham, Y.G.; Eurydice, Y.G.; Thalia, R.F., &c. Two or three other collections are shown, but the plants are hardly seen to the best advantage standing along the middle of a table.

The competition for Mr. Martin Smith's prizes brought a fair number of varieties of what are assumed to be improved border varieties. In the class for a bunch of self-coloured, of not less than twelve trusses, Mr. J. Douglas was 1st, with Oriflamme, a bright scarlet self, of good petal, free and early; but the flowers were unequal, some being thin and rough, although they were showy. Mr. T. Loday, Willingham, Cambs, was 2nd, with a pure white self, well-shaped, and having a good petal; it is as yet unnamed. 3rd, Mr. Jones, Kensington, with Pink Perfection, a bright rosy-pink self, and a good grower. Mr. F. Hooper showed a deep purple self, shaded with maroon; Mr. Bones, Tower House, Chiswick, a large finely-formed white self, fifteen flowers being shown, all from one plant; and Mr. G. H. Sage, Ham, showed a salmon-pink self.

In the class for six varieties of self-coloured border Carnations, Mr. F. Hooper was placed 1st, with Queen of Purples; Lady Constance, pink; Gaiety, pale scarlet; Gluck, shaded crimson; Lady Cavendish, deep purple; and an unnamed variety. Mr. J. Douglas was 2nd, with some blooms that were unnamed. Mr. A. Harrington, Shrubland Park Gardens, Ipswich, 3rd, with some rather large French varieties.

In the class for nine bunches, flaked bizarre or fancy varieties, Mr. F. Hooper was 1st, with Bertha, Y.G.; Abiah, S.F.; Clipper, yellow, flaked red; Mrs. W. Dean, light rose-edged Picotee; and some unnamed varieties; 2nd, Mr. J. Douglas, with unnamed varieties.

Seedlings.—Prizes were offered for seedlings, but it was very difficult to gather up anything like a reliable account of those awarded. First prizes were awarded to Mr. J. Douglas for Homer, C.B. Carnation, very rich in colour, and fine in petal, large and full; Atrato, P.F., finely flaked, with a deep bright blue-purple, fine in petal; Ganymede, H. red E. Picotee, of good promise; Melpomene, medium rose E. Picotee, pure and good; Desdemona, light rose E. Picotee, the colour pink-rose, and very pleasing; Eurydice, a very fine Y.G., of good colour; and Zeno, medium red E. Picotee. As far as could be learned, no other exhibitor received prizes for seedlings.

First-class Certificates of Merit were awarded to Homer, Melpomene, Zeno, and Eurydice. The same award was made to Mr. William Badcock, Oxford Road, Reading, for a large, full, and fine-petalled white self, named Lady Wantage, that promises to take a high position.

Among miscellaneous contributions, Messrs. James Veitch & Sons, Royal Exotic Nurseries, King's Road, Chelsea, had a large and interesting collection, set up in bunches of three blooms, each backed with their own foliage. Among the self flowers the following were very good:—Beauty of Foxhall, purple; Dr. Parke, pink; Queen of Bedders, rosy-crimson; Lady Gerrard, bright pink; Earl of Beaconsfield, crimson, flaked with black; Dorothy, buff and reddish-pink; Mrs.

F. Gifford, pure white; Magnum Bonum, crimson; Amy Herbert, rosy-pink; Rose Celestial, soft rosy-pink; and several others equally fine. Mr. F. Gifford, nurseryman, Tottenham, had a few seedling Cloves of great merit, because of their fine fragrance: such as Camlet, bright scarlet, large, full, brilliant, very sweet; Oxonian, deep crimson-maroon, highly fragrant; Maggie Laurie, soft pink; Montague, bright red; and Mrs. F. Gifford, white. Messrs. J. Laing & Sons, Stanstead Park Nursery, Forest Hill, had Carnations and Picotees in bunches. Mr. H. G. Smyth, Drury Lane, Jim Smyth, a deep scarlet Clove. Mr. C. Blick, gr. to Martin R. Smith, Esq., Hayes, had a large and extremely interesting collection, certificates being awarded to Marnie Murray, a pale pinkish-rose self, with a very fine petal; Miss Constance, a bright S.F.; Aline Newman, a pale scarlet self; The Pasha, something in the way of Mrs. Reynolds Hole, but brighter and paler in colour, a fine flower, large and handsome; and Mrs. Harris, R.F. From Mr. W. Burton, gr. to Mr. C. Jones, Tonbridge, came several blooms of a very good white self, named Beauty of Tonbridge, said to make a very good border variety.

Awards of Merit.

To Carnation Horace Skimpole, Martin R. Smith, Esq.
" The Pasha, Martin R. Smith, Esq.
" Miss Constance Graham, Martin R. Smith, Esq.
" Marnie Murray, Martin R. Smith, Esq.
" Oriflamme, Mr. Jas. Douglas.
" Lady Wantage, Mr. Badcock.

MEDALS.

Silver-Gilt Flora.

For Carnations, &c., Messrs. Veitch & Sons.

Silver-Gilt Banksian.

For a group of Carnations, Martin R. Smith, Esq.

PORTSMOUTH HORTICULTURAL SHOW.

JULY 13.—We are informed that the net gains on this show, which was held in the Victoria Park, Portsmouth, on the above and two following days, will be dispensed amongst the local charities.

The show was a good one, and the best prizes fell to gardeners in Sussex and Hampshire. Mr. Offer, of Handcross Park, Crawley, taking the highest for twelve plants, half-flowering, half-foliage; and for Crotons, single flowering specimen plant, and specimen Ferns.

Mr. Wills, florist, Winchester Road, Shirley, was 1st for Begonias, and a group of mixed plants; whilst Mr. Hatch, gr. at Victoria Park, took premier prizes in Gloxinias and Fuchsias.

Fruit made a fine display, Mr. Inglefield, Sir J. Kelk's gardener at Tedworth, was a long way 1st for the collection of fruits.

The best black Grapes were those shown by Mr. Taverner, gr. to Sir A. K. Macdonald, Woolmer, and Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Fareham, the latter also won in the any variety class, with superb bunches of Buckland Sweetwater.

Vegetables were good for the season, and Lady Guest's gardener, Mr. Wilkins, Inwood House, Dorset, took the 1st prize for a collection of nine kinds.

HIGHGATE HORTICULTURAL.

JULY 21.—A very nice show of horticultural productions by gardeners, cottagers, and nurserymen was held in the grounds of the Priory, Highgate.

Groups.—Here a novelty in this class was seen in groups to consist of plants in flower only. The result was variety certainly, and plenty of colour, but not much of taste. Mr. Brooks, gr. to W. Reynolds, Esq., J.P., Highgate, had the best of the two arranged, having Fuchsias, a good plant of Bougainvillea glabra, several of Hydrangea paniculata, Francisceas, Gloxinias, Petunias, &c. Mr. H. Eason, gr. to B. Noakes, Esq., Highgate, was 2nd, Fuchsias very largely predominating, and Clerodendron Balfourianum.

In the class for ordinary decorative groups, Mr. Tubbs, gr. to H. Begnart, Esq., Highgate Lodge, was 1st, having in his some well-flowered white lancifolium Lilies. Stove and greenhouse plants: Mr. Eason was the chief exhibitor of these, having nine plants in bloom, a good Clerodendron Balfourianum, but the other plants were weak. The same exhibitor also had the best six foliage plants, including a good Asparagus plumosus, Anthurium crystallinum, Kentia Belmoreana, &c. This group also took the *Gardener's Magazine* Silver Medal.

The best specimen flowering plant was a fine Ixora Williamsii, and the best foliage plant a huge Latania

berbonica from Mr. Brooks. There were other classes for smaller plants, but they have no public interest.

Begonias were plentiful; Mr. H. G. Russell, gr. to H. Mansfield, Esq., Highgate, had the 1st prize for half dozen in one class; and Mr. Eason better, because dwarfer and more compact grown plants in another. A big class for twelve Begonias and twelve Gloxinias brought many rather small and none too meritorious plants; Mr. Eason having the best.

In a class for six Gloxinias some fair plants were placed 1st, from Mr. Eason, and the 2nd from Mr. Wilkinson, gr. to F. Lowe, Esq., Crouch End. One lot of four Orchids were shown by Mr. Eason—Cypripedium barbatum giganteum and Sedeni; Miltonia vexillaria, and Odontoglossum Pescatorei.

Zonal Pelargoniums were fairly good, the best bloomed plants, but very stiffly flat-trained, coming from Mr. Eason, and Mr. Russell, who was placed 2nd, had free-grown stout plants, that should bloom finely later. Petunias formed a very strong class, the best flowered came from Mr. Brooks, and were placed 1st, but the best grown plants, yet only partially flowered, and all doubles, came from Mr. Russell. Fuchsias were numerous, Mr. Webber, gr. to H. Smith, Esq., Muswell Hill, having the best four in medium-sized well bloomed pyramids, but the only six staged were poor thin plants. Mr. Eason had the best six Ferns, including a huge Davallia Mooreana and several Adiantums. Mr. Tubbs had the best six Caladiums, including well-coloured plants of Madame Heine, Varus, and Prince Albert Edward. The best six Coleus came from Mr. Brooks—good pyramidal plants.

Cut Flowers.—Roses were moderately shown. Mr. W. Taylor, Hampton, set up some nice fresh blooms, but not for competition; and the box having the best twelve blooms had no card attached. The best twelve bunches of cut flowers came from Mr. Brooks, and Mr. Page, gr. to F. Crisp, Esq., Southgate, was 2nd. The latter exhibitor staged the best twelve bunches of Begonias, set up very tastefully with Maidenhair Fern, and presented one of the prettiest arrangements in a cut flower class we have seen. Mr. Eason had the best twelve bunches of zonal Pelargoniums.

Table decorations were limited, the best three ordinary stands or epergnes being dressed with white Iceland Poppies, yellow flowers of Eschscholtzia, grasses, Ferns, &c. Hardy flowers in bunches were numerous shown.

Fruit.—Mr. H. A. Page was the only exhibitor in the class for white Grapes, having a capital Foster's Seedling, also the best three black Grapes in good Madresfield Court. He was also placed 1st in the class for six dishes of fruit, having good Foster's Seedling Grapes, Melon, Dr. Hogg Strawberry, Cherries, Raspberries, &c. Mr. Brooks was 2nd. Mr. Page was also 1st with eighteen dishes of bush and other hardy fruits, a good variety. Mr. Russell coming 2nd, largely with Gooseberries.

In **Vegetables**, Mr. Page had the best collection, Mr. Brooks being 2nd. The latter had the best dish of Tomatoes—a good sample; and Mr. Page the best three dishes of Peas, in Telephone, Duke of Albany, and Telegraph; Mr. Gregory coming 2nd, with the same varieties.

Various collections of ornamental plants from the neighbouring nurseries at Holloway and Highgate gave some additional interest to the show.

AYLESBURY FLORAL AND HORTICULTURAL.

JULY 21.—The exhibits were staged in the Corn Exchange, and the lower or Butcher's Market, which, if not thought suitable by the aesthetic, yet answered admirably, being cool and convenient. In the Corn Exchange, the groups and specimen plants and Ferns were arranged on the floor around the outside of the Hall, while the cut flowers, fruit, and some of the smaller plants were staged on tables extending the length of the building.

Of the groups, those not competing were far away the best, notably the grand exhibit of Baron F. de Rothschild, M.P., where it was pleasant to mark a deviation from the common manner in finish—two curved lines to right and left, the space between the two projections being filled with a glorious group of plants of Malmaison Carnations, in the three colours, full of health, and carrying some grand flowers, the background formed of fine Palms, Crotons, &c., with a well-flowered Clerodendron Balfourianum in the point of sight, while the foreground was broken and relieved by some Saxifraga pyramidalis placed at intervals among the small Palms, Adiantums, and finely-coloured Caladiums.

Mr. Leopold de Rothschild also sent from Ascot a fine group of Carnations, nearly 100 plants, showing evidence of the best culture.

The fruits, with the exception of the Grapes, and a very well-done collection by Mr. Robbins, gr. to Colonel E. D. Lee, which took the premier award, were hardly up to mediocrity. Lady R. de Rothschild took 1st prize for a collection of plants, and also the Silver Medal of the *Gardeners' Magazine* for high cultural skill; Earl Temple being a very close 2nd, with somewhat smaller plants.

Ferns were well exhibited, there being a doubt in the minds of the judges whether the six Ferns exhibited by Mr. H. Cazenove, which took 1st prize, were not entitled to the Silver Medal awarded to Earl Temple.

The cottagers and amateurs staged some very creditable exhibits both in the cut flowers, plants, and fruit. Roses, having suffered from the wet and wind, were not a strong feature, but thirty-six, which took the 1st prize in the open class, and shown by Mr. Mattock, of Headington, were very creditable.

Vegetables were in quantity and quality generally good, Peas only deserving a special note. The cottager, under ample encouragement from Miss Ada Rothschild, Mr. H. Wyatt, and Mr. W. Hazell, put some very good vegetables in collections, and some baskets of salading which were good in quality and variety.

NATIONAL CHRYSANTHEMUM.

JULY 22.—For a few years past the members of this Society have had an annual outing or picnic, generally to some place of horticultural interest, and on this occasion it took the form of a visit to Penshurst Place, the Kentish seat of Lord D'Alsie. This took place on the above date, a large party journeying from Charing Cross and London Bridge. Penshurst was reached soon after eleven o'clock, and the company proceeded to Redleaf, the residence of F. E. Hills, Esq., who had kindly given permission for the company to pass through Redleaf on their way to Penshurst. Redleaf has long been famous for its beauty and high culture; and the late Mr. John Cox has a worthy successor in Mr. W. Holah, who was for a considerable time foreman at Redleaf. Mr. Holah met the party at the entrance, and conducted them through the grounds, which are beautifully undulating, rich in fine trees and choice evergreen and deciduous shrubs, some magnificent Conifers being greatly admired. The conservatory adjoining the residence, with its effective fernery and crystal fountain, the plant-houses and flower gardens, were visited, also the forcing-houses and fruit-gardens, and many points of interest were inspected, to the great delight of the party. Leaving Redleaf, by Mr. Holah's residence, access was gained to Penshurst Place Park, which is of great extent, finely wooded and rich in noble timber trees, Oak, Elm, Beech, &c., with acres of luxuriant Fern.

HAYWARD'S HEATH HORTICULTURAL.

JULY 27.—The show at Hayward's Heath was, as usual, very well attended, but the competition was not quite up to the usual standard. There are few shows where a larger number of the trade growers offer special prizes than at that of the Hayward's Heath Society.

The classes were very numerous. The chief of these was a group of plants staged for effect, not to exceed 50 square feet. The 1st prize was £3, and the Silver Medal of the Royal Horticultural Society. This was won by Mr. S. Horscroft, gr. to Mr. Potter, Chidingly; the 2nd prize and Bronze Medal went to Mr. J. Sands, gr. to T. Bannister, Esq., Hayward's Heath. These groups were well and tastefully arranged.

In the class for groups of Ferns and Foliage Plants, Mr. A. Scott, gr. to Mrs. Jenkins, Burgess Hill, was 1st; Mr. J. Wickham, gr. to J. Humphrey, Esq., Keymer, 2nd.

Messrs. Wood & Son, Maresfield, Sussex, exhibited some good examples of Roses—Mrs. J. Laing, Madame Falcot, L'Idéale (good), P. Wilder, Merveille de Lyon, Earl of Dufferin, and many others. This firm also put up some good Carnations and Picotees. Among other trade exhibits, not for competition, Messrs. Knight of Hailsham showed some first-class Roses; so also did Messrs. Woollard of Cooksbridge, Lewes.

Messrs. J. Cheal & Son, Crawley, had cut Roses, and a stand of charming Violas; also cut flowers of Begonias, both double and single. Several herbaceous

subjects were put up in good form, the best being Pentstemons, Aconitums, Delphiniums, and Eranthis Youngii.

Messrs. J. Peed & Son, Norwood, occupied one end of a tent with a very pretty group of Dracenas, Crotons, Palms, Acalyphas, Gloxinias, &c. The group shown by Mr. Ellis Turner, of Hayward Heath, was decidedly the best in the show. Ornamental Begonias, Coleus, Ferns, &c., with a cross of lichen-moss, having a few Maréchal Niel Roses, with berries of Barberry japonica for centre, was much admired.

Vegetables are always shown in strong numbers and good quality at this show, and were better than ever this season. It may be described as a very successful gathering, and the whole of the exhibits were of good quality.

SCOTLAND.

NOTES FROM WOODBANK, DUMFRIES.

ON a former occasion, June 12, 1886, we gave a general account of this interesting place, the residence of Charles Scott, Esq. At that time the absorbing feature was the splendid collection of Orchids, Indian Azaleas, and stove and greenhouse plants. On making a recent visit, we found that the grand specimens of Orchids had been disposed of, in order to make room for other subjects of interest to Mr. Scott, whose horticultural taste is of the catholic order. Orchids are still fostered to a large extent, Odontoglossums in particular being numerous, and remarkably well done. The young growths of these showed splendid vigour, although on several occasions last winter, the whole stock, consisting of many hundreds, were, owing to a defect in the heating-apparatus, frozen hard to the stage on which they stood. This was cool treatment with a vengeance, but the plants seemed to have enjoyed it, for they were perfect examples of successful culture. Some capital varieties of *O. Pescatorei* and *O. Alexandræ* were in bloom. *Cattleyas*, *Lælias*, *Phalænopsis*, and *Cypripediums* are yet plentiful, but younger and smaller specimens occupy the place of the splendid examples that formerly filled the houses to overflowing.

But, regarded either as a charming floral treat, or a masterly display of cultural skill, a collection of Carnations, comprising about 1000 plants, which occupied a fine span-roofed house, 60 feet \times 21 feet, was perhaps the most striking testimony to Mr. Geo. H. Cole's all-round abilities in this thoroughly well-managed place. The chief feature of the collection was the Malmaison varieties, all of which, including Lady Middleton, were there represented by perfect specimens, laden with their lovely flowers. Other notable varieties were Germania, Prince of Orange, Princess of Orange, Duchess of Fife, Duke of Clarence, Raby, and Mrs. Reynolds Hole, with many others of sterling merit.

In a rapid survey of the other houses, superb Crotons, unsurpassable in their perfect colouring; Nepenthes, Dipladenias, Ixoras, and Gardenias, were all notable for their fine condition; and not to be out of the fashion, Mr. Cole is quite at home in Chrysanthemum culture, as was attested by some hundreds of plants of the leading autumn and winter varieties in suitable quarters out-doors; and many of the early-flowering sorts, such as Madame Desgranges white and yellow, and Mrs. Hawkins, blooming handsomely in the conservatory.

Every pot-plant here is grown in glazed pots—Orchids, Heaths, Azaleas, Chrysanthemums—and, as with Mr. Thomson at Drumlanrig (the apostle of this practice), results speak volumes for their suitability for plant-culture, and for their wholesome and attractive cleanliness.

SCOTTISH BEE-KEEPERS' ASSOCIATION.

The second summer show of this Association was held within the showyard of the Highland Society's show at Inverness, on July 26, 27, 28, and 29. Though the season was very backward and stormy, there was a good display of honey, the most of the honey staged, as on the occasion of the Association's last show at Dundee, being the produce of the Eng-

lish honey-raisers. The supply of heather honey was very limited, and was of the last year's production, the honey for this season not yet being ready. In hives and appliances the most creditable show was made by Scottish manufacturers, the distance being too great for the English makers to be attracted.

The Association claims that the importance of this industry can scarcely be over-rated, when it is borne in mind that during the last two seasons the value of the imports amounted each year to the large sum of £50,000, the whole of which, if sufficient bees were kept, might have been kept in this country. A gigantic model bee, which can be taken to pieces, was also exhibited, and altogether the exhibition was one that proved of great interest to visitors.

THE BULB GARDEN.

NARCISSUS BERNARDI \times .

UNDER this name we designate the natural or wild hybrids between *N. Pseudo-Narcissus* and *N. poeticus*. Of these, I selected about a hundred on the Pic d'Entecade in 1886, where *N. Pseudo-Narcissus* of the varieties known as *N. muticus* and *N. variformis* grow in abundance, mixed with *N. poeticus*, flowering at the same time. These hybrids represent in a crude form all the hybrid varieties known as Leedsii, Barri, Nelsoni, Burbidgei, and so on; but mostly want the finish of the selected garden forms of hybrid. I was surprised to find in 1887 that the collected Bernardis were producing seed in abundance, because generally true hybrids in *Narcissus* produce seed sparingly or not at all, and I suspected that they had been again fertilised by *N. poeticus*, which flowered in my garden simultaneously near them, all the trumpet Daffodils being over. From this seed I have raised several hundred seedlings, and about half-a-dozen flowered this year. So far they are of a different type from their parents, and belong to the short-crowned variety known as Burbidgei, confirming my suspicion that they are crossed in another degree with *N. poeticus*. I sent the flowers to Mr. Engleheart, who knows more about these crosses than many of us. *C. Wolley Dod*, *Elge Hall*.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.					More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
Above (+) or below (—) the Mean for the week ending July 23.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.						
0	3 —	71	0	— 26 + 212	1 —	136	23.1	21	29	
1	4 —	81	0	— 138 + 241	0	aver 108	13.6	25	33	
2	6 —	80	0	— 82 + 186	0	aver 107	13.0	21	32	
3	6 —	88	0	— 72 + 210	3 +	103	12.5	35	38	
4	6 —	86	0	— 39 + 250	1 —	93	12.2	27	35	
5	5 —	102	0	— 78 + 138	1 +	79	9.5	36	41	
6	3 —	89	0	— 72 + 193	2 —	104	20.9	35	35	
7	4 —	90	0	— 49 + 165	1 —	106	16.6	33	36	
8	3 —	99	0	— 29 + 117	6 —	97	13.3	43	42	
9	3 —	92	0	— 63 + 122	5 —	113	17.8	23	32	
10	2 —	103	0	— 37 + 132	7 —	102	18.0	25	36	
*	2 —	115	0	+ 30 + 42	6 —	98	13.2	58	49	

DISTRICTS.	TEMPERATURE.					RAINFALL.			BRIGHT SUN.	
	Above (+) or below (—) the Mean for the week ending July 30.	ACCUMULATED.				More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 3, 1892.	Total fall since Jan. 3, 1892.	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 3, 1892.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 3, 1892.	Below 42°, difference from Mean since Jan. 3, 1892.					
0	1 +	Day-deg. 96	Day-deg. 0	Day-deg. — 11 + 212	Day-deg. 8 —	137	23.2	45	30	
1	1 —	102	0	— 135 + 241	7 —	109	13.7	36	33	
2	4 —	94	0	— 97 + 186	6 —	109	13.2	29	32	
3	4 —	109	0	— 84 + 210	6 —	103	12.5	33	37	
4	3 —	104	0	— 54 + 250	6 —	93	12.2	39	35	
5	2 —	127	0	— 80 + 138	4 —	80	9.6	52	42	
6	0 aver	106	0	— 69 + 193	9 —	104	20.9	44	35	
7	2 —	107	0	— 54 + 165	8 —	107	16.7	43	36	
8	0 aver	123	0	— 25 + 117	8 —	97	13.3	59	42	
9	1 —	106	0	— 60 + 122	8 —	114	17.9	38	32	
10	1 —	117	0	— 36 + 132	7 —	102	18.0	50	36	
*	1 —	125	0	+ 27 + 42	6 —	98	13.2	39	49	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts:—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts:—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending July 30, is furnished from the Meteorological Office:—

"The weather during this week was fair and dry until towards the end of the period, when rainy conditions appeared in the north, and sharp thunderstorms were experienced at many of our southern and south-eastern stations.

"The temperature slightly exceeded the mean in 'Scotland, N.,' and just equalled it in 'Scotland, W.,' and England, 'S.W.:' in all other districts it was again below the normal, the deficit ranging from only 1° or 2° in the extreme western districts, to as much as 4° in 'England, N.E. and E.' The higher of the maxima, which were recorded in most places either on the 29th or 30th, ranged from 77° in 'England, S. and S.W.,' and 78° in 'Scotland, E.,' to 72° in the 'Midland Counties' and 'England, N.W.,' and to 68° in the 'Channel Islands.' The lowest of the minima were registered during the early part of the week, and varied from 38° in 'Scotland, E.,' and 39° in the 'Midland Counties' and 'Ireland, N.,' to 48° in 'England, E.,' and to 53° in the 'Channel Islands.'

"The rainfall was much less than the mean, the total fall for the week being in most cases appreciably small.

"The bright sunshine continued less than the mean in 'Scotland, E.,' and 'England, E. and N.E.,' and showed a deficit in the 'Channel Islands' also; in all other districts, however, it was in excess. The percentage of the possible duration ranged from 59 in 'England, S.W.,' 52 in 'England, S.,' and 50 in 'Ireland, S.,' to 33 in 'England, E.,' and 29 in 'England, N.E.'"

VEGETABLES.

CARTER'S "HARBINGER" LETTUCE.

SOMEWHAT large plantings of this new Cabbage Lettuce were made by me this year in various situations—on south and north borders, and on the top of the Celery ridges, and in each case the subject has been most satisfactory. The leaves, forming the immense solid heads, are broad, light green in colour, beautifully curled and fringed, being well blanched, and of fine quality. It is a decided acquisition to our already fairly long list of Cabbage Lettuces. In appearance Harbinger resembles Sutton's Favourite, but it is more curled, and attains to a larger size than that excellent variety does, and, like it, Harbinger remains good for several weeks without showing a disposition to run. *H. W. Ward.*

MARKETS.

COVENT GARDEN, August 4.

This having been holiday week, business was very tame, and prices have suffered accordingly. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Cherries, $\frac{1}{2}$ -sieve	3 0-5 0	Melons, each	1 0-2 6
Currents, Red, $\frac{1}{2}$ -sieve	2 6-3 0	Peaches, per doz.	2 0-8 0
— Black, $\frac{1}{2}$ -sieve	4 0-4 6	Pine-apples, St. Michael, each	2 0-6 0
Grapes, per lb.	1 0-2 0	Strawberries, per lb.	0 3-1 0
Lemons, per case	12 0-25 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Heliotrope, per doz.	3 0-6 0
Arum, per dozen	6 0-9 0	Hydrangea, per doz.	9 0-18 0
Aspidistra, per doz.	15 0-30 0	Ivy Pelargonium, per doz.	4 0-6 0
— specimen, each	11 6-21 0	Lilium Harrisii, doz.	18 0-30 0
Begonia, per doz.	6 0-12 0	Lobelia, per doz.	2 6-4 0
Calceolaria, per doz.	3 0-6 0	Marguerite, per doz.	6 0-12 0
Coleus, per doz.	4 0-6 0	Mignonette, doz. pots	4 0-6 0
Cyperus, per dozen	4 0-10 0	Palms, various, each	2 0-10 0
Dracena, each	1 0-5 0	— specimens, each	10 6-84 0
Ferns, various, doz.	4 0-9 0	Pelargonium, p. doz.	6 0-12 0
— per 100	8 0-12 0	— scarlet, p. doz.	2 0-4 0
Ficus elastica, each	1 6-7 6		
Fuchsia, per doz.	3 0-6 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	3 0-4 0	Myosotis, or Forget-me-not, 12 bunches	1 6-4 0
Carnations, 12 blms.	0 9-1 6	Pansies	1 0-2 0
— 12 bunches	3 0-6 0	Pelargonium, scarlet, per 12 bun.	3 0-4 0
Cornflower, 12 bun.	1 6-3 0	— 12 sprays	0 6-1 0
Eucharis, per dozen	2 6-4 0	Poppies, 12 bunches	2 0-6 0
Gardenia, per dozen	1 6-3 0	Primula, double	4 0-6 0
Heliotrope, per doz. sprays	0 3-0 6	Pyrethrum	2 0-4 0
Lilium Harrisii, doz.	2 0-6 0	Roses, Tea, per dozen	0 9-2 0
— various, doz.	1 0-3 0	— coloured, dozen	1 0-1 6
Maiden Hair Fern, 12 bunches	4 0-6 0	— yellow (Mare-chals), per doz.	2 0-5 0
Marguerite, per doz. bunches	3 0-4 0	— red, per dozen	1 0-2 0
Mignonette, 12 bun.	2 0-6 0	— outdoor, 12 bun.	2 0-6 0
Orchids:—		Stocks, doz. bunches	3 0-6 0
Cattleya, 12 blms.	4 0-8 0	Sweet Peas, doz. bun.	2 3-4 0
Odontoglossum crispum, 12 blms.	2 0-6 0	— Sultan, 12 bun.	2 0-4 0
ORCHID-BLOOM in variety.		Tuberose, 12 blms.	0 3-0 6

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes Globe, ea.	0 4-0 6	Mushrooms, punnet	2 0-...
Beans, French, lb.	2 6-3 0	Mustard and Cress, punnet	0 4-...
Beet, red, per dozen	2 0-3 0	Parsley per bunch	0 3-0 6
Carrots, per bunch	0 4-0 6	Shallots, per lb.	0 6-...
Cauliflowers, each	0 3-0 6	Spinach, per bushel	3 6-...
Cucumbers, each	0 6-0 9	Tomatos, per lb.	0 4-1 3
Endive, per dozen	2 0-3 0	Turnips, per bunch	0 4-0 0
Herbs, per bunch	0 9-1 0		
Lettuces, per doz.	1 6-2 0		

POTATOS.

NEW POTATOS.—Kidneys, 90s. to 100s.; Beauty of Hebrons, 65s. to 75s.; Rounds, 60s. to 65s. Market firmer.

OLD POTATOS.—Finished. *J. R. Thomas.*

SEEDS.

LONDON: Aug. 3.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report that to-day's market presented quite a holiday appearance, with but few transactions passing. Trifolium incarnatum keeps firm; France seems to have very little seed to spare, and a good English demand is shortly expected. There is no change this week in either Mustard or Rape seed. Canary seed exhibits great and continued strength. For Hemp and Linseed the inquiry is slack. Blue Peas are firmly held. Other articles at this quiet season offer no subject for remark.

FRUITS AND VEGETABLES.

BOROUGH: Aug. 2.—Quotations:—Cabbages, 5s. to 6s. per tally; Peas, 3s. 6d. to 4s. per bushel; new Carrots, 3s. 6d. to 4s.; Turnips, 2s. 6d. to 3s.; Parsley, 2s.; Spring Onions, 4s. to 6s. per dozen bunches; Egyptian do., 5s. 6d. to 6s. per cwt.; English Apples, 3s. per bushel.

SPITALFIELDS: Aug. 2.—Quotations:—English Apples, 4s to 6s. per bushel; foreign Tomatos, 1s. to 1s. 3d. per box; Gooseberries, 2s. 6d. to 3s. 6d.; black Currants, 4s. 6d. to 5s.; red do., 3s. 6d. to 4s.; black Cherries, 3s. to 4s. 6d.; Orleans Plums, 6s. to 7s.; Walnuts, English pickling, 2s. to 2s. 6d. per half-sieve; Seakale, 9d. to 1s. per punnet; Cabbages, 3s. 9d. to 7s. per tally; Turnips, 2s. to 3s. 6d.; Carrots, 2s. to 3s.; Spring Onions, 3s. to 4s. 6d.; Parsley, 1s. to 1s. 6d. per doz. bunches; Cauliflowers, 1s. 6d. to 2s. 6d.; Endive, 6d. to 9d.; Cabbage Lettuce, 2d. to 4d.; Leeks, 2s. to 2s. 6d.; frame Cucumbers, 1s. 6d. to 2s. 6d.; natural do., 6d. to 9d.; Beetroot, 3d. to 8d. per dozen; French Beans, 4s. to 4s. 9d.; Scarlet do., 5s. to 6s.; Broad do., 1s. 6d. to 2s. 6d. per sieve; Peas, 5s. 6d. to 7s. per sack; Cos Lettuce, 4d. to 6d. per score; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Horseradish, 1s. to 1s. 1d. per bundle; Mint, 1s. to 1s. 6d. per dozen bundles.

STRATFORD: Aug. 2.—The supply to the market during the past week has been plentiful, and a brisk trade was done at the following prices:—Cabbages, 4s. to 6s. per tally; Turnips,

1s. to 2s. 6d. per dozen bunches; Mangels, 20s. to 26s. per ton; Onions, Egyptian, 60s. to 80s. per ton; Port Onions, 6s. to 7s. per case; Apples, English, 6s. to 7s. per bushel; Tasmanian, 4s. 6d. to 7s. 6d. per box; Peas, 2s. to 3s. per sieve; do., 5s. to 6s. 6d. per bag; Cucumbers, frame, 1s. 6d. to 3s. 6d. per dozen; do., Dutch, 1s. to 2s. do.; black Currants, 4s. to 5s. 6d. per half-sieve; red do., 3s. to 3s. 6d. do.; bunch Onions, 2s. to 3s. per dozen; bunch Carrots, 2s. to 2s. 6d. do.; Scarlet Beans, 2s. 6d. per sieve; French do., 2s. 6d. do.; Broad do., 3s. to 3s. 6d. per bag.

FARRINGTON: Aug. 4.—Quotations:—Tomatos, 1s. 3d. per box; Cherries, white, 5s. per basket of 24 lb.; do., black, 5s. 6d. do.; Currants, black, 5s. 6d. per half-bushel; do., red, 4s. do.; Plums, Gages, 3s. 6d. per 14 lb.; Orleans do., 4s. per 16 lb.

POTATOS.

BOROUGH, Aug. 2.—Quotations:—St. Malos, 3s.; Jerseys, 4s. per cwt.; Early Rose, 60s.; Hebrons, 60s. to 65s.; Snowdrops, 70s. to 80s. per ton.

SPITALFIELDS: Aug. 2.—Quotations:—New: English:—Myatt's Kidneys, 65s. to 75s.; Regents, 70s. to 80s.; Imperators, 70s. to 85s.; Hebrons, 75s. to 85s.; Early Rose, 70s. to 75s. per ton.

GENERAL AVERAGE: August 3.—New: English Snowdrops, 80s. to 90s.; Kidneys and Hebrons, 60s. to 80s.; White Beauties, 60s. to 80s.; Early Rose, 60s. to 70s. per ton; French, new, about 3s., and Jerseys, 4s. per cwt.

STRATFORD: August 2.—Quotations:—Snowdrops, 70s. to 90s.; Myatts, 60s. to 80s.; White Elephants, 60s. to 75s.; Hebrons, 60s. to 80s.; Regents, 60s. to 70s. per ton.

FARRINGTON: August 4.—Quotations:—Best Beauties, 8s. to 85s.; White do., 75s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending July 30, and for the corresponding period last year:—1892: Wheat, 29s. 5d.; Barley, 21s. 1d.; Oats, 21s. 6d. 1891: Wheat, 38s. 9d.; Barley, 26s. 6d.; Oats, 21s. 5d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 108s.; do., inferior, 46s. to 78s.; Hay, best, 60s. to 108s.; do., inferior, 26s. to 50s.; and Straw, 20s. to 38s. per load.

NOTICES TO CORRESPONDENTS.

** PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

APPLE TREE: *G. W.* Wait till the leaves change colour—you need not delay operations till they fall—then take out a trench 2 feet deep about as far from the stem as the branches extend, and carefully dig out the roots, working the soil into the trench, and throwing it out at the side. When a good armful of roots are got out, wrap them in wet straw, and proceed further, and when all the roots are got out of the soil, plant the tree in a previously-prepared station, using good loamy soil about the roots, filling in a little at a time, making it firm about every bit of root as you go on. If the soil is very dry, a good watering should be afforded when the hole is half-filled, and again at the finish. Finish up with the soil rather in the form of a hillock round the stem than a hollow, as it is sure to sink. The tree should also stand on a well-trodden hillock raised in the centre of the hole. Before planting, all wounded and decayed portions of the roots should be pruned off, making the cuts so to slope, that when the tree is stood in position, the cut surface will press on the soil. Afford a mulch before bad weather sets in, which should be 4 or 5 inches thick, and stake the tree securely with three stakes, put in about 15 inches from the stem. If the head is very heavy, the longer branches may be somewhat cut back, and all weak shoots in the middle cut clean away.

BEGONIAS: *C. K.* There will be less risk of loss of plants if you keep the seed in the capsules till the middle of the month of January, and then sow it thinly in shallow pans of light sandy peat and leaf mould. The plants should be raised in heat of from 65° to 75°, and grown on in the same during the spring and early summer.

CARNATIONS: *F. K.* We cannot undertake to name florists' flowers. Send them to some specialist.

FUNGUS: *A. J. H.* The fairy ring Champignon, *Marasmius oreades*. The giant Puff-ball is edible while still snow-white. Other Puff-balls are dangerous. The dried spores have a stupefying property.

GARDEN LABOUR: *Perplexed Gardener.* The staff of workmen might suffice under strict supervision if so many of them were not so much away from the garden attending to their own affairs; as it is, you seem to require the services of two extra workmen. It is, after all, a question for the employer to decide on the score of expense. Many employers would like to give more employment to their poor neighbours, but for the increase of wages which they can perhaps ill-afford to meet.

GLOXINIA: *J. B.* Your Gloxinia bloom is similar to Messrs. Sutton's Her Majesty, but not quite equal in size and substance.

GRAPES: *Subscriber, Worksop.* The Grapes were too much putrified to be properly examined. Send some that are not so badly affected, and we will have them examined. It seems to be a disease which is not at all common in this country.

HOW MUCH WOULD IT TAKE TO START A NURSERY BUSINESS THAT WOULD BRING IN £50 TO £60 PER ANNUM? *Gardener.* We should not care to advise you. Perhaps some of our correspondents who know something of the difficulties and hardships of having to exist on what a small capital brings in would kindly advise you. Locality near a large town in Scotland.

INSECT: *W. H. M.* *Sirex gigas*, a sawfly (see fig. 30). It bores into timber, and deposits its



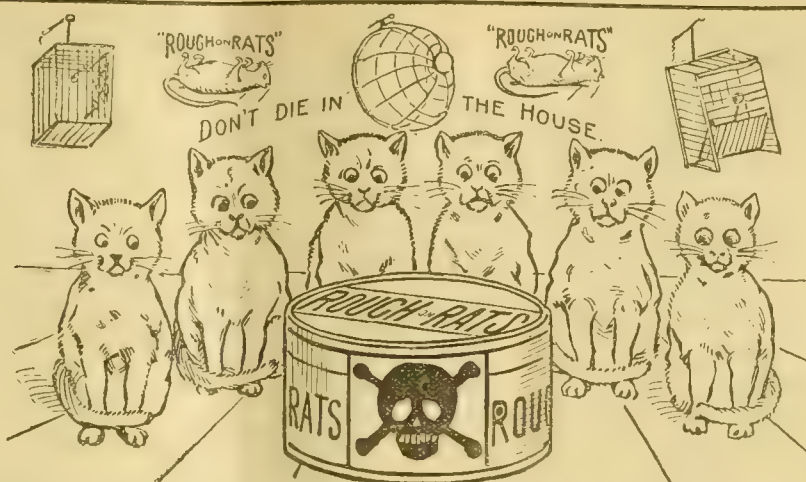
FIG. 30.—SIREX GIGAS

eggs therein. Much like a hornet in appearance, but has no power to sting.

NAMES OF PLANTS.—*Cloverseed.* *Alstroemeria aurantiaca*.—*Name of sender mislaid.* *Baptisia australis*.—*G. W.* 1, *Arum*, perhaps *A. arisarum*; 2, *Achillea Ptarmica* fl.; 3, *Stapelia*, which we cannot determine.—*F. A. G.* 1, *Rhus typhina*; 2, *Spiraea arisefolia*.—*W. B.* 1, *Valeriana officinalis*; 2, *Asphodelus luteus*; 3, *Chlorophytum Sternbergianum*, variegated; 4, *Betonica carnea*; 5, *Veronica*; 6, *Spiraea Ulmaria*, double fl.; 7, *Hieracium aurantiacum*; 8, *Silphium lacinia-tum*; 9, *Aster*, not recognised.—*J. W.* Apparently *Veratrum viride*.—*G. H. K.* 1, *Ophiopogon spicatum* variegatum; 2, *Pellionia Daveauana*; 3, *Acalypha tricolor*; 4, *Euonymus europæus*, Spindle tree; 5, *Rhus Cotinus*; 6, *Betonica carnea*; 7, *Scrophularia nodosa*.—*Orchid.* *Cattleya granulosa Schofieldiana*, a very fine form of it, with the ground colour more yellow than usual.—*R. G.* *Epidendrum* sp.; but from the material sent we are unable to say which one.

NATIVE GUANO: *A. C.* This is a misnomer, it being nothing more than the residuum of town sewage chemically treated. Mixed with the potting-soil in the proportion of a peck to one barrow-load of the latter, or used as a top-dressing to your potted *Chrysanthemums*, it could not fail to have a beneficial effect on them.

COMMUNICATIONS RECEIVED.—*F. J. Rymer*—*S. Hawson*.—Secretary Southport and Birkdale Horticultural Society.—*Jas. Carter & Co.*—*Godefroy Lebeuf*.—*M. T.*—*J. E. E.*—*J. S.*—*J. J. W.*—*E. A. R.*—*J. O'B.*—*H.*—*D. T. F.*—*J. D.*—*Senex*.—*E. S.* (next week).



OUR OCCUPATION'S GONE! "ROUGH ON RATS" DID IT.

SONG AND CHORUS, ROUGH ON RATS.

[MAY BE SUNG TO TUNE OF "LITTLE BROWN JUG"]

Squalling children, scolding wife,
Were not the pests of my poor life;
Where'er I lived, in house or flats,
My plague has been those horrid Rats.
They ate our meat, our bread, and shoes,
We could not have a quiet snooze.
One day my wife did chance to dose,
They pinned my baby by the nose.

CHORUS—

R-r-rats! Rats! Rough on Rats!
Hang your dogs and drown your cats;
We give a plan for every man
To clear his house with ROUGH ON RATS.

Rough on Rats clears out Rats, Mice, Cockroaches, Water Bugs, Beetles, Bed Bugs, Flies, Moths, Ants, Insects, Potato Bugs, Hen Lice, Sparrows, Rabbits, Squirrels, Wood Lice, &c. Sold by Chemists all over the civilized world. Send for Circular how to destroy all kinds of Bugs, &c. 7½d., 1s., and 4s. 6d. Boxes, at Retail Chemists only.

F. NEWBERRY & SONS, Wholesale Agents, 1, King Edward Street, Newgate Street, London, E.C.

"Rough on Corns" gives instant relief. 8d. at Chemists.

I got a cat, I set a trap,
And thought to have a quiet nap,
But scarce in bed we snug were laid,
When round the room the villains played.
My wife jumped out upon the floor,
To strike a light, but soon did roar,
As well she might, for you must know,
The steel-trap had her by the toe.

CHORUS—R-r-rats! Rats! Rats! Rough on Rats, etc.

But Rats were not the only pest,
To spoil our food, and spoil our rest,
Fresh trouble did each day arise—
Mice, Roaches, Bugs, Mosquitoes, Flies.
But now I've got the tip at last,
And soundly sleep and eat quite fast;
For we have banished all the crew,
And you shall learn the secret too.

CHORUS—R-r-rats! Rats! Rats! Rough on Rats, etc.

"JOHN RUSKIN" STRAWBERRY.

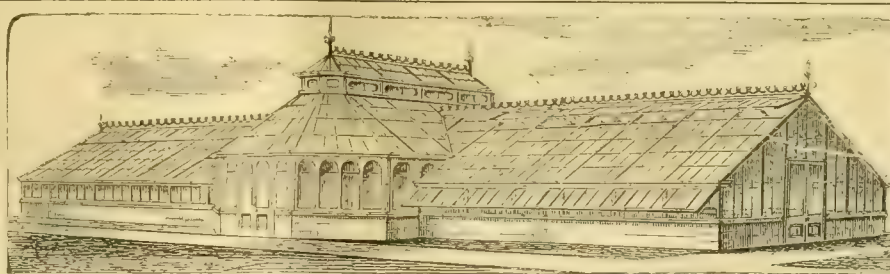
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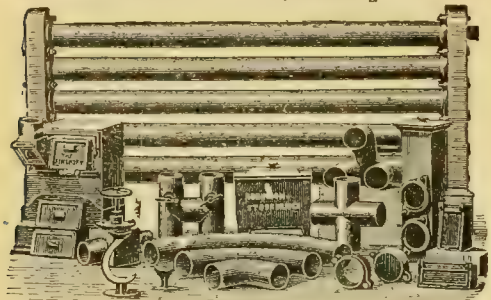
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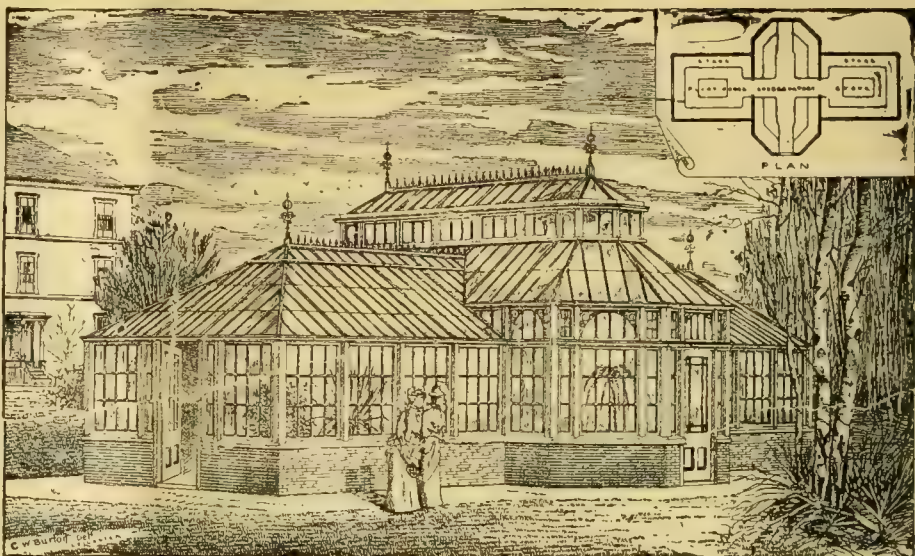
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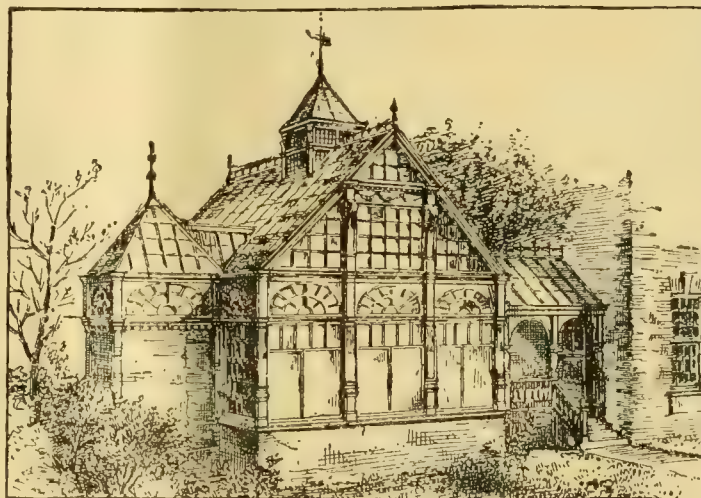
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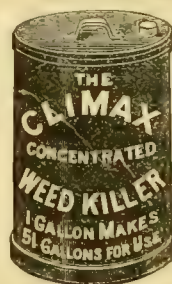
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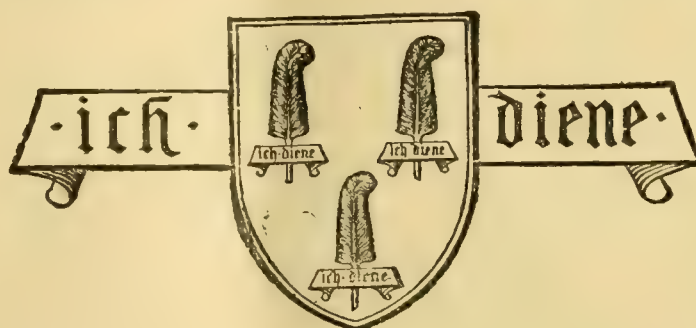
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The GARDENERS' CHRONICLE

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W. ICETON has a large Stock of the leading kinds of Decorative PALMS from 6 to 25 feet high, fit for Conservatory and House Decorations; Dracaenas, Bamboos, and Foliage Plants. Lowest Prices quoted on application. W. ICETON, Putney, S.W.

SUTTON'S FLOWERS for CHRISTMAS BLOOMING.

SUTTON'S EARLY ROMAN HYACINTHS. —The best of the season. Extra large bulbs, 3s. per dozen; 21s. per 100. Selected bulbs, 2s. per dozen; 14s. per 100. Good bulbs, 1s. 6d. per dozen; 10s. 6d. per 100.

SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

EURYLES AUSTRALASICA.

Strong flowering bulbs of this charming white flower can now be supplied, 6s. each. B. S. WILLIAMS AND SON, Victoria and Paradise Nurseries, Upper Holloway, N.

ANEMONES, best double French Chrysanthemum-flowered, including La Brillante, La France, Gloire de Nantes, Etoile de Bretagne, &c.; quality guaranteed. 15s. per 100. J. H. HAMON, 78, Ladypool Road, Birmingham.

W. D. BUNDAY, of Covent Garden Market, and 37, Exeter Street, W.C., is open to SELL on COMMISSION, TOMATOS, GRAPES, &c. Good references.

JOHN COLLINGRIDGE is open to receive Consignments of Choice CUT FLOWERS for SALE, on COMMISSION. Highest references. New Flower Market, and 5, Russell Court, Strand, W.C.

MESSRS. SQUELCH AND WOOD, FRUIT SALESMEN, North Row, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS OF GRAPES, TOMATOS, CUCUMBERS, and all kinds of HOT-HOUSE PRODUCE. Our business connections being amongst the best houses in London, we are in a position to secure the highest prices for all choice goods. Account Sales forwarded daily and cheques weekly, or daily if required. Empties and labels supplied. Reference, London and County Bank, Covent Garden Branch.

LOVEL'S YORKSHIRE STRAWBERRIES. Well-rooted runners of Thury, Noble, Paxton, President Queen, and others. Sample Packet, 6d. Price LIST on application. W. LOVEL AND SON, Strawberry Growers, Driffeld.

ORCHIDS.—RARE BURMESE ORCHIDS, including Cypripedium Spicerianum, Dendrobium nobile, nobilium and intermedium, Vanda Parishii, from Captain STEPHENS, Rangoon.

CALAMUS ROXBURGHII, a few dozen pots, three plants in each, ready to pot on, 9s. per dozen pots; DRACENA NUTANS, green-leaved Australian var., fine for decorating, 5s. per dozen; in 60's; FERNS, about ten best decorative vars., in 60's, 3s. per dozen; ARUM LILIES, strong roots, 6s. per doz.—R. MARIES, Florist, Lytham, Lancashire.

WANTED, four strong, well made ORANGE TUBS, with iron handles. State price to REEVE-SMITH, Seaford, Sussex.

WANTED, GERANIUM CUTTINGS, leading Bedding Sorts; also TEA ROSE BUDS, to name, and PELARGONIUM CUTTINGS. W. VAUSE, Nurseryman, Leamington Spa.

WANTED, GERANIUM CUTTINGS.—Leading kinds. Price, per 1000, to THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

WANTED, GERANIUM CUTTINGS.—Henry Jacoby, Vesuvius, Rev. F. Atkinson, John Gibbons, and Bronze; price, per 1000, to GEO. HOLMES, Haxby Road, York.

WANTED, GERANIUM CUTTINGS, H. Jacoby, Vesuvius, W. B. Gem, Niphotos. Price, per 100, to W. BLOOMFIELD, Rothesay Road, Luton.

WANTED in quantity, at once, true to name, strong, well-rooted RUNNERS of STRAWBERRIES:—Paxton, Noble, Vicomtesse, President, Captain, Keen's Seedling, La Grosse Sucrée, Dr. Hogg, British Queen, James Veitch, John Ruskin, and A. Nicolson.—Lowest cash price to O. A. S., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

THE BEST ONIONS FOR PRESENT SOWING.

CARTERS' GIANT LEMON ROCCA—A Mammoth Globe-shaped ONION, with a delicate golden skin, mild and agreeable in flavour. Invaluable for exhibition. Price, with cultural directions, 1s. 6d. per ounce post-free.

CARTERS' GIANT WHITE TRIPOLI, price 6d. per packet, 1s. per ounce post-free. CARTERS' GIANT MADEIRA, price 1s. per ounce post-free. All other popular sorts at advertised prices.

CARTERS' SEEDSMEN BY ROYAL WARRANTS TO H.M. THE QUEEN and H.R.H. THE PRINCE OF WALES. 237 and 238, HIGH HOLBORN, LONDON.

VERY CHOICE LILUM HARRISII, 7 to 9 inches round, 6s. per doz.; 9 to 11 inches round, 10s. per doz. Chionodoxa Lucilla, 3s. per 100; extra fine, 4s. 6d. per 100. Elwes' Giant Snowdrop, 4s. per 100; 35s. per 1000. Full List on application. ROBERT SYDENHAM, Roseleigh, Birmingham.

CHARLES VUYLSTEKE, NURSEYMAN, Loochristy, Ghent, Belgium, offers VERY BEST PLANTS, at LOW PRICES, of Azalea indica, Azalea mollis, and Azalea mollis flore pleno, Hardy Ghent Azaleas, Camellias, Rhododendrons, Palms, best sorts for Table and Room Decoration; Dracaenas Australis, Bruanti, rubra, &c., Ficus elastica, Orchids, &c., &c. New CATALOGUE now ready, and may be had free from—Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Bulbs for Early Forcing. DICKSON AND ROBINSON have just received, and offer, of unexcelled quality:—HYACINTHS, Single White Roman, 12s. 6d. and 15s. per 100. HYACINTHS, Single White Italian, 10s. 6d. per 100. HYACINTHS, Single Blue Italian, 8s. 6d. per 100. HYACINTHS, Double Rose Italian, 10s. 6d. per 100. NARCISSUS, Large-flowered Paper-white, 7s. 6d. per 100. NARCISSUS, Double Roman, 6s. per 100. Carriage Paid. Descriptive CATALOGUE on application. Seed Warehouse, 12, Old Millgate, Manchester.

STRAWBERRIES.—Descriptive priced LIST of new and select Strawberries for the coming season for cultivation in the open ground, and in pots for forcing, now ready, including "LAXTON'S SENSATION," new, very large, second early variety, wonderfully prolific, and of good flavour. "LAXTON'S SCARLET QUEEN," the best-flavoured and brightest-coloured first early; White Knight, Competitor, Cardinal, Latest of All, and Commander, all distinct and reliable new varieties; Noble, A. Nicolson, La Grosse Sucrée, J. Ruskin, and all the best Standard English and foreign sorts, true to name. THOMAS LAXTON, Seed Grower, Bedford.

Many Acres of Lilies of the Valley! T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year-old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application. T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

Boulton & Paul's Outdoor Requisites. BOULTON AND PAUL, MANUFACTURERS, NORWICH. Every Requisite for the Kennel and Poultry Yard, Aviaries, Pigeon Cotes, Pheasants. Requisites for the Garden, Park, Pleasure Grounds, Wire Netting for Game and Sheep. Iron and Wire Fencing, Gates, &c. Send for Illustrated CATALOGUES, post-free, on application.

J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent: Mr. GEORGE, 10 Victoria Road, Putney. WM. THOMSON AND SONS, Clovenfords, Galashiels, &c.

SALES BY AUCTION.

Friday Next, August 19.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, August 19, at half-past 12 o'clock, by order of Mr. F. SANDER, St. Albans, a grand importation of—

CATTLEYA SPECIES, AUREA TYPE.

These are the true Cattleya aurea type, and every plant offered is warranted to belong to that class. There is no doubt whatever that Cattleya imschottiana, Hardyana, and Massiana, and other quite new varieties are among them; no collector was ever near the locality whence they came, and we have never before had an importation to offer in which we have had such absolute confidence as in this importation. We know that the species is simply extra.

The importation is in grand order, and dried flowers will be on view.

Also a very fine lot of a most striking PHAIUS, with large spikes, carrying many extra fine blooms.

A grand importation of the rare and beautiful CYPRIPEDIUM GODSEFROE LEUCOCYLUM, the white-lipped form of this fine variety.

We are much pleased to be able at last to offer a fine importation of the above superb CYPRIPEDIUM—without doubt the finest of the section.

There will also be included the NEW EPIDENDRUM IMSCHOTTIANUM, the NEW EPIDENDRUM FOURNIERIANUM, a NEW MAXILLARIA, of singular habit; a few plants of the true EPIDENDRUM RANDI, and many other fine and valuable ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT 24 sticks, comprising a quantity of PHALLENOPSIS AMABILIS SCHILLERIANA and STUARTIANA to be sold as received, also an importation of ASPLENIUMS, POLYPODIUMS, and about 60 CYATHEAS and DICKSONIAS received direct from New Zealand.

On view morning of Sale, and Catalogues had.

Peasmarsh, and Rye, Sussex.

By order of the Executors of the late Mr. J. Golding, TO MARKET GARDENERS, FRUIT GROWERS, and others seeking a thoroughly genuine Business, established for many years.

MESSRS. PROTHEROE AND MORRIS, in conjunction with Mr. J. J. FRUIN, will SELL by AUCTION, at the "George Hotel," Rye, Sussex, on WEDNESDAY, August 24, at 3 o'clock P.M., in Two Lots, the exceedingly choice and productive FREEHOLD MARKET GARDEN and FRUIT GROUNDS, known as Little Lea, Peasmarsh, Sussex, comprising an area of 14 a. 1 r. 7 p., abundantly stocked with the best marketable kinds of top and bottom Orchard Fruit Trees, together with the convenient detached Residence, Stabling, and Outbuildings.

Also the LEASEHOLD MESSAGE on the North side of the Channel running from the Fish Market to the Strand in the Town of Rye.

May be viewed. Particulars and Plans had at the place of Sale, of Messrs. DAVENPORT JONES and GLENISTER, Solicitors, Bank Buildings, Hastings; of Mr. J. J. FRUIN, Estate Agent, 31, White Rock Place, Hastings; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Monday, August 22.

DITCH BULBS.

SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, August 22, THURSDAY, August 25, and MONDAY, August 29, large consignments of named HYACINTHS, TULIPS, CRUCUS, NARCISSUS, and other DUTCH BULBS, together with white ROMAN HYACINTHS and Paper-White NARCISSUS received direct for Unreserved Sale. These early auctions have been specially arranged in lots to suit the trade and other large buyers. The Auctioneers will be pleased to enter the names of intending purchasers on their permanent lists who may desire a regular supply of CATALOGUES for these Sales.

Auction Rooms and Offices, 67 and 68, Cheapside, London, E.C.

Nursery Stock Sales.

SEASON, 1892.

MESSRS. PROTHEROE AND MORRIS are now FIXING SALES OF NURSERY STOCK for the coming season in all parts of the country.

Several important Auctions have already been booked, and with others now being arranged will shortly be announced in this paper.

Messrs. P. & M. will be glad to receive an early intimation of any further Sales, so that they may be included in this preliminary Advertisement.

Auction and Estate Offices, 67 and 68, Cheapside, London, E.C.

WANTED, to Purchase, 2 to 4 acres of LAND, near Station on Main Line, in view of Railway; not more than 14 miles from St. Paul's.

CHARLES WORTH, SHUTTLEWORTH, and CO., Heaton, Bradford; and 213, Park Road, Clapham, S.W.

FOR DISPOSAL, a SMALL NURSERY—about 3 acres. For particulars, apply to—E. B., The Limes, Fordingham, Cambs.

FLORIST and JOBBING BUSINESS for SALE, in one of the best suburbs of London. Over 500 feet-run of Houses, all well heated. Very long Lease, £1510s. ground-rent. A good business attached. Price for the whole, £1000.—J. F., 41, Wellington Street, Strand, W.C.

SEED BUSINESS (Established) FOR DISPOSAL, in the North of England, doing a capital Counter Trade. Situated in a large Agricultural District, and with push and energy, could be greatly enhanced. This is an opportunity that seldom occurs. Every enquiry courted.

For further particulars, apply, X., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

LONDON, S.E.—For IMMEDIATE DISPOSAL, a well-situated FLORIST'S and NURSERYMAN'S BUSINESS, with jobbing trade attached.—Full particulars of X., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SEED BUSINESS, for Disposal.—Well situated, and near station in a city in the north of England. Terms moderate.—Apply, B. J., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Nurserymen.

FOR IMMEDIATE DISPOSAL, a good and well-paying NURSERY BUSINESS, in North London: ten long Greenhouses, 1000 feet of Pipe, with Boilers in good condition, upwards of 10,000 Greenhouse Ferns, and other plants, Trade Utensils, and a useful Horse and Van. Rent of Ground, £10 per annum.

K. L. F. and SON, Auctioneers, Upper Edmonton.

TO BE SOLD, the Lease, Stock, and Goodwill of a small FLORIST and JOBBING BUSINESS in a good position. Good Dwelling-house and Stable; Greenhouses, Pits, &c., heated with hot water. To be had a bargain if sold at once. Satisfactory reasons for disposal.

Apply, G. L. WEBBS, Newsagent, Grove Road, Holloway, N.

KENT—TO LET, about 2 Acres of good NURSERY GROUND, with three Glass-houses 100 feet long heated; large Potting-shed, &c.; 1 mile from railway station.—Full particulars, W. B., Orange Tree, Wilmington.

To Market Gardeners.

TO BE LET, about 20 acres of LAND, adjoining Barnes Common.—Particulars of Messrs. CHESTERTON AND SONS, Surveyors, 22, Lower Phillimore Place, Kensington, W.

TO FLORISTS, MARKET GARDENERS, &c.—LAND well adapted for the above TO LET, on long Lease in 2 or more acre Plots. Also 20 acres FOR SALE, near Hampton Station.

M. F. EMBLETON, Suffolk House Hampton Hill.

To Fruit Growers, Market Gardeners, and Farmers.

TO BE LET, at Michaelmas next, with the Shooting, a superior FARM, near large Suburban Towns, forty-five minutes from London; 5½ acres, principally sound arable land; a considerable portion admirably adapted for Fruit Growing and Market Garden purposes; remainder, excellent Cereal, Root, and Sheep Land. Comfortable Residence, commodious Buildings (water laid on), and very moderate rent.

Particulars of ROBERT W. FULLER, MOON, and FULLER, Agents, Croydon, Reigate, and Epsom.

To Lovers of Gardens.

TO BE LET, a charming old MANOR HOUSE, recently restored, added to, and decorated, with very good walled Gardens, fully stocked with a fine Collection of Herbaceous Flowering Plants and Shrubs, and in perfect order; large Lawn Tennis Ground, Conservatory, Greenhouse, and Range of Heated Pits. The House contains ten Bed-rooms, five Sitting-rooms, and usual offices; Stabling for four or six Horses, Dog Kennels, Poultry Sheds, Mushroom House, and Paddock. Two miles from Lewes, Sussex; close to Church and Post; one hour and a quarter from London. Unfurnished; rent, £120. For further particulars, apply to J. HORSLEY PALMER, The Lawn, Bournemouth.

VINERIES and HOTHOUSES TO LET.

The VINERIES, PEACH HOUSES, CONSERVATORIES, and other glass and Hot-houses, at Castledykes, near Dumfries, with the Bothy and other erections connected therewith; also the GARDENER'S HOUSE, KITCHEN GARDEN, &c., all as now occupied by Mr. James W. Bayne, are TO LET on LEASE, with entry on September 1 next. The premises may be seen, and further information obtained, on application to JAMES H. MCGOWAN, Solicitor, Dumfries.—March 22, 1892.

FOR SALE—About 160 feet run of First-class VINERY, in full Working Order, with matured Vines; and SITE FOR SHOP, in a good business part of the Town of Reading; suitable for Working Gardener. Apply to—W. G. MILLAR, 10, High Street, Reading.

To Gentlemen, Nurserymen, and Gardeners.
FOR SALE, a bargain, three recently-erected GREENHOUSES, in good condition, each 80 feet long by 1½ feet wide, with boiler and hot-water pipes of the best fitting, easily removed and refixed, being glazed without putty. Apply, Mr. F. GOULD, St. James' Road, Kingston-on-Thames.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

HAVE AN

IMMENSE STOCK of ORCHIDS,

All in the finest health and condition, And they are constantly receiving importations from various parts of the world.

The Company earnestly request the inspection of their Stock by intending Purchasers.

New, Descriptive, and Priced CATALOGUES post-free on application to the Company.

THE VINEYARD AND NURSERIES,
GARSTON, NEAR LIVERPOOL.

EXHIBITIONS.

KINGSWOOD, ST. GEORGE, and WEST GLOUCESTER FLOWER SHOW, KINGSWOOD, August 24, 1892. £170 in prizes. Schedules can be obtained from the Hon. Secretaries,

F. H. JULLION, St. George.
J. STUBBS, Kingswood.

NEWCASTLE-UPON-TYNE AUTUMN FLOWER SHOW, AUGUST, 24, 25, and 26, 1892.

For Schedules, apply to JAS. J. GILLESPIE, Secretary, Cross House Chambers, Westgate Road, Newcastle-on-Tyne.

SANDY (Bedfordshire) FLORAL and HORTICULTURAL SOCIETY.—Twenty-fourth Great Autumn Show of Plants, Flowers, Fruit, Vegetables, Dogs, Pigeons, Rabbits, Cage Birds, &c. Prizes £320. Dairying Competitions, &c. FRIDAY, August 26. W. GREEN, Sec., Sandy.

BRIGHTON and SUSSEX (NEW) HORTICULTURAL and MUTUAL IMPROVEMENT SOCIETY. Amalgamated with the Chrysanthemum Society.

FIRST SUMMER SHOW will be held in THE DOME and CORN EXCHANGE, ROYAL PAVILION, TUESDAY and WEDNESDAY, AUGUST 30 and 31.

Schedules may be obtained from the Hon. Sec.—MARK LONGHURST, 18, Church Road, Hove, Sussex. N.B.—Entries close August 22, 1892.

CRYSTAL PALACE.

THE NATIONAL DAHLIA SOCIETY'S GRAND SHOW OF DAHLIAS—FRIDAY and SATURDAY, September 2 & 3. GREAT ANNUAL EXHIBITION OF CHRYSANTHEMUMS.—FRIDAY and SATURDAY, November 4 and 5.

For Schedules and Entry Forms apply to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

THE LEEDS PAXTON SOCIETY'S Fourth

Annual CHRYSANTHEMUM SHOW will be held on TUESDAY and WEDNESDAY, November 8 and 9. For Schedules, &c., apply to the Hon. Sec., W. APPELEY, The Grove, Headingley, Leeds.

DAFFODILS.—DAFFODILS.

"Ye Original Little Book" of same for 1892.

Now ready, and post-free, from WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

The Best Present for a gardener.

VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published.

Third Edition, just out. Price 5s., post-free, 5s. 6d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

150,000.—Special Offer of Kentias.

W. ICETON has a large quantity of the above to offer, very reasonable, at from £7 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well established, at £30 per 1000.

W. ICETON, Putney, S.W.

SCARLET VAN THOL TULIPS,

2s. 6d. per 100; 23s. per 1000.

EARLY WHITE ROMAN HYACINTHS, average bulbs, 1s. 4d. per dozen; 10s. per 100. The pick of the market, nearly 6 inches round, 2s. per dozen; 15s. per 100.

NARCISSUS ORNATUS, 9d. per dozen; 5s. 6d. per 100.

GOLDEN SPUR, the finest yellow for forcing, 3s. 6d. per dozen; 25s. per 100; FRESIA REFRACTA ALBA, 1s. per dozen; 5s. 6d. per 100; extra fine, 1s. 3d. per dozen; 9s. per 100.

ROBERT SYDENHAM, Roseleigh, Birmingham.

"JOHN RUSKIN" STRAWBERRY.

The Earliest Strawberry of the Century.

Trials North and South prove it extraordinary for earliness, productiveness, flavour, size, and to be classed with Sir Joseph Paxton, Garibaldi, President, &c. Order now. Strong runners, per 100, 12s. 6d.; strong plants in pots, per 100, 25s.

TRUE FROM THE INTRODUCERS—

LITTLE and BALLANTYNE,
ROYAL SEED and NURSERY ESTABLISHMENT,
CARLISLE.

Come and See.

It is absolutely necessary that all lovers of first-class gardening should pay our Nurseries a lengthy visit. Our many displays are splendid, and of the highest possible interest.

BEGONIAS (The Editor of *Gardeners' Chronicle* says he opines any further improvement in this flower).

The London Daily Press also says of our last exhibit in London, "Cannell's DOUBLE BEGONIAS rival anything we have seen."

Journal of Horticulture says:—"Cannell's BEGONIAS astonished the visitors."

Medal awarded. CACTUS DAHLIAS, nothing touches them in the world. Our Stock of everything required for high-class Gardening and Prize Winners, particularly seeds, is of the first importance to those who intend to succeed.

CATALOGUES FREE.

H. CANNELL & SONS,
SWANLEY, KENT.

STRAWBERRIES.



JAMES VEITCH & SONS

Beg to intimate that they can supply all the leading kinds of the above, either in pots or prepared runners.

Their List for this season, just published, may be had, post-free, on application. It contains the following striking Novelties:—

EMPRESS OF INDIA
GUNTUN PARK ...
LORD SUFFIELD ...

Certificated at the Royal Horticultural Society's Meetings, and at the Edinburgh, Wolverhampton, and International Horticultural Exhibitions.

ROYAL EXOTIC NURSERY, 544, KING'S ROAD, CHELSEA, S.W.

CARTERS' BULBS

FOR EARLY FORCING.

WHITE ROMAN HYACINTHS.

Very large bulbs, price .. 21s. per 100; 3s. per dozen.
Good flowering bulbs, price 15s. per 100; 2s. per dozen.

PAPER WHITE NARCISSUS.

The finest bulbs, price .. 6s. per 100; 1s. per dozen.

DOUBLE ROMAN NARCISSUS.

The finest bulbs, price .. 6s. per 100; 1s. per dozen.

ALL CARRIAGE FREE. SPECIAL QUOTATIONS FOR QUANTITIES.

Seedsman by Royal Warrants to H.M. THE QUEEN and H.R.H. THE PRINCE OF WALES,
237 and 238, HIGH HOLBORN, LONDON, W.C.

EARLY WHITE ROMAN HYACINTHS,

Double Roman and Paper-white Narcissus.



JAMES VEITCH & SONS

Beg to announce they have received their usual Consignments of

THE ABOVE VALUABLE BULBS FOR EARLY FORCING,

And will be pleased to receive Orders for Immediate Delivery.

BULB CATALOGUE FOR 1892

Has now been Posted to all their Customers; any one not having received the same, a Duplicate Copy will immediately be forwarded, Post-free, on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem,
Holland. Wholesale CATALOGUE now ready, and
may be had free on application to—
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens,
Crutched Friars, E.C.
N.B.—Many new, rare, and interesting plants and bulbs will
be found in this Catalogue.

Fruit Trees a Specialty.
STRAWBERRIES, one of the largest and
best collections in the Trade, including all the best of the
New and Old Varieties. Full Descriptive Catalogue on
application.
FRUIT TREES of all kinds, a very large stock.
JOHN WATKINS, Pomona Farm Nurseries, Withington,
Hereford.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to SANDER'S, St. Albans. The finest
stock of Orchids in the World.—30 minutes from St. Pancras.

PRIMULA, DOUBLE WHITE.—An extra-
ordinary good lot in large 60-pots. Prices per 100 or
1000 on application.

W. E. MARSHALL, Abbey Wood, Kent.

ORCHIDS A SPECIALTY.—
Please write for New Illustrated Price LIST of well-
established, healthy, and easily-grown plants.

W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate,
London, N. Nursery, Orchid Road.

FOR SALE.—4000 GENISTAS, good Plants
for Spring-blooming, at £1 2s. and £1 5s. per 100, in 48-
size pots. Cash with Order. Money Orders payable at Leyton
High Street.

T. BALDWIN AND SON, Edith Nursery, Burchall Road,
Leyton.

PRIMULA SINENSIS FIMBRIATA ALBA
and RUBRA. CINERARIAS, extra choice. Both best
Covent Garden strains, in single pots, 1s. 6d. per dozen,
10s. 6d. per 100.

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

FERNS! FERNS!!—Trade.—Greenhouse and
Stove, 25 saleable sorts, 12s. per 100; out of pots, 10s.
Strong Seeding Ferns, stores, in variety, 6s. per 100, 50s. per
1000. Large Adiantum cuneatum, Aralias, Cyperus, all in 48's,
6s. per dozen. Palms, Ficus, Hydrangeas, 1s. each. Large
Ferns, 10 best sorts, 5s. 6d. per dozen, in 48's. Adiantum
cuneatum and P. tremula, extra size, in 2½-inch pots, 16s. and
20s. per 100. Packed free, Cash with Order.

J. SMITH, London Fern Nurseries, Loughboro' Junction, S.W.

TRADE OFFER OF PALMS.

COCOS Weddeliana, in thumbs at 20s. per 100.
in 60's, at 55s. per 100.
KENTIA Fosteriana & Belmoreana, in thumbs, at 20s. per 100.
in 60's, at 60s. per 100.
in 48's, at 24s. per doz.
in 32's, at 48s. per doz.
SEAFORTHIA elegans, in 60's, at 32s. per 100.
in 48's, at £5 per 100.

W. Iketon has a fine Stock of Asparagus plumosus nanus,
in 48's and 60's; Pandanus Veitchii, Dracæna Lindenii, and
Ficus elastica.—W. ICKETON, Putney, S.W.

BULBS FOR AUTUMN FLOWERING, &c.

Descriptive LIST on application.
Beautiful and rare species of CROCUSES, as yet almost
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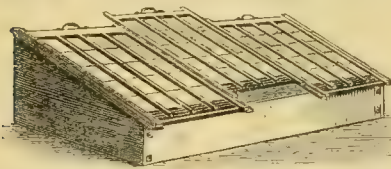
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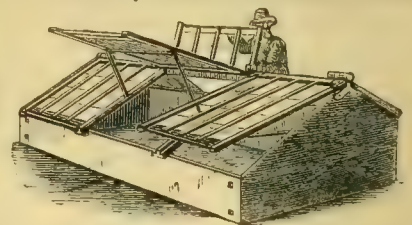
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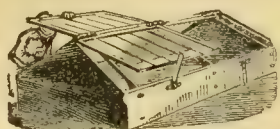
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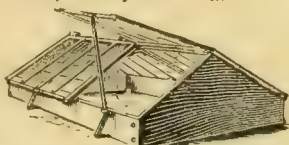
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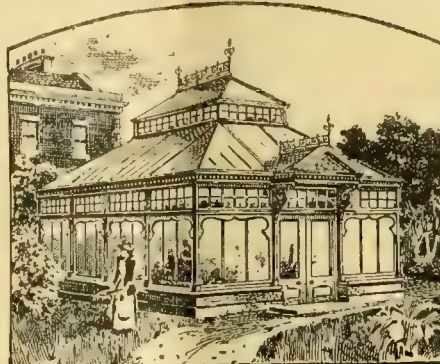
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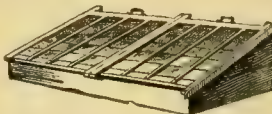
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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 13, 1892.

HIGHNAM COURT.

THE above mansion might well serve as a model of what a gentleman's country residence should be, so beautifully proportioned is it, while at the same time it is square, solid, and commodious. [It is, so far as regards the main building, the work of Inigo Jones, Ed.] But it is with the garden we have now to do, and here Mr. Parry's love of Conifers is everywhere apparent, for even through the walled garden there is a sombre but unique avenue of Irish Yews, each one a model of its kind, and apparently of the same age as those in front of the church. [They were really planted some few years later. Ed.] From here we pass into the most beautiful part of the garden, called the rockery or winter garden, as being sheltered on all sides from searching winds; it is doubtless a very snug and enjoyable spot in wintry weather. There had been a long drought previous to my visit, and the stream of water that meanders through it was almost dry, but it needed very little imagination to fill it to the brim, and then to look upwards from the rockery towards its source, to conjure up one of the loveliest bits of blended nature and art one could find anywhere.

Graceful Birches, Conifers, and Irish Yews contrast with each other, and dense masses of low-growing evergreens, relieved with clumps of Bambusa Metake and Arundinaria falcata, with here and there an Eucalyptus globulus, meet the eye; and along the margin of the stream choice perennials and bog-plants are planted.

Several fine specimens of Taxodium distichum stand on various well-chosen positions on the lawn, and at the time of our visit these were covered with the yellowish-green foliage, affording a charming background to the many spiky Conifers near. Here is the original specimen of Pinus Parryana, the golden-red bark of whose trunk and branches harmonises well with the gracefully pendent leaves.

To the right of one of the Taxodiums a small specimen Sequoia gigantea pendula is found, now developing its weeping character in a marked degree; and behind are some remarkable specimens of Abies pinsapo, 50 feet; and Picea Morinda, 30 feet. Just beyond are specimens of a fine Cedar of Lebanon and a Thuopsis borealis, a specimen of the best of the Syringas (so called), Philadelphus speciosissimus, being planted in the angle between them, and in full flower at the time of my visit. To the north-east, at the back of the mansion, are some grand timber trees, and Conifers, Elms, Limes, Beech, with Pinus Laricio 70 feet, and P. austriaca about the same dimensions; while a fine Weymouth (P. strobus) to the left, and the rare

Pinus Sabiniana to the right, tend to soften and finish this fine group; at the same time a *Sequoia gigantea*, 65 feet, and a Douglas Fir, 60 feet, need no aid to bring them into prominent notice.

Near here is a detached conservatory planted out, in which there is a fine *Lapageria rosea*, on the roof; and at the east end, on Elm blocks, eight fine pieces of *Platycerium aloicorne*, looking natural and happy in their position and surroundings. Outside on a wall, left of the north door, is a healthy specimen of the singular *Garrya elliptica*, clothed in glossy bright foliage, which, when the long drooping catkins appear in the early spring, will be very handsome. It was pleasant also to note a departure from the ubiquitous zonal *Pelargoniums* in the beds on the lawn, the steward and head gardener, Mr. Sowray, using the almost forgotten purple Clary (*Salvia Horminum*), *Campanula carpatica*, *Cupheas*, &c.

Passing the north front, good use has here been made of the various Golden Yews, and *Retinosporas*; while in the distance, a magnificent *Abies nobilis* rears its majestic form above its surroundings full, too full, of cones, which have been from time to time thinned, but which are now left, as there is some danger in gathering them.

Two houses of a range are now standing here, the third, a fine fernery, having been smashed in the gale last June, which blew down a large Elm on to it. This gale, by-the-by, felled, or rather uprooted some hundreds of Elms and other trees round about Gloucester.

The remaining houses are devoted to foliage plants and other decorative subjects, the blank wall at one end being beautifully clothed with a *Cissus discolor* in lovely colour. The kitchen garden has been newly made, and was carrying some fine crops of Onions, Peas, and other vegetables, while Laxton's Jubilee Strawberry was fruiting most abundantly. Here are about a dozen *Araucaria imbricata* seedlings from home-grown seed, and a few nursery rows of Conifers for filling up.

THE PINETUM.

Approaching this through the lodge-gate in the Hereford Road, a fine Tulip tree (*Liriodendron tulipifera*) catches the eye on the right, but soon all interest is absorbed in the grand avenue of *Araucarias*, thirty in number, many being 30 to 40 feet high, and branched to their base. Beyond this are the *Wellingtonias*, the largest 90 to 100 feet high, standing like gigantic sentinels among smaller Firs.

Passing through a small wicket-gate, we enter the Pinetum proper, the first thing arresting attention being the special favourite of the late lamented Mr. Parry, another *Pinus Parryana*, probably twin-brother to that on the lawn. The beauty of the specimens is enhanced by the circumstance that they are planted on each side of a valley, while the smaller and more choice examples have been planted on the ridges, the protection of the older subjects having been taken advantage of to shelter these.

Towards the keeper's lodge are fine examples of *Pinus insignis*, *Halepensis*, *macrocarpa*, and *Benthiana*, while an *Abies Williamsoni*, judiciously placed, softens somewhat the massive beauty of these. Here are two *Pinus Parryana*, about 20 feet, inarched by Mr. Sowray, on *Pinus Laricio*, and seemingly taking from the stock that long-noded habit peculiar to the Corsican Pine; one would think *P. Cembra* or *excelsa* would prove the better stock. Of these latter, close by are two majestic examples, fully 40 feet high, and well coned.

Passing the lodge, we come to a small plateau, on which many of the latest additions have been planted; notably *Abies Hookeriana*, 5 feet, lovely, glaucous, and not unlike *Cedrus atlantica*; *Fitzroya patagonica*, 7 feet; *Abies magnifica*, in robust health, showing an almost peacock-blue-like sheen on its lovely foliage. But our steps are arrested here by one of the most perfect trees in the Pinetum, which must be seen to be duly appreciated; it is an *Abies grandis*, fully 50 feet high, feathered to the ground, and forming a gloriously noble pyramid of leafage. While standing before such a forest monarch, one can sympathise with the *Araucarians* who worshipped the *Araucarias* and other noble Conifers, while they were also dependent upon them for their food and shelter.

Passing over a ruined rustic bridge the other path is reached, and here a glimpse of the surrounding country is caught over the tree-tops. Immediately two fine specimens are reached, a *Cryptomeria Lobbi*, well furnished, 40 feet, and an *Abies nobilis* of lovely proportion; on the left a Douglas Fir, the leader of which was blown out in the gale of 1891, producing apparently a greater development of lateral branches, for it now exhibits glorious festoons of foliage and cones, sweeping in grand curves to the sward. As if in strong contrast to this, next is a towering specimen of *Picea orientalis*, 70 feet, symmetrical and graceful, and near a lovely glaucous *Abies Alcoquiana* [probably *ajanensis*, Ed.], with almost blue young growth, a worthy memento of Sir Rutherford Alcock of Japanese fame. Near, we have a *Picea Morinda*, popularly "Horse-mane Spruce," from its closely pendulous laterals hanging on either side of its regular branches, and sweeping almost to the ground.

Then from British Columbia, the *Abies Albertiana*, with its closely packed Yew-like branches, and a fine healthy *Abies Lowiana*, quite uninjured by frost, a *Menzies Spruce*, the fine Colorado variety; and from the same district a grand specimen *Picea pungens glauca*, with its branches covered with its sharp needles, like frosted silver in colour; and two more highly-coloured Conifers, *Cupressus Lawsoni lutescens*, 10 feet, and *Juniperus sinensis aurea* (Young's variety) 8 feet, fine in colour, but the bottom spoiled by hares. As if in hard contrast, here is a *Cupressus erecta viridis*, 18 feet, presenting an unbroken pyramid of foliage; and a *Cupressus torulosa*, 24 feet.

For a few moments we here leave Pines, and revel in some grand specimen *Arbor-vitæ*, *Cypresses*, and *Taxads*, most notable among which were *Thuia occidentalis*, 50 feet; *Cutressus Lawsoni*, 30 feet; and a little further, looking as if it had weathered the gales on the slopes of Ben Lomond, a bizarre *Pinus montana*. Here we have a specimen of the Lombardy Poplar among Conifers, a Swedish Juniper, as compact as a Broom, at least 30 feet high, and not more than 5 feet through at its base; a *Taxus elegantissima*, its young growth carrying a beautiful golden tint; while variety is secured by a *Cryptomeria japonica*, 40 feet; and a *Sequoia sempervirens*, at least 10 feet higher; with columnar examples of Irish and Chinese Junipers towering above all, with the gracefully drooping *Juniperus recurvata* in most judicious contrast.

In a sheltered nook is a pretty specimen *Cupressus Lawsoni alba spica*, 5 feet, well in character. Next we have a grand group of *Araucarias*, *A. imbricata foemina*, with elegant branches, the upper ones coning, and the male form with sturdier growth, bearing its pollen

cones in plenty. Near is a Californian monarch of the forest, *Abies Lowiana*, 75 to 80 feet high, yet perfect to its base, a truly grand specimen; on each side other North American denizens, *Thuia gigantea* var. *compacta*, 40 feet; and *Thuopsis borealis*, the Nootka Sound Juniper, 30 feet. Here, from a rustic seat, may be enjoyed a view over the wooded park, towards Gloucester, the massive Oak and Elm tops of which the park mainly consists, being deprived of their monotony by the towering spires of the giant *Wellingtonias* on the horizontal line.

In conclusion, I must now note a few extra choice "bits" lately added, these being what may be called "florist's varieties," viz., old favourites variously coloured or presenting some peculiarity of growth or habit, and selections from some extensive seed bed, though occasionally aboriginal varieties.

Cedrus Deodara alba spica of continental origin, *Thuopsis borealis aurea* var. from Surrey, *Retinispora plumosa aurea*, among the first are well represented, while among the last may be named the singular *Retinispora filifera* and *R. filicoides*, and a pretty specimen of *Pinus flexilis*; while towering above all is a grand columnar specimen of *Libocedrus decurrens*.

Then we have *Sequoia gigantea aurea variegata*, for which a most eligible nook has been found. Nevertheless, it is not looking happy, and I fear will not while "yellow." I now turn aside, compelled to notice a perfect specimen of *Pinus Bolanderi*, 12 feet; and, lastly, a perfect gem in *Pinus parviflora*, and a *Cupressus thuoides nana*, which at my last visit was a wee thing, but is now fully 15 feet high, and perfect of its kind; in a line with it *Thuopsis dolabrata*, promising to make a fine specimen; and by it one of the handsomest of the Red Cedar group—*Juniperus schottii*. *Senec.*

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM OWENIANUM, Rolfe, n. sp.*

This distinct and pretty *Odontoglossum* was introduced by Messrs. F. Sander & Co., of St. Albans, with whom it flowered a short time ago. Whether it is a good species or only a natural hybrid, does not at present seem quite certain. The shape of the lip in some respects recalls *O. Pescatorei*, yet it is very distinct from any other form which I have seen, and I do not quite see what particular combination would produce it. The white lip, yellowish-white petals, with or without a chocolate blotch, and the sepals with the whole of the disc of the latter colour, give it a very distinctive appearance. It is dedicated to G. Dyson Owen, Esq., of Selwood, Rotherham, Yorkshire. I hope to see it again on a future occasion. *R. A. Rolfe.*

CIRRHOPE TALUM THOUARSII, Lindl., AND VAR. CONCOLOR.

Some time ago attention was called to the flowering of this rare old Mauritian species, the type of the genus at Kew (see *Gardeners' Chronicle*, 1891, part ii., p. 69; also *Botanical Magazine*, t. 7214).

* *Odontoglossum Owenianum*, n. sp.—Raceme six-flowered. Sepals lanceolate, acuminate, undulate, 17 lines long by 4 lines broad, pale whitish-yellow, with the whole of the disc chocolate. Petals rather broader, pale yellowish-white, sometimes with one chocolate blotch in the centre. Lip ungulate, limb spreading, pandurate-oblong, shortly acuminate, with deflexed apex, irregularly crisped-denticulate, wholly white, 1 inch long by 8 lines broad at base; crest consisting of a pair of short central plate-like teeth, and a pair of smaller diverging teeth on either side. Column 8 lines long, white behind, and with a yellow stain in front below the light-brown stigma; wings short, acute, irregularly and shortly toothed, marbled and suffused with light brown. *R. A. R.*

Singularly enough, the plant which bloomed last year had flowers of a uniform light-yellow tint, yet they presented no other peculiarity. This year a second plant sent by Mr. Bewsher has flowered, quite identical in structure, but having the flowers densely speckled with brownish-red, as in several other allied species. This is really the typical form, which has not flowered in cultivation before (the Philippine plant which bears the name in gardens being different), and the pale yellow form may therefore be distinguished as variety *concolor*. *R. A. Rolfe*.

ZYGOPETALUM GRAMINIFOLIUM, *Rolfe, n. sp.**

This elegant little *Zygopetalum* is a native of South Brazil, and was introduced some time ago by Messrs. F. Sander & Co., of St. Albans, on stems of *Lomaria Boryana*. At first I thought it must be a narrow-leaved variety of the old *Z. maxillare*, Lodd., but it has now flowered on several different occasions, and proves quite constant in character, so that its claim to specific rank may readily be conceded. There are three closely-allied species, whose peculiarity is to grow upon the stems of Tree Ferns, namely, the two just mentioned and *Z. Gautieri*, Lem. All are likewise characterised by the possession of an unusually large horseshoe-shaped crest. *Z. graminifolium* may be readily distinguished from the others by its much more slender creeping rhizome, smaller pseudobulbs, and much narrower grass-like leaves. The racemes are erect, and five to seven-flowered; the sepals and petals light green, heavily blotched with dark brown, and the lip of a uniform bright purple-blue. It is a graceful and very pretty little plant. *R. A. Rolfe*.

AGAVE FRANZOSINI.

This prince of the Agaves has flowered again this summer, in the celebrated garden of Mr. Thomas Hanbury, at La Mortola, and we have now obtained material for a complete description of the species. It is a most striking object when it reaches its full development, with a general habit like that of the familiar *Agave americana*, with its intensely glaucous leaves, having a spread of 16 or 18 feet, and its great candelabrum-like panicle, rising to a height of 40 feet. The previous accounts of it will be found in a paper by Mr. Philip Sewell in the *Gardeners' Chronicle* for 1889, vol. ii., p. 638, and in my own report on a visit to the Riviera in the number for January, 1892, of the *Kew Bulletin*. It belongs to the section *Submarginata*, which differs from the *Americana* by the terminal spine being decurrent as a border to the upper part of the leaf. Mr. Hanbury tells me it was introduced to the La Mortola garden in 1878, and was probably named in honour of Francesco Franzosini, proprietor of the Villa Franzosini, and also of a fine garden on the banks of the Lago Maggiore, which was rented for some years by the late Sir George Maclean. The following is a full description of the plant: *Acaulescent*, leaves thirty to forty in a rosette, oblong-spatulate, intensely glaucous, reaching a length of 8 to 9 feet, and a breadth of a foot at the middle, very rigid in texture, with a very pungent brown-black end-spine, which is decurrent for some distance down the margins, and distant, brown-black, deltoid, cuspidate, hooked or straight teeth, $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Peduncle with panicle reaching a length of 40 feet. Flowers in dense clusters; ultimate pedicels about $\frac{1}{2}$ inch long; bracts small, ovate-lanceolate. Ovary bright green, oblong, obscurely trigonous, 2 inches long, $\frac{1}{2}$ to $\frac{5}{8}$ inch diameter. Perianth-tube 1 inch long, green in the lower half, yellow in the upper; lobes yellow, linear, complicate, as long as the tube. Stamens inserted at the middle of the perianth-tube; filaments yellow, 3 inches long; anthers linear, above

1 inch long. Style finally overtopping the stamens, $4\frac{1}{2}$ inches long. I am indebted to Mr. Hanbury's head gardener, Mr. Cronmeyer, for kindly sending the flowers from which the accompanying drawing (fig. 31, p. 181) was made. *J. G. Baker*.

ORAL INSTRUCTION IN HORTICULTURE, AND THE OBJECT TEACHING OF GARDENING.

As one of those engaged in the new departure of teaching horticulture by tongue and through object lessons, in addition to pen and practice, permit me to thank the *Gardeners' Chronicle* for its generous appreciation of our work in a recent issue (see p. 100), as well as for its hearty sympathy and generous support during the earlier stages of the movement. With firm faith in the popularity of horticulture among the masses, and in the ability of practical cultivators to make it yet more attractive, useful, and intelligible to all classes—a faith so far justified by results, the *Gardeners' Chronicle* stood manfully by the new forward movement. The *Gardeners' Chronicle* fostered the new enterprise from the first, and it is largely through its counsel and guidance that, in so short a period, it has reached its present promising condition.

In this case there is not the slightest occasion for jealousy between science and practice, far less between the platform and the press. In the present day the science that is not of practical use is held of little account, while practical men that essay to reveal the foundations of their practice are bound to talk or write science. And as to the platform just erected, is it not filled with the older scholars of the press and practice combined? and all engaged in the oral and object teaching of gardening will only be too pleased to listen to the wise monitions of the press, and to learn as many new lessons as possible from scientific authorities as to the life, the wants, and the ways of plants, and how to make all these more readily understood by the people, and thus bring the knowledge, the pleasures, and the profits of horticulture more directly and immediately to bear on the enrichment and elevation of their lives.

The first great business of the oral and object teacher is the creation of the desire for such knowledge and possessions. As in higher matters, so in horticultural aspirations. The whole tendency of the age trends in that direction. Nothing can hinder its realisation to the full but crass folly or sheer ignorance. The horticultural press has done much to create and strengthen faith in the value of horticulture as one of the most powerful and readily-applicable means of making life among the masses more worth living.

Oral and object teaching must needs quicken the pace in the same direction. It has brought a new sensation; created a new interest in the rural districts. The writer was often astonished to see, in bitterly wintry weather, men and women turn out and listen earnestly, for an hour or more, to lectures on the mysteries of growth, modes of production, means of improvement, and probabilities of profit. The object lessons show them not only what can be, but what has been done, and thus scores of them decide on the spot that they can and will, with a little further help, do likewise.

I venture to add that examinations can by no means be considered as a measure of the solid results of such lectures. Neither would it be wise to push examinations fast nor too far. To classify mixed audiences into classes for examinations might hinder their usefulness—must alter their character. They consist of the fathers and mothers of villages, grown-up sons and daughters, and the larger children of the schools. They enjoy amazingly asking the oral teacher questions when once put thoroughly at their ease, but great silence falls over them when you begin to question them. Longer practice, riper experience, may make rural audiences as ready to answer questions as to ask them, but assuredly that time is not yet. And after, all the time in most districts has been short. I have not

yet given more than five lectures in any one district. My first and main objects have been to create an interest, to make all feel at home, free, ready to question me on every point they cared to know. So far the lectures were quite successful, and I considered that enough for a first experiment. But I have lately been asked as to examination results, offered forms, with help, &c. I confess to being slightly in doubt about it at this stage. Fruit-tree clubs, fruit plantations in most cottagers' gardens, regular attendances, eager attention, showers of questions, the testimonies of clergymen, county councillors, farmers, and large employers, in favour of good done, may be of equal or more value than examinations. Of course, all this in reference to mixed rural audiences, such as one has the pleasure of meeting in villages. In cases of classes formed of adult scholars, the case is quite different. I should be glad of the opinion of other lecturers on the examinations. Of course, it is the fashionable mode of totting up results, so-called, but under the conditions stated I hardly see how or when it should come in, or how it is to give a true measure of work done. *D. T. Fish*.

FOREIGN CORRESPONDENCE.

GARDENING NOTES FROM NEW ORLEANS.

THE British Consul at New Orleans, reporting to the Foreign Office on the agriculture of his consular district, refers to the system adopted in the cultivation of Strawberries as follows:—There are, he says, two distinct ways of renewing Strawberry plantations. The one which is generally preferred and adopted being simply transplantation, and the other some form of self renewal by the agency of runners. An objection to the latter is the continued occupation of the same piece of ground, the fertility being partly exhausted by the previous growth. This objection may in a great degree be remedied by copious and skilful manuring, and if the soil has been found by trial to be especially benefited by some particular fertiliser, the plant will be improved by an addition of it to the barn manure. A mode adopted by a cultivator in Canada, and reported to a fruit-growers' meeting, was found to have some particular advantages. The rows were not 4 feet apart, and when renewing was desired the old rows were rolled over and not ploughed up, and the trench thus formed was filled with fine manure, the old plants sending their runners over it and taking strong hold. The next season the old row was cut out, and the new plants given entire possession. Another mode is to plough the ground which has become densely filled with Strawberry plants, leaving a strip 6 inches wide of the old plants, which will form a narrow matted row, and filling the shallow furrows with fine old manure. All the runners but two are cut off immediately after the gathering of the crop, and these two produce each a new plant. The middle row after fruiting may be cut out. Still another mode has been used, where a few rare plants have to be removed to another place in the same garden. Square cavities are made with the spade in regular rows, and then the plants are lifted with a mass of earth on them, and placed in position in the new bed. This work may be done at any time in the year when the ground is not frozen. Ripe fruit has been produced in this way six weeks after early spring planting. Caution is necessary in adopting this mode on adhesive or heavy soils, not to press it with the spade with such firmness as to make it compact, solid or adhesive.

The following method is given of grafting the American species of *Diospyros* upon the Japanese Kaki (*D. Kaki*) as practised in Florida. The writer says:—"My choice of all the processes for propagating the Kaki is root-grafting on native *Per-simmon* stock, and, if possible, where the native tree comes up, and best sizes are from $\frac{1}{2}$ inch to 1½ inches in diameter at the crown. It is not a serious objection if they stand within 1 foot from each other, or the roots can readily be transplanted in

* *Zygopetalum graminifolium*, n. sp. — Rhizomes very slender, creeping round the stems of *Lomaria Boryana*. Pseudobulbs small, ovoid-oblong. Leaves narrowly lanceolate-linear, acuminate, nerved, 8 to 12 inches long. 3 to 4½ lines broad. Scapes erect, five to seven-flowered. Bracts lanceolate-ovate, acute, base sheathing, 1 to 1½ inch long. Petals like sepals, but narrower towards base. Lip broadly obovate or obovate, 1 inch long, $\frac{3}{4}$ inch broad; crest very large, horseshoe-shaped, crenate. Column clavate, $\frac{1}{2}$ inch long. Native of South Brazil. *R. A. R.*

grove form, and when the leaves are off, and at the end of the following year root grafted. Grafts will grow if put in from November until the leaf buds begin to swell on the native Persimmon. Kakis 'leave out' in this portion of Florida later than the native trees. The grafting is so simple a process that even a novice may succeed with very little previous experience. After selecting the stick to be grafted, it is cut or sawn off at the ground or below the surface, if the 'stock' is long enough to allow splitting and inserting the graft. The graft should be cut wedge-shaped, the slopes about three-fourths of an inch long, leaving more bark on the (to be) split 'stock.' Then place a piece of old cloth or paper over the top of the stock, and heap damp earth on it, just covering the top of the graft. Grafting wax is not required."

The Peccan Nut (*Carya* spp.) is said to be a profitable plant for cultivation, a full bearing tree being worth, near New Orleans, from twenty-five to fifty dollars a year. It is generally propagated from seed, that being the easiest and surest method of obtaining a stand. In growing this nut it is fully understood that the seed does not always produce its like, unless gathered from a grove that produces the large variety, or from a tree sufficiently isolated from other inferior kinds.

For planting purposes nothing but the large soft (or so-called paper shell) kinds should be chosen. These must be from the new crop, used as fresh as possible, or packed for future use in moist sand or leaf-mould. The best soil for a Peccan grove is a creek or river bottom. An occasional overflow does not harm the young tree, provided it does not cover it up entirely, or does not remain too long. In setting out a seedling orchard it is always advisable to give them plenty of room, 70 to 75 feet is none too close where the soil is low and rich, or 50 feet on poorer uplands. The land set aside for the orchard must be both hog and cattle proof until the trees are large and strong enough to escape injury from stock. When the time arrives for planting, a stake may be driven where the tree is to remain permanently, and from two to three nuts placed near the stake, about 2½ to 3 inches below the surface, and a mould of forest leaves, or leaf-mould, applied, which will prevent the seed from drying out. This may be raked aside the following spring. If the seed has been properly selected and preserved, nearly all will grow. The extra plants, with the nuts attached, may be carefully transplanted, either into the nursery or used in extending the orchard.

However careful the cultivation may be, and however large the crop of fruit, it will be unprofitable unless well and carefully packed for market. Many thousand dollars worth of fruit is yearly thrown away because proper care was not exercised in handling before shipment. From the time the fruit is plucked from the tree it should be handled as carefully as if each were an egg. The slightest bruise, scratch, over-ripeness, or accumulation of moisture, is a detriment, and may cause several dollars loss. For keeping purposes the fruit should be kept cool and dry. Peccan nuts are imported into England in small quantities as a dessert nut.

A TRAVELLER'S NOTES.

(Continued from p. 68.)

Gwalior, December.—The gardens surround two palaces, both huge white stone structures of comparatively recent date. These two palaces (the older of which is certainly the handsomer) are surrounded by a high wall, 4 miles long, enclosing some fourteen irregular walled-in spaces. The entrances are guarded, and access forbidden to all. These fourteen walled-in spaces, usually with a white stone pavilion in or near the centre, form a perfect maze; these pavilions were used for rest-houses, the roads and paths in each enclosure always centring towards the building. Large gateways lead from one enclosure to the other; each enclosure is laid out with large beds, or rather shrubberies, each enclosed within a low close-cut hedge, usually of *Lawsonia alba* or *Duranta Ellisii*. In every case these shrubberies consist of Oranges, Limes, and Guavas, some in a wretched condition,

some pretty fair. Mr. Maries, with whom I stayed, is not allowed to alter these and plant them as he would like, as they were made by the late Maharajah, and must not be touched. He, however, says it is curious how many die for want of water in the hot season. Doubtless in time he will be able to lay these enclosures out as he has the portion of the ground round the new palace. In some of these enclosures a thick jungle of the common Plantain is to be seen. It is cultivated for the Maharajah and all living in the palace to eat off, about 2000 leaves being required daily. It does fairly well, but the climate here is too cold for the choicer varieties.

Mr. Maries pays a daily visit to the gardens, and usually enters by the gate nearest the railway into the enclosure known as the Old Deer Park. This is but a few acres in extent, and here he has been allowed to make a few improvements. A white stone museum, the foundations of which are only just laid, is in course of erection. Over this he is to have full charge, a task after his own heart. A nice level tennis-lawn of Doab grass, for the use of the Maharajah, his friends, and his tutor, is a little beyond, flanked on one side by a model plantation of inarched Mangoes; these have just been planted. On the other side, near the wall dividing this from the next enclosure, are some splendid dwarf Roses, better than many one sees in England. They are grafted on *Rosa gigantea*, a species growing with great freedom here, and are kept for cutting purposes, Mr. Maries being able by judicious pruning to supply cut Roses all the year round. Those I saw in the Old Deer Park were pruned in October, and have now shoots a foot long, and some nice plump buds. A long oblong bed of *Maréchal Niel* is very striking; it grows with such luxuriance as to be little better than a tangled mass. The foliage is of a good colour, the plants being evidently in fine condition.

Behind the tennis-court is a level stretch of Doab grass for tent-pegging, with a young row of newly-planted *Dalbergia robusta*, at present not more than 10 feet high on either side. Its pretty oval pinnæ are, I think, more graceful than the foliage of *Dalbergia Sissoo*, so common about here. Within the Old Deer Park, but a few yards from the tennis-court, is a covered court for the old English game of tennis—much like the one at Hampton Court; the bank outside has been planted with young *Beaumontia grandiflora*. Mr. Maries tells me this is splendid when in flower. Some *Eucalyptus robusta*, but two years old and 10 feet high, are near here, as well as some beds of *Jasminum Sambac*, and other plants producing sacred flowers specially grown for cutting for "Foodjers," or worship, as well as for "Durbars." One of the niches in the tennis-court is planted with *Acalypha Macfarlanei*—a splendid colour here—brighter, I think, than I have seen it elsewhere.

The next enclosure to the Old Deer Park is full of Limes and Oranges, whilst another contains Guavas, of which Mr. Maries has about fifteen varieties.

A fine avenue of a species of *Artocarpus*, commonly known as the Monkey Jack, is on one side of the sacred bathing-tank, whilst on the other are some fine Peepul trees (*Ficus religiosa*), and some Mowah, beyond being some irregularly-shaped shrubberies of Oranges, Limes, Guavas, and custard Apples (*Anona*), enclosed by low closely-clipped hedges—usually *Duranta* and *Lawsonia*—though *Jasminum pubescens* is also used, making a pretty hedge.

We soon entered Mr. Maries' nursery and propagating department, chiefly filled with plants ready for permanent plantations or for decoration at the palace—it was wonderfully clean.

There are two or three small glasshouses, a long pit, and two large enclosures, one here and one in another part of the garden, the one in the nursery being covered with the dried canes of Monje-grass, whilst the one further away and nearer the palace, is covered with dried Khaso-grass, supported in both cases by wire-netting on iron rafters and rough stone pillars.

The two small houses are chiefly used for raising seedlings—more particularly young Ferns, in which Mr. Maries takes great interest; he has a special system, which is certainly very successful—his Ferns are wonderfully fresh and green when one considers they are grown in the plains of Central India. In one house are some young *Adiantum tenerum*, as well as a curiously curled variety of this species, some *A. Reginae*, and *Lastrea lepida* seedlings only a few inches high, some young cuttings of *Coleus*—nice bright varieties—just struck, whilst in the other house just opposite, some young Conifer seeds,

chiefly *Thuia*s, were germinating freely. *Casuarinas* were also to be seen in a seedling state; these are considered, as in other places I have been to, most difficult to raise—though when once started they make big trees. *Arundinaria falcata* was also being propagated in this house. Pine-apples are cultivated in a glass-covered enclosure (not included in the two mentioned), with big pots of healthy-looking *Eucharis* and *Rhapis flabelliformis*. One, which Mr. Maries calls *R. elegans*, much like our *humilis*, is here grown for decoration. Some young *Caryota sobolifera*, a branching species of quicker growth and with broader leaflets than *C. urens*, are also waiting in the glass-covered enclosure for planting out. Some *Latanias* and *Coryphas*, 2 to 3 feet high, were very smart, as well as some *Oreodoxas*, and the handsome *Livistonia Jenkinsii*, from Assam. Mr. Maries pointed out some pots of what he considers to be a new *Pteris*—a native of Nepal—it is certainly very pretty, with fronds 2 to 3 feet long. The glass-pit—a lean-to against a high wall, is just beyond the little office, and parallel with the glasshouses—it is chiefly used for striking cuttings, at the present moment being partially filled with some store pots of *Murraya exotica*, *Gardenias*, *Rosa gigantea*, usually five cuttings round the edge of each pot.

Immediately at the end of the glass pit is the immense grass-covered store-house; herein plants are kept ready for decoration, and newly-rooted cuttings from the glass pit often temporarily placed. In this store-house I saw some clean young *Livistonia*s, *Areca sapida*, *A. lutescens*, as well as some *Kentias*, which Mr. Maries says do well outside. Also some pretty foliage *Begonia*s, hybrids between *Begonia Rex* and a Sikkim variety, with pretty bronze and silver tinted foliage, raised on the place.

A few *Dendrobium Pierardi*, the only one Mr. Maries can do much with, hang from the roof at one end, whilst *Adiantums* of all kinds line the stone beds filled with small plants in pots—clean and healthy—and ready at a moment's notice to be sent to decorate the palace.

Outside this store-house are small plants, all ready for planting out, an operation usually performed in the rains—though Mr. Maries finds by keeping plants in pots they can be planted during the cold season, if subsequently judiciously watered. A quaint kind of brush is used for washing the Palm leaves—as well as for painting lights, and reflects credit on Mr. Maries' ingenuity—it is a short piece some 6 to 8 inches long, of the base of a midrib of a Phoenix leaf—one end—for about half an inch being spread—it makes a cheap and durable article; I saw it being effectually used on the foliage of some *Livistonia*s.

A few other Orchids besides the *Dendrobium Pierardi* on the low roof are grown, such as *Saccolabium Blumei* and *Aërides affine*—they are, however, not in good condition, having been neglected during Mr. Maries' stay in England last summer. On passing by a low doorway defining the limit of the nursery in this direction, and dividing it off from the road adjoining, not far away, at right angles, the one leading up to the main gateway to the palace, a large lake with an island in the centre is reached. In this portion of the park immediately in front and around the palace, Mr. Maries has been allowed to plant as he likes, and one recognises the English forms of the beds, shrubberies, &c.

The road between the nursery wall and the lake is shaded by some fine Peepul trees (*Ficus religiosa*), and leads into a broad gravelled path, flanked on one side by a tall, handsome iron fence and on the other by the lake. The iron fence has been planted with *Rose Cloth of Gold* and *R. citriodora*, which in time will hide the stone parapet, some 3 feet high, supporting the ironwork. Beyond the iron fence is the dreary waste of the natural country, little else but sandy dry soil and Babools; though in one place there is a large pond from which the water in the tank is obtained. In the rains the lake or tank rises high, and last year broke down portions of the road; in reality, the top of a large embankment, which leads to the main gate.

Adjoining the iron fence is a high wall, broken in the centre by the main gateway, which is exactly opposite the palace. At the end of this wall, several hundred yards in length, are the elephant stables, in which some thirty fine brutes are confined. I am told when one breaks loose, especially if it be a "mad" one, there is sad havoc in the garden.

Against this wall *Bougainvilleas* and *Roses* have been alternately planted; whilst on the opposite side from the lake up to the road leading from the main gateway to the palace, is a thick shrubbery, chiefly

composed of *Acalyphas*, with taller Nims (*Azadirachta indica*) behind.

The plants massed in the bends of this shrubbery—an idea, I am told, of the young Maharajah—are such things as *Bougainvilleas*, *Acalyphas*, *Poinsettias*, *Poincianas*, *Bamboos*, &c.

In this shrubbery, near a little path leading to the grass-roofed house already mentioned as being near the palace, is a young Mango, with the young foliage beautifully tinted with a rich glossy brown, a not uncommon feature even with seedlings. Another nice tree in this shrubbery is *Colvillea racemosa*; I hear its flowers are much like a *Tritoma*, but pendulous and larger. When in flower, it is much frequented by blue humming-birds, forming a striking contrast in colour; the tree in question is but three years old, and 30 feet high. There is also leading away from the high boundary wall and parallel with the lake, one of the stone irrigation canals. The irrigation in this park is very perfect, and deserves a word. The water is obtained from nine reservoirs in the hills, the largest reservoir being little short of a mile

At the end of this grass-roofed store-house is a small glasshouse, chiefly filled with Ferns, and kept for the Maharajah, to take whatever and whenever he likes. He has developed a great fondness and interest for Ferns, almost unknown here before Mr. Maries came. In this little house he has *Crotons*, *Pteris Bausei*, *Gymnogramma argyrophylla*, as well as the *Adiantums*; they look wonderfully fresh and healthy.

One again soon reaches the lake. I noticed the edging to the shrubberies on this side are often *Ixoras* or *Jasminum pubescens*.

A new marble rest-house is to be built on a low embankment not far from here, covered with *Bougainvillea glabra*—the effect will be pretty. A Chinese Banyan—a graceful, drooping, low shrub—is also used here; it is exceedingly pretty, but I was unable to find out the botanical name.

The Water Palace, a white stone, prettily domed structure, on the edge of a large tank, is passed on leaving the park.

Just before I left the park, we had a look at the

the last ten or fifteen years such fine new varieties have been added to the fancy section as to almost cause raisers to despair whether improvements can be effected in them. Really, we look for new fancy varieties almost if not exclusively from Slough, and if others are sent out from other sources, they seldom if ever come to the fore as exhibition plants. It is curious to note how two or three varieties raised thirty and forty years ago still find a place in lists; they are—Henderson's Cloth of Silver, which has never been surpassed for its peculiar colour; *Delicatum* (Ambrose), almost unequalled for its profusion of bloom; and *Roi des Fantaisies*, which has a striking novelty of colour, a combination of rosy-crimson and white peculiarly its own.

The origin of the fancy *Pelargonium* has never to my knowledge been authoritatively set forth. It is generally supposed to have come from a species, probably *P. inquinans*. The varieties of the fancy type stand in the same relation to the show *Pelargonium* as the feminine does to the masculine. There is a delicacy of habit, a peculiar softness of tint in many; they are so sweetly fair that they are differentiated in a remarkable degree from the more vigorous and robust large-flowered types. They should not have a stove treatment, but they need to be kept warm and fairly moist while they are growing into size and perfecting their head of bloom. The habit of growth is close, and, indeed, generally very dense; and the freedom of bloom is so great, that when fully developed upon well-grown plants it is difficult to discover many leaves, so completely are they hidden from view.

A selection of a dozen of the best varieties should include only those raised at the Royal Nursery, Slough, such as *Ambassadors*, soft lilac-rose, white centre; *Dorothy*, white, with small carmine spots on the top petals—a very pretty light variety; *East Lynne*, crimson-purple—one of the largest; *Ellen Beck*, lilac-carmine, with pale bright margins; *Iona*, pale lower, deep lilac-rose top petals, with a distinct blotch on each; *Lady Carrington*, soft pale peach, pale pink upper petals; *Mrs. Hart*, bright crimson-purple and rose, variegated with white; *Mrs. Langtry*, white, with bold rosy-lilac spots on the top petals; *Phyllis*, deep rose, large white centre; *Pilgrimage*, pale lilac, white centre and edges; *Princess of Teck*, white with carmine spots, at once one of the most distinct, finest formed, freest, and most attractive varieties, unsurpassed for exhibition; and *The Shah*, deep crimson-purple with narrow edge of lilac, a very fine and beautiful variety.

Fancy *Pelargoniums* bloom, are dried off and cut down at the same time as the large-flowering varieties; and though cuttings of the former made from the ripened wood are put in at that time, the general method is to propagate by means of cuttings made of the young wood in spring. These are put singly into small pots of light sandy soil, or a few in a larger pot, and struck in a gentle bottom-heat, and then grown on in a cooler temperature. A successful cultivator and exhibitor of fancy *Pelargoniums* sets forth his cultural process as follows:—"The fancy *Pelargonium* may be grown to almost any size by keeping the house moist and warm, as the plants like a little warmth, but plenty of air should be given all day when it can be done, and the plants should have plenty of room, else the foliage becomes drawn. The peculiar character of the growth of the fancy *Pelargoniums*, close and dense, operates to crowd a specimen with shoots, therefore, in case of specimens, the outside branches should be tied out so as to afford room for the centre shoots to develop. In potting, the plants need to be kept higher in the pots than the large-flowering varieties, so that what is termed the 'collar' of the plants—that is the point where the main stem joins the roots—"be kept level with the surface of the mould. Great attention should be paid to watering. It is better to find six plants too dry than one too wet. There is a remedy for the first evil, but none for the latter, which often causes decay and death. The roots of the fancy *Pelargoniums* being of a much finer character than those of the more robust-growing, large-flowered varieties, cannot endure an excess of moisture."

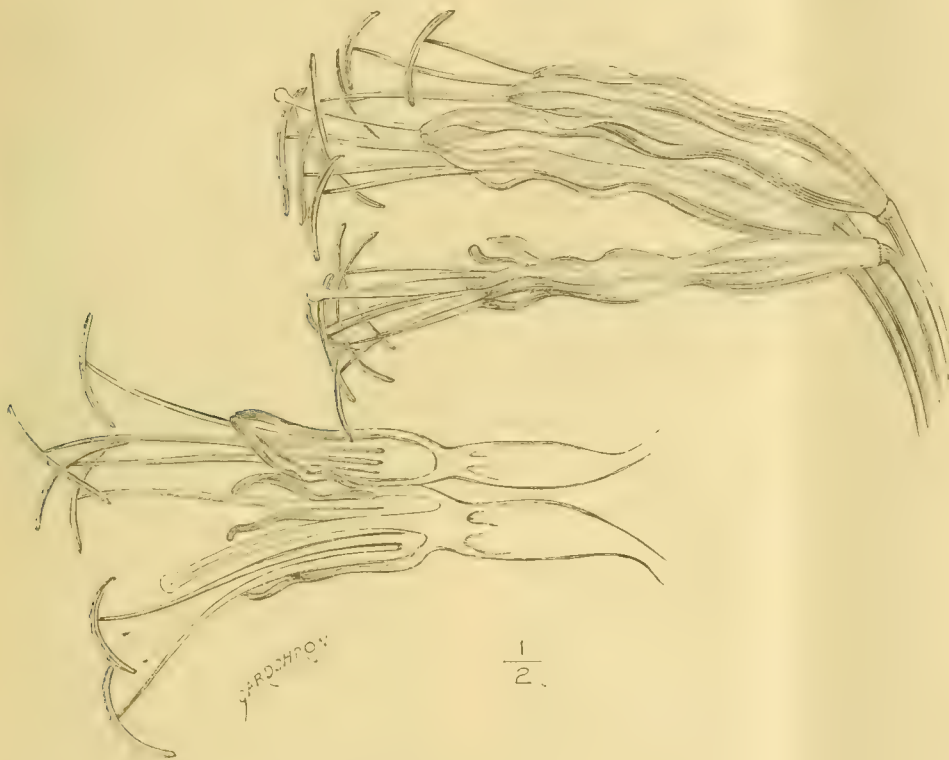


FIG. 31.—FLOWERS OF AGAVE FRANZOSINI, FROM LA MORTOLA: COLOUR, GREENISH-YELLOW. (SEE P. 179.)

square, and is distributed in every direction through the park in open stone canals varying from 1 foot to 6 feet broad. The one I have mentioned, leading away from the high boundary-wall, is one of the largest, and is shaded on either side by good specimens of *Mimusops Eleni*, the flower of which is sacred.

Between this main entrance road and the elephant stables is a fine row of *Wellingtonias*.

The grass-roofed house in the shrubbery, on the borders of the lake, and close by a plantation of *Casuarinas* and *Mahogany* (the intention being to cut the former out when the latter have grown sufficiently strong), is chiefly filled with good-sized *Crotons* planted out. Water trickles through it in an open canal prettily edged with rockery, which is planted with Ferns, chiefly *Adiantum tenerum*. *Anthuriums*, *Philodendrons*, *Monstera deliciosa*, amongst other plants, are dotted about.

The *Crotons*, which occupy nearly the whole space of the house, are kept so that the young shoots may be struck for decorating purposes. It is found that *Crotons*, planted out, will live through the cold season under a grass roof, but those in pots require glass.

vegetable garden. All kinds are certainly good except Peas—these are scarcely up to the mark. Considering last season in England, I was not surprised. Cauliflowers, Turnips, Carrots, and Lettuces were quite as good as we get them. Tuberose are also good. *James H. Veitch*.

(To be continued.)

FLORISTS' FLOWERS.

THE FANCY PELARGONIUM.

THE infrequency with which new varieties of fancy *Pelargoniums* are introduced is somewhat remarkable, when compared with the numbers of new large-flowering or show varieties announced from year to year. The latter are now produced much more sparingly than they were a few years ago, but scarcely a year passes without some being announced. One reason for this is seen in the fact, that the large-flowered *Pelargonium* admits of greater variation in colour than the fancy type; another is, that during

Fancy Pelargoniums requiring a warm and somewhat moist atmosphere, should have a small house to themselves to do them well. Those who grow for exhibition are able to supply this, but it cannot be done by those requiring plants simply for house decoration. A good compost for this plant is one made up of fresh fibry loam, well decomposed cow and stable manure, some leaf-mould and silver-sand, to which should be added a little peat and broken oyster-shells. As a rule, the fancy Pelargoniums will do well in a smaller pot than the large-flowering type, but much of course depends upon the size and vigour of the plants. *R. D.*

REMARKS ON THE FRUIT CROPS OF 1892.

[For Tabulated Summary, see p. 93.]

(Continued from p. 155.)

S. ENGLAND, S.W. AND W.

CORNWALL.—We have again a most disappointing fruit season about here. The Apple trees showed abundance of bloom, but in most places are thin, nothing like a crop, and Pears are still worse; they set very freely, but cold frosty nights have left us with few fruit. Peaches and Nectarines on open walls, without any protection, are the best crop I have seen for years, and the trees are making excellent growth. *James Murton, Pencalenick.*

— It is now about twenty years since I first had the privilege of reporting on the fruit crops for this district, and never have I given in a worse report than the present; 14° of frost was registered here on April 15. The warm days of the preceding week brought Plums, Pears, and Peaches, into full bloom, and nearly the whole were killed by the frost. It was so severe, that even beds of such hardy things as Radishes and Broccoli were frozen to death. *Chas. Lee, Boconnoc, Lostwithiel.*

DEVONSHIRE.—Apple crops in garden and orchard are much below average. A few sorts appear never to fail, such as Lord Suffield, Stirling Castle, Prince Albert; and a few others have fair crops in the orchard. Pears are an absolute failure. Plums not much better; the trees were in full bloom on Good Friday, when the frost (12°) cut all off. Strawberries are very good. Gooseberries and Currants could not be better. *Geo. Baker, Membland, near Plymouth.*

— In sheltered places the fruit crops may all be classed good. In open places, however, they are below average, and they are mostly of inferior size. This in great part is probably due to the unusual dryness of the year, the total rainfall for the first six months of the year being 9.42 inches only; while the protracted cold of the winter and spring-time was alike detrimental to the growth. *James Enstone, 38, Temple Road, Exeter.*

GLOUCESTER.—Apples are an average crop; the trees are not so infested with the grub as late years. Pears are very poor; most of the bloom was destroyed by the late spring frosts. Plums are an average crop, the culinary varieties requiring much thinning. Bush and other small fruits are very plentiful, but Nuts appear to be quite a failure. *A. Chapman, Weston Birt, Tetbury.*

— The prospect of an abundance of all kinds of fruit (except Raspberries) was never more cheering than was the case until April 26, when, after a fortnight of delightfully warm weather, the thermometer rapidly fell, and we had a heavy storm of hail, followed by two days of frost. On the 27th, 7° more was registered; on the 29th, 5° more; 30th, 8°; and May 1, 8° more; 2nd, 6° more; this was followed by more fine weather, but the damage was done. Pears, Plums, Apricots, and Cherries were ruined. The Apricots were as large as small Beans at the time of the frost, but quite shrivelled up. Apples were not far enough advanced for the buds to be injured generally, but in the case of D. T. Fish and Warner's King the buds were completely shrivelled up. They set quantities of fruit, which have since dropped off. I am of opinion this was due to imperfect flowers from unripened wood. The

trees are free from winter-moth. *Thos. Arnold, Cirencester House Gardens, Cirencester.*

HEREFORDSHIRE.—The spring frost played sad havoc with our fruit crops here, Apples and Pears on low-lying ground being almost a failure; but on the higher ground the crops are good. Plums came out of the ordeal better. Bush fruits very thin, but what are left are very fine. Strawberries a good, but not extra heavy, crop of poor quality. *John Watkins, Pomona Farm, Withington, Hereford.*

— The crops of Apples in this district are, on the whole, very good indeed, although the trees are not carrying such a weight of fruit as they at one time promised to do. The sharp frosts on the mornings of April 14, 15, 16, and 19 did a great deal of harm to Pears and Plums, with the result that the crop is a very light one. Some Plum trees in the neighbourhood growing upon the hill, and well above the fogs which gather in the valley, are bearing well, and Cherries are carrying unusually heavy crops. All bush fruits, Gooseberries excepted, are very abundant. *A. Ward, Stoke Edith Gardens, Hereford.*

— The Apples in this district are light generally, although some orchards have a fair crop; the quality promises to be very good. Pears the same. Plums are a fair crop, but the trees are very badly blighted. Strawberries have never recovered the severe winds and frost in the late spring. Gooseberries and Currants, though rather late, are of good quality. *Frank Harris, Eastnor Castle Gardens.*

MONMOUTHSHIRE.—Apples are a good average crop; King of the Pippins here still remains one of the most certain bearers. Pears blossomed freely, but were much injured by frosts, as were also Apricots and Plums. Dessert Cherries are good, but Morellos are somewhat thin, many fruits failing to stone. Currants, both black and red, together with Gooseberries, suffered slightly from frosts, and yet they are abundant. Raspberries carry fair crops, while Strawberries are enormously prolific, and their fruit is of excellent quality, both in size and flavour; Vicomtesse H. de Thury and President are amongst the best bearers; Noble, upon warm borders, is very useful for an early supply, and Waterloo, upon north borders, is also valuable for late use. *Thomas Coomber, The Hendre Gardens, Monmouth.*

SOMERSETSHIRE.—All the Apple trees flowered very freely, but many of the flowers on some of them must have been injured before they opened, as they fell off in great quantities. The only Pears that escaped are against a wall with a north-east aspect. Cherries and Plums were badly damaged by frosts, but Peaches and Nectarines escaped marvellously well, and the Apricots on hottest walls are very abundant. Strawberries damaged both by late frosts and drought. *W. Iggulden, Marston Gardens, Frome.*

WORCESTERSHIRE.—The Apple crop is an extremely partial one, mainly owing to the fluctuating agencies of a wave of frost which swept through this district during the blooming period (18° in places with wet snow). Here and there trees are spared, and consequently well laden, whilst others almost adjoining, and of some kinds, are barren. A bad attack of the destructive Apple-blossom weevil, an insect which develops in the core of the fruit, caused the dropping off of many fruits. Apricots are the worst crop I ever remember, but Peaches and Nectarines flowering later escaped, and are good clean crops. Peach Waterloo was ripe on outside walls, July 10. Plums are good full crops, excepting the Gage family and a few other tender sorts. Damsons well laden, excepting those grown in damp low-lying districts. Bush fruits medium crops, and Strawberries heavy. *William Crump, Madresfield Court, Malvern.*

— The condition of the fruit crops in my district is very variable. All stone crops are good, Cherries and Peaches, and Nectarines exceptionally so. Plums in the open air a very heavy crop, but against east walls almost nil, which must be attributed to frost whilst the trees were in full bloom. Pears are a very short crop; and Apples are much under the average, excepting such kinds as Stirling Castle,

Duchess of Oldenburg and Ecklinville. Strawberries are very good, and other small fruits, except Gooseberries. *A. Young, Abberley Hall Gardens, Stourport.*

WORCESTERSHIRE.—Taken all round, the fruit crops with us are not so satisfactory as usual. Plums in many places are a very heavy crop, and in others extremely light; Pershore, Rivers' Prolific, and Victoria are the best. Pears are a very poor crop indeed. Apples are fairly plentiful; those carrying the best crops are Worcester Pearmain, Hawthornden, Warner's King, Grenadier, Sturmer Pippin, Ribston Pippin, and Golden Reinette. Bush fruits are a very good crop, not having suffered from the spring frosts nearly so much as at one time anticipated. *Walter Child, Croome Court, Severn Stoke, Worcester.*

— Plum crop in this district on the whole is about an average; though some localities where Plums were heavy last year are very thin this year. Gooseberries are very scarce. Apples are a general failure. The season has been a trying one for the fruit crop. The cold spring, the continuous frosts, and the drought, so that it has been only the hardiest of common varieties that have withstood the test. *Joseph Masters, Evesham.*

— Apples and Pears are a very partial crop, and, taken on the whole, it is much below the average, although exceptions are to be found in a few sheltered orchards and individual trees, and some heavy crops are noticeable. We had apparently a good bloom, which was not spoiled to any extent by frost, but the individual flowers were, in a measure, ill-shapen, especially the stalks; there was also an absence of pollen and a want of vigour. The cause of this is probably due to the cold and sunless summer of last year, which prevented the wood from ripening. I attribute to this also the almost complete failure of the Apricot crop, and the more than usual death among the branches. We were gathering Apricots last year in the middle of October—nearly two months later than usual. Peaches and Nectarines, on well-drained borders and warm sites, are plentiful, and the trees healthy. Sweet Cherries are most abundant, but lack size. Bush fruits generally are good, with the exception of Gooseberries. Strawberries abundant and fine. *John Austen, Witley Court, Stourport.*

(To be continued.)

NURSERY NOTES.

LILIUM SPECIOSUM ALBUM NOVUM, AND L. S. MELPOMENE.

At the Orchid and Lily Nurseries of Mr. H. A. Tracy, Amyand Park Road, Twickenham, a good lot of these plants was recently in bloom, fully bearing out the grower's selection of them as the two best forms of *L. speciosum* for all purposes. Mr. Tracy grows Lilies largely for cutting, and he has had a large show of flowering plants for a considerable time past. The chief colour in *L. sp. Melpomene* is a rich crimson, whilst *L. s. album novum* is wholly white with yellow anthers, and by the colour of the anthers it may readily be distinguished from the inferior *L. s. Krätzerii*, which has chocolate-coloured anthers. Both of these forms have the usual fragrance of the species, and there can be no doubt as to their merits. Mr. Tracy says there is a difficulty in importing them true.

THE OLD NURSERIES, CHESHUNT.

The Cheshunt Roses are known all over the world, and notwithstanding the peculiarities of the season, and the large demands recently made on them for cut blooms, Messrs. Paul & Son's grounds show a very fine display. Many of the new Cheshunt hybrids are coming into bloom, and others, having stood the test of the severe trial they are here subjected to, are showing their good and distinct qualities. In testing a new Rose, Messrs. Paul try it simultaneously on the Manetti, on seedling Briar, and on Briars from cuttings; and, moreover, the trial plants are planted in different situations, so that the raisers may in due time form a fair opinion

of the merits of each. Of the recently passed, T. B. Haywood is a brilliant and distinct flower of a crimson-tinted scarlet hue, with the basal half of each petal richly tinged with maroon. Among the thousands from all raisers to be seen here, there is nothing like it or so brilliant. Mrs. Paul is another beauty of great size, of a blush-white, shaded with pink, and a Gold Medallist. Violet Queen is fine and distinct in colour; Bruce Findlay, a grand intensely bright crimson; and, among other fine hybrid perpetuals, Dowager Duchess of Marlborough, soft pure rose; Salamander, bright scarlet-crimson; Margaret Dickson, a grand white, with flesh-coloured centre; Madame Caroline Testout, like a rosy-salmon La France; the white La France, Augustine Guinoisseau, Duc d'Orleans, bright crimson; Gustave Piganeau, rosy-crimson; J. D. Pawle, a noble rich velvety-crimson, shaded with maroon; Marquis of Salisbury, fine crimson; Suzanne-Marie Rodocanachi, clear light rose; and that marvellously beautiful Mrs. John Laing, were all of extraordinary merit, and would make a grand selection. Among the Tea-scented Roses, of which there is an immense quantity cultivated for planting, and also for growing in pots, Kaiserin Frederick, Elise Fugier, lemon white with a pink tinge; Innocente Pirola, light fawn; and climbing Perle des Jardins, were conspicuous.

Among decorative Roses, Paul's Cheshunt Scarlet is the nearest to scarlet of any Rose; Paul's single white and single crimson are two useful kinds, and Vivid is a brilliant pillar Rose.

But the most interesting of all the groups at the Old Nurseries, and the one which is getting increased attention, is that of the botanical species of Roses, and their very oldest garden forms, and of these Messrs. Paul & Son have been collectors and propagators for many years, making the undertaking a labour of love, even long before such plants came into notice with gardeners generally. In all the classes complete sets are to be found, the different species ranging from the pretty little *Rosa berberidifolia* to the huge *Rosa gigantea*, the new Indian Rose, which is said to have flowers nearly 6 inches across. Among this interesting class we noted the Sweet Briar Janet's Pride, with semi-double light rosy-crimson flowers with darker stripes; *Rosa Brunonis*, the Himalayan Briar; *Rosa rubrifolia*, with charmingly tinted red and silver leaves; *R. setigera*, the Prairie Rose, in two or three varieties; some hybrid *R. rugosa*, of which the double white *R. r. Madame G. Bruant* was the best; *R. indica*, Miss Lowe's Crimson, varieties of *R. polyantha*, the true York and Lancaster Rose; and *Rosa Mundi*, which generally does duty for it in gardens, although quite a different thing.

Leaving the Roses, and glancing at the other fine hardy trees and shrubs, we have an opportunity to compare the old *Acer negundo variegata* with the *A. n. robusta*, which is evidently a hardier and a freer-growing variety; and also with *A. negundo-aurea*, which is certainly a desirable plant where coloured foliage is wanted.

Passing to the pretty nook known as the golden garden, we find an admirable effect made by a circular bed of *Taxus elegantissima aurea*, arranged with golden Irish and English Yews, the first named being much the brightest. *Ulmus Van Houttei* also has yellow foliage, and the golden Alder and the other plants in this pretty little garden all have leaves of a more or less yellow tint; but the admirable arrangement secures a good effect.

Large-flowered Cannas are much cultivated at Cheshunt, and Mr. Geo. Paul shows with pride a quantity of home-raised seedlings, which, in addition to having the fine flowers and rich colours of the older forms, are of a very dwarf habit, the whole plant when in flower being in some cases not more than 1 foot in height. Should they retain that dwarf habit, they will be eagerly sought after. Among proved kinds in flower, *Canna Alphonse Bouvier* has large blood-red flowers, Ulrich Brunner, orange-tinted scarlet; Petite Jeanne, scarlet-edged yellow; President Carnot, crimson; Professor David, yellow, speckled red; Miss Sarah Hill, a fine glowing

crimson; and Admiral Courbet, yellow, with dark spotted centre.

In the houses we found a large quantity of the Cheshunt strain of *Amaryllis* or *Hippeastrum*, in which it is sought to retain as many flowers on a scape as in some of the old species, and improve them in form and size; a fine batch of seedling *Disa grandiflora*, with some new tints among those in flower; a quantity of the best varieties of *Cœlogyne cristata* and *Cypripedium insigne*, thriving in various situations; a good lot of the pure white *Agapanthus umbellatus albus*; *Schubertia graveolens*, flowering freely; and also the pretty *Bomarea Lehmanni* and *B. Carderi*. *Garrya elliptica* perfects its seeds under glass, and the seedlings come up freely; and house after house of grand Tea Roses in pots is worthy special attention. Messrs. Paul & Son also have a good selection of hardy perennials and alpine plants.

P. McARTHUR'S NURSERY, MAIDA VALE, LONDON, W.

This establishment contains many very interesting and rare Orchids, and although there are many miscellaneous plants, this family forms by far the most noticeable feature of the place. Just now there are some very fine and distinct forms of *Odontoglossum Harryanum*, one of them has large and richly-coloured flowers, a peculiarity of which is, that it expands the petals in the same manner as the sepals. One very light-coloured variety has the marking of the lip of lavender-blue, and another has a reddish-purple coloured lip, very different to the decided blue of the ordinary forms. All the *Odontoglossums* are in exceptionally good health, and are making fine, strong, clean growths. It is rarely we have seen them so happy.

Amongst a large number of *Dendrobiums* is a good batch of *D. Brymerianum*, the better form of some with shorter pseudobulbs, and better flowers than the common type; and in this house we noticed several plants of the exceedingly rare *Grammatophyllum Ellisii*, a good number of *Odontoglossum Inseleyii*, and some very healthy specimens of what is supposed to be a new plant, and which somewhat resembles *Eulophia scripta*. Some semi-established plants of *Cypripedium Chamberlainianum*, and a good group of *Odontoglossum Roezlii* are likewise healthy and vigorous. Of the *Cypripediums* we noticed some good plants of *C. Harrisonianum*, *C. superbiens*, *C. concolor*, *C. ciliolare*, *C. callosum*, *C. Haynaldianum*, and *C. Godefroyæ*. A little importation of a distinct type of this latter variety are showing some very fine forms. *Vanda Sanderiana* is represented by a few first-class specimens, and amongst some *Dendrobiums*, *Phalanopsis Schroderianum* is a variety which bore flowers nearly white on the last occasion. This plant is now showing two spikes from the apex of a fine healthy growth. A large number of the true *Cattleya labiata* are established in baskets suspended from the roof, and there are also many other varieties of *Cattleya* in very fair condition. *Lælia xanthina*, although introduced in 1859, has never become very popular; but here we noticed a plant bearing very attractive flowers, the lip being more distinct than the type, and almost white. The sepals and petals were a soft canary-yellow colour. In another house were some good plants of *Cœlogyne cristata*, *C. c. alba*, *C. c. Lemoineiiana*, and *C. c. maxima*, also a fine large pot of *Cymbidium Lowianum*.

Miscellaneous Plants.—There are several houses devoted to various stove and greenhouse plants, including Palms, *Eucalyptus*, *Acacias*, *Liliums*, *Pelargoniums*, &c. The *Pelargoniums* obtain in much variety, and the French varieties of the zonal section are especially well represented. There are also some varieties that are especially recommended for bedding, one of the best of which is *Souvenir de Mirande*, with salmon and white flowers, a pretty and effective plant. There is also a good collection of *Carnations*, some of the seedlings being very meritorious. Mr. McArthur has some more ground and glass at Hanwell, and in the Harrow Road, W., where he grows many hundreds

of the *Euonymus*, both gold and green varieties, Ivy-leaved *Pelargoniums*, *Ampelopsis*, &c. From 2000 to 3000 *Chrysanthemums* are grown, and these are now looking in the very best condition.

INDIA.

CALCUTTA.

The annual report of the Royal Botanic Garden shows that a large amount of earthwork has been done, consequent on the improvement of the roads. The abnormally dry season proved detrimental to many of the plants. Dr. Prain has, during the year, explored the flora of some of the Andamans previously unvisited, and also visited Chota Nagpur and the Jaintea Hills [Khasia] with the same objects. Other collectors have been at work in Tennasserim, Tavoy, Mergui, the Naga Hills, the Lushai frontier, and other places, so that substantial additions to our knowledge of the Indian flora may be anticipated. The publications of Dr. King and of Dr. Prain have previously been noted in these columns.

THE ROSERY.

WE take the following particulars from the *American Florist*, which has been interviewing Mr. Hugh Dickson. Asked, "What advantage do you claim for budded over own-root stock?" Mr. Dickson replies:—

"Immediate effect. The purchasing public gets from budded stock as much bloom in two years as will repay the whole outlay; whereas with own-root stock, you must wait two years before the plant is any size. You must not confound Roses properly budded low down on Manetti stock with the stuff budded high on the stem, which is sent over here from Holland for auction sales. We exercise great care in the preparation of our stocks. First, we cut the wood into lengths of about 12 inches, and cut out all the eyes from the base up, leaving only three at the top to grow. These are then planted, and after a twelvemonth's growth we lift them, cut off all the rootlets that may be up the stem, also cut back the roots at the base so that they will break away again and become bushy, and plant about 4 inches deep. Then when we come to bud, we scrape out all the soil from around the roots, and bud close down. The following spring, say, in March, after the bud has started, we cut off the top of the stock, and mould the plants up slightly. In this way we often get our Roses not only with the roots of the stock but with own roots as well. If budded stock is planted deep, you are liable and likely to have them doubly rooted. In addition to the hot suns, which are against your Roses in outdoor culture, I find you suffer a great deal more from insect scourges than we do."

"About your hybridising: what are you doing, and what are you aiming for?"

"Well, we know that if we can only strike a yellow Tea of good substance and colour, it will be a ten strike for the American trade alone, so you will understand that this is one thing we are striving hard for. In our early trials, we used *Gloire de Dijon* considerably, but have found since that it is useless as a parent, for no matter what the other parent may be, the *Dijon* blood is most manifest. It may interest you to know that the result of one cross between *Dijon* and *Perle* was a purplish-red. In crossing two Roses of sweetest fragrance, we often in the progeny get a Rose without a vestige of perfume."

"How do you account for this?"

"Don't know how to account for it; and would like to meet the man who can."

"Will you make any exhibit at Chicago next year?"

"Yes; we sent over last February, in compliance with Mr. Thorpe's request, a lot of 1200 Roses, largely our own seedlings."

BOOK NOTICE.

THE CARNATION MANUAL.

MESSRS. CASSELL & Co. have issued for the National Carnation and Picotee Society (Southern Section) a little book dealing with the Carnation in its cultural aspects. Seed-sowing, propagation, and general culture are all treated of, and special sections are devoted to the border Carnations (the most beautiful of all), exhibition Carnations (to which some people would apply exactly the reverse epithet), dressing the Carnation, diseases and pests, and a great variety of miscellaneous but strictly relevant information. The book is edited by Mr. Martin Smith, the President, and Mr. James Douglas, the Secretary; and may be had free by all members of the Society subscribing 10s. The Rev. J. D. Horner furnishes a sympathetic introduction. Mr. Douglas begins at the beginning with seeds and seedlings. Mr. R. Dean follows on with their propagation. Mr. Martin Smith discusses on border Carnations, and Mr. Robinson on Carnations in the flower garden. Mr. Martin Smith also gives a calendar of operations for every month in the year. Mr. Rowan, in speaking of "dressing" the flower, recommends it, by implication at least, as showing the individual types of the flowers. This is exactly what it does not do, in our opinion. It would surely be possible to cater for the ordinary flower-lover on the lines indicated in the present volume by Mr. Burbidge, as well as for the "florist," and to do away with the very un-gardener-like process of "dressing," except under vigorously defined limitations. Let the cultivation be as perfect as we can make it, but let us discard all meretricious procedures as derogatory to the flower, and unworthy of the gardener. However, it is a matter for great thankfulness to have got rid of the paper collar for the pot plants, and this little concession bids us hope that Nature will be allowed to have her own way in other points also. The great development of the culture of the border Carnations, and of the yellow-ground varieties, are also healthy signs. The sections on the tree or winter-flowering Carnations by Messrs. Harry Turner, J. Jennings, and Douglas will be read with great interest. We could wish these gentlemen would discountenance the excessive size now fashionable in Malmaisons. We heartily commend this little volume as containing excellent information for the cultivator, and just that amount of variety in matters of taste and individual fancy which secures even a florist's flower from monotony.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

GLORIOSAS.—Pay regular attention to the training of the young growths of these plants as they extend, and any that have filled their pots with roots should be assisted with weak manure-water occasionally. Plants which started early and are now out of bloom, and that have been standing in a cool house, should be removed to the stove, and the necessary amount of water afforded them, to preserve the foliage fresh as long as possible, afterwards gradually drying off, so as to prepare the bulbs for their resting season.

FLOWERING STOVE PLANTS.—Such plants as Allamandas, Ixoras, Stephanotis, Clerodendrons, &c., can be removed from the stove when in flower, to embellish the conservatory or greenhouse during the next two months, without any risk of the plants being injured. During this season of the year flowering plants are not so plentiful as is generally the case in spring and early summer. Choose the warmest positions for these plants, and avoid draughts as much as possible; and whilst occupying a cooler temperature, the plants will not require so much water at the roots as previously. Give the necessary amount of shade, to prevent the leaves being injured by bright sun.

CONSERVATORY AND GREENHOUSE.—Plants occupying these houses should be re-arranged fre-

quently, and all plants which are past, taken out, which will afford room for fresh supplies from reserve pits of such plants as Mignonette, Heliotrope, zonal Pelargoniums, Fuchsias, Celosias, Gloxinias, tuberous Begonias, Tuberoses, Coleus, with a few Ferns, and small Palms. Regulate the growth of all creepers, and thin out any which are getting too crowded, also be careful to afford plenty of water to the roots, especially during bright weather.

EPHYPHYLLUMS.—The different varieties of the above which bloomed early in the spring, will have completed their growth. The larger-growing varieties may be stood outside on a bed of coal-ashes at the foot of a south wall, securing the shoots to the same, and giving them just sufficient water to keep the growth from shrivelling, which will then become thoroughly matured. Plants which were kept cool to flower late, will now be making their growth; give them a light position in the greenhouse, where they will be fully exposed to the sun, and they may have sufficient water at the roots to keep them growing freely, until this is completed, afterwards keep them dry at the roots, to thoroughly ripen the wood.

Epiphyllum truncatum.—This section will have completed their growth, and the shoots will be plump and firm; place them in a sunny position in the open, either on boards or coal-ashes, if the weather keeps bright and sunny, but failing this the most suitable place for them would be a cold frame or pit. Remove the lights altogether when the weather is bright.

FORESTRY.

By J. B. WEBSTER, Fairview, Stangmore, Dungeness.

SEASONABLE WORK FOR AUGUST.—This is the best time to sort and prune young hard-wooded trees generally, but more especially the kinds that are apt to bleed at the wounds where branches have been cut off at an earlier period of the season, as the wounds inflicted at present will soon cicatrise and heal up without any injurious effect. Trees that have been well managed in the early stages of their growth seldom require much pruning in after years, so that this operation is reduced to the removal of double leaders at the top, and to cutting back rambling side branches in order to form a well-balanced top, and lessen the risk of fracture by wind. The removal of large branches is not to be recommended, but in cases where it becomes desirable, the surface of the wound had better be made smooth with a sharp knife, and then coated over with paint the same colour as the bark of the tree. This will not only improve the appearance, but likewise promote the healing processes, and prevent the lodgment of water to lay the foundation for rot and decay. I need hardly say that wounds of all sizes should have a smooth sloping surface, and in the removal of superfluous leaders at the top, the pruning chisel attached to a shaft is a very suitable implement, as it makes a clean sloping wound which soon heals up. Young trees that have been cut over or damaged by hares and rabbits are now producing several suckers from the base of the stem; these should be cut over, leaving the best and most centred to form the stem of the future tree.

Hedges of all shapes and sizes should now be pruned, to keep them in proper shape, and promote the formation of a close, durable, and efficient fence. I have had this work done for many years by contract, at an average rate of from 1d. to 1½d. per perch of 5½ lineal yards. In the hands of a practised workman the hedge-knife or switcher is the most efficient tool. Young hedges should have all weeds removed at the same time, and the surface broken up, to admit air and promote the growth of the plants. When the trees are in full leaf, advantage should be taken of this to mark such as it is desirable to remove in autumn to open up vistas here and there to improve woodland scenery. This sort of work should be thoroughly studied from different points of view on the principal roads and drives, and in some cases from the windows of the mansion before the axe is laid to the root of a single tree, otherwise mistakes might occur which will take an ordinary lifetime to see them rectified. This is also a proper time to mark off the sites for standard ornamental trees to be planted here and there for the embellishment of the park or lawn. The spots should be well trenched and broken up before planting, and in cases where the soil is of a poor, thin character, a little extra soil should be added to improve its texture and give the trees a good start. In the execution of this sort of work the planter should be well acquainted with the probable size, contour, and tints

of foliage, which the different species of trees exhibit to view after they become established, by which means he will be enabled to plant them in such a way as to show contrast and variety. In cases where it is desirable to plant groups of ornamental trees, plants of an average size should be planted at a distance of about 35 feet. The space between these trees may be planted with trees and shrubs to form a covert, but in after years they must be thinned out as the circumstances of the case may direct. In the formation of these plantations care should be taken not to plant any of the trees in too close proximity to the sides of walks, drives, or roads, where they may prove too large for the situation. Trench and prepare the ground to be planted with Evergreens in early autumn both for ornament and covert; also a piece of ground of a sandy texture, on a northern exposure, to be planted with cuttings of Laurels, Yew, Box, Privet, and other kinds of Evergreens usually propagated in that way. These may be inserted about the end of the month or beginning of September. When the haws of the White Thorn exhibit a brown-russet colour, they may be gathered and sown at once on rich soil formed into beds 4 feet wide. One bushel of seed is sufficient to sow 20 lineal yards of a bed the above size. The haws should be sown in an even and uniform manner, and pressed down on the surface with the back of a spade or light roller, and covered with about half-an-inch in depth of fine soil. When treated in this way the plant generally appears above-ground next season, by which means there is a saving of time and expense, as compared with keeping the haws over a twelvemonth in rot-heaps. The berries of the Mountain Ash, Holly, Hawthorn, &c., that were gathered last year, and are at present in the rot-heap, should be turned to promote the even and uniform decomposition of the rind. Finish the budding of ornamental trees, and loosen the ties used to secure buds that were inserted last month where requisite. Examine, untie, and sort grafts as the circumstances of the case may suggest. Rub off superfluous buds and growths in order to direct the whole energy of the plant to the formation of wood in the scion. In damp cloudy weather, Evergreens may be transplanted about the end of the month; the natural heat in the ground at that season promotes the formation of fresh fibres, so that the plants become established in the ground by the approach of winter. In places where the ground consists principally of hard inorganic material, it is a good plan to mix a little bog-earth or leaf-mould with the soil where the plants are to be inserted.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

STRAWBERRIES.—Any plants still unpotted should be taken in hand as early as possible; good growth and well-ripened crowns will then be obtained in autumn. Stand the pots close together, in order that one may shade the other from the sun's influence; and, as growth advances, the plants are able to protect their own pots, they may be stood well apart, that air can have free play among the foliage.

MELONS.—The latest batch of Melons are now showing female flowers, and their fertilisation should be attended to daily. At this stage keep the atmosphere of the houses or pits a little dryer, and admit a little air by the bottom ventilators, but as soon as a set is secured, give a good surfacing to the root-medium, well saturate the whole with liquid-manure, and again maintain a moist air within the structure. Plants carrying fruits that are now swelling may be liberally fed, and unnecessary growths should be suppressed by rubbing them off whenever they appear in the axils of the leaves. After a few days of dull weather, afford abundance of moisture to the roots and stems of the plants when bright sunny days return. Melons ripening should have abundance of air admitted to them on all favourable occasions, and as little water as possible should be used in the house if the varieties are subject to cracking. A high temperature and a moisture-laden atmosphere favour this evil, and the practice of shutting up the house early in the afternoon with a view of husbanding sun-heat must give place to that of reducing the air by degrees. In cases where insect pests necessitate the use of the syringe on these plants, early morning ought to be chosen for such work, and an effort be made to get the foliage dry before the day is far advanced.

SAVING SEED.—Always select seed from the best fruit, avoiding all of bad form or small size. It is

also desirable to know if the fertilisation has been effected by flowers of the same variety, as carelessness in this matter not unfrequently proves a source of disappointment the following year. The seeds should be washed in water, and all those that float on the surface, and all the pulpy matter, should be thrown away, only retaining those that sink. These may be dried and put in packets, legibly labelled and dated, and then placed in the seed-room for future use.

THE APIARY.

By EXPERT.

CLEARING UP.—Except in Heather districts, the season of 1892 has come to an end. Sections remaining on the hives should be removed at as early a date as possible, and those that are not completed, passed through the extractor. They may then be given back to the bees to clear out any remaining honey, after which they can be put away for another year. The sooner all extracting is completed the better, as a little later, after the nights begin to get cold, the honey thickens so much that it does not leave the combs properly. The best time of day now to remove honey from the hives, or to perform any manipulation, is in the evening, and great care should be taken not to leave any sweets about, or robbing will be started; and this, when once begun, is difficult to suppress, besides the danger of exciting the bees so much that they become a nuisance to neighbours and others. Should robbing be inadvertently started, a free use of the carbolic solution is the best remedy, and this should be sprinkled on the alighting boards, or a cloth saturated with it be hung over the hive entrances. The carbolic cloth is far more useful than the smoker at this season, and beekeepers who get into the way of using the former will rarely want the latter at any time.

RESULTS OF THE SEASON.—The season appears to have been a disastrous one, judging from reports in Scotland, and as far south as Yorkshire the weather has been so unpropitious that bees have had to be kept alive by artificial feeding at the time when honey should have been freely collected. Good takes have been the rule in Kent, Essex, &c., and the quality of the honey has been all that could be desired.

A NEW SEPARATOR.—A year or two back the writer discovered, quite by accident, that more perfect sections could be produced by the use of separators made of ordinary perforated zinc, and many inquiries were instituted amongst leading beekeepers as to whether any one had previously tried or experimented in this direction, but with a negative result. This year has proved conclusively that where perforated zinc has been used, a marked difference can be observed in the sections. They have been invariably better filled, and more completely capped, and the apparent reason is that the bees are better able to maintain the necessary heat when they are wax building at the edges of the sections, as they are able to form a cluster there almost as well as if a separator was non-existent.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

RAISING PLANTS FOR SPRING FLOWERING.—This is a suitable time for sowing seeds of *Saponaria calabrica*, *Candytufts*, *Silene pendula*, including *S. p. compacta*, *Linaria bipartita*, *Eschscholtzia*, *Limnantes Douglasii*, *Godetia* in variety, *Nemophilas*, and *Sauvitalia procumbens*. Sow the seeds of these various plants thinly in drills of about half an inch deep and 6 inches apart on nicely prepared beds, afterwards treading the drills and raking the ground level. A south or west border is the best place for the beds, and by sowing thinly, no after-thinning of the seedlings will be needed. The beds of *Daisies*, *Wallflowers*, *Pansies*, *Primroses*, *Myosotis*, &c., in the reserve garden should be weeded and watered when necessary, and should the stock of *Pansies* and *Violas* be less than the requirements, it may yet be increased by division. *Violas* are not only useful and showy spring flowers, but they are just as effective in summer. We employ *Golden Gem* and *Blue Perfection Violas* with excellent effect, mixed with *Bijou*, *Manglei variegatum* and golden-bronze *Pelargoniums*. When the *Pelargoniums* are cleared away, these *Violas* remain, and make a fairly good display during the later autumn months and in early winter, which increases in beauty as the spring approaches. The tuberous-rooted *Begonia* increases in popularity as a summer bedding plant,

and by saving seed from the finest flowers every year, sowing it early in January, and growing the plants on, and again weeding-out the least handsome flowers, a good strain is secured. Plants of two and three years old which produce fine masses of foliage and flowers, the latter having broad stout petals, should be selected as the seed-parents. The double-flowered varieties also gain in favour as bedders and pot-plants. They are even better wet-weather flowers than the singles. Planted either in mixed or separate colours in beds ranging in size from 3 feet to 10 feet in diameter, the effect is very telling and in every way satisfactory.

PROPAGATION.—There are now plenty of *Pelargonium* cuttings to be had, and propagation should be completed as soon as possible, that is, when it can be done without interfering with the desired shape and beauty of the beds. The cuttings should have two or three joints, and be cut square across a little below the bottom one; they will do very well if dibbled into shallow boxes, filled with light mould, and having a surfacing of silver sand. Put in the cuttings about 2 inches apart, making the soil firm about them; water through a rosed-can, and then place the boxes in a dry situation and fully exposed to the sun, on strips of board, slate, &c., to keep them off the ground. Sprinkle them lightly in the afternoon of each day when it has been bright and warm. The boxes should be made the same size for the convenience of storing and economising house space—say 2 feet long, 9 inches wide, and 4 inches deep (inside measurement), and they should be provided with five or six half-inch circular holes in the bottom for drainage, these being covered with a few pieces of potsherds, followed by a handful or two of half-rotted leaves before filling them with soil. Cuttings of *Lobelia*, *Verbena*, *Alternanthera*, *Mesembryanthemum*, *Heliotrope*, *Ageratum*, and *Salvia*, dibbled into 6 or $\frac{1}{2}$ -inch pots, filled as recommended above, watered, and then stood on sifted coal-ashes in a frame or pit near to the glass, affording shade during the heat of the day, will soon form roots. The shading may then be dispensed with, and an increase in the admission of fresh air be gradually made to insure a sturdy consolidated growth in the plants, without which these "stock" plants, i.e., plants from which the necessary stock of the kinds indicated, as well as their several varieties, for filling the flower-beds and borders the following May and June, are to be propagated next February, March, and April.

GENERAL WORK.—This will consist in mowing, and cutting the grass verges with shears, and brushing up same, weeding and rolling of walks, trimming of hedges, and the cutting into shape with the knife *Evergreens* of various kinds requiring attention in this direction.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syn House, Brentford.

ASPARAGUS.—This vegetable is frequently overlooked after the summer cutting ceases, but to get large growths it is necessary to assist the roots in dry hot weather so that there is no premature ripening of growth. On dry light soils irrigation is most beneficial, and if a dressing of fish manure or salt is given previously to applying the moisture, it will help them considerably to yield a greater weight of grass next season. Where it is required to force beds in their permanent quarters, no time should be lost in giving this assistance; and if the beds are raised or made up for forcing, more moisture will be necessary. A good dressing of cow manure placed on the surface will do much good on light sandy soils, especially to beds cut very late.

SEAKALE should receive attention in the way of feeding on dry soils, giving salt or fish manure, and a good flooding with a hose when possible, removing the flower stalks as they appear, and restricting the growth to one strong crown. This plant luxuriates in good loam with a cool bottom, therefore on sandy soil it requires much moisture. Dressings of soot and salt will do much good, also frequent supplies of liquid manure.

CELERIAC requires similar attention in the way of moisture and feeding, and the suckers should be removed when they form round the roots, so as to throw all the strength into the main root.

CARDOONS also require plenty of water to secure a large succulent growth by the autumn, and the tops a few loose ties to prevent the wind breaking them.

CELERY.—No time should be lost in getting the latest crop planted out, and if the seed was sown very thin, as advised, transplanting will be an easy matter; the plants being sturdy will lift readily, and not flag during the operation. The trenches should be well prepared previous to planting, and the soil well saturated the day before. Deep trenches are not necessary for the latest crop; good land, well drilled, will be quite sufficient. The earlier-planted lot will now require abundant supplies of moisture, but I should not advise earthing-up too soon. If required early in the season, a small quantity of earth should be placed around the roots of early rows to give the first supplies, as when a large body of soil is placed around the stems too soon, it smothers the tender growth, and often causes decay. A free growth, well matured with liberal waterings and supplies of liquid or fish manure, will be better than premature earthing up. This latter work is readily done later, when a robust growth has been secured.

TOMATOS.—Frequent stopping and thinning of the shoots will now be necessary to encourage the swelling of the fruits, and to admit all the sun and light, endeavouring to get as much fruit set as possible during the early part of the month. Any set after that period may not have time to mature. If planted in shallow borders, more feeding and moisture will be necessary; but, unless the root space is restricted, manures given in quantity cause too much leaf growth. Plants against walls should have close attention in watering and nailing, restricting the growth to a few leading shoots. The cordon system is, perhaps, the best. Cuttings struck now from healthy plants will come in useful for early crops next spring. They strike readily in a light compost if taken off with a heel.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereuorth Castle, Maidstone.

ORCHARDS.—Only quite recently I have had the opportunity of seeing some scores of acres of fruit plantations, and although at one time the crop of Apples seemed somewhat disheartening, there is more fruit than we at that time anticipated. The trees are greatly in need of a thorough soaking of water, the soil about the roots being very dry. Where the trees are bearing heavy crops, and the fruits are of marketable size, no time should be lost in thinning the number; the rest of the crop left to mature will then be of better size, and the trees also able to form buds sufficiently strong for the production of a satisfactory crop next year. Mulching and watering with liquid manure should not be neglected. Large trees of *Blenheim Orange* are bearing good crops, and of the younger trees, *Worcester Pearmain*, *Manks' Codlin*, *Lord Grosvenor*, *Lord Derby*, *Old Nonsuch*, *Yorkshire Beauty*, *King of the Pippin*, *Knobs*, &c., are also bearing satisfactorily. Young trees planted late in spring must be watered, especially on light soils, and on soils which have a tendency for cracking, for if not kept fairly moist, the leaves will drop prematurely. Soil that has been baked hard with sunshine following a heavy rain, should be slightly loosened with a fork previous to applying water, after which cover up with dry soil, or mulch with manure, grass from mowing-machines, or any thing at hand to preserve moisture at the roots.

NUTS.—From these bushes all suckers should be removed forthwith, and the young shoots shortened back to within 8 inches of the base. Keep an eye on all young trees, preserving such shoots as may be required for the formation of the future bush, which should be that of the vase shape. Do not allow any weeds to remain, but keep the hoe constantly in use.

STRAWBERRY PLANTS.—Lose no time in planting-out any young plants that are expected to fruit next year. See that the balls of soil are thoroughly moistened previous to turning them out of the pots, slightly disentangle the side roots with a pointed stick should they have got pot-bound, and plant very firmly on deeply worked soil of good tilth and heart. In making new plantations, they may be put at 1 foot apart from plant to plant in the rows, every alternate one to be removed after the first year's fruiting. All the plants should be well matured after the planting is finished, so as to settle the soil about the roots. Self-rooted runners between the rows may be lifted with care and planted in nursery beds at 10 inches apart, to be removed to their allotted quarters next spring, but these will not fruit well the first year; consequently, the weak flower-spikes should be removed as they appear, the plants will then build up good crowns, and fruit heavily the following season.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the **Editor, 41, Wellington Street, Covent Garden, London.** Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see. Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

WEDNESDAY, AUG. 17. { Shrewsbury Great Floral Fête (two days).
Cardiff Horticultural (two days).
THURSDAY, AUG. 18. { Ladywell and District Horticultural (three days).
Aberdeen Horticultural (three days).
FRIDAY, AUG. 19—Devon and Exeter Horticultural.
SATURDAY, AUG. 20. { National Co-operative at the Crystal Palace.

MEETING.

THURSDAY, AUG. 18. { Brighton and Hove Chrysanthemum Society.

SALE.

FRIDAY, AUG. 19. { Orchids from Mr. F. Sander, at Protheroe & Morris' Rooms, at 12.30.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—62° F.

Royal Horticultural Society.

THE ordinary Tuesday meeting was of the customary interesting character, though, as was natural at this season, somewhat less extensive and less well attended than usual. In another column we give a full report of the meeting, but here we may note the excellent way in which Mr. CANNELL set up his Begonias, a lesson which we hope rosarians and florist flower exhibitors generally, will duly take to heart. As Mr. CANNELL showed his flowers, it cannot be said that comparison between one flower and another was at all more difficult than when flowers are throttled on a board. Mr. WATERER'S *Lilium Parkmanni* × has not been seen for many years, but as now seen it hardly redeems its earlier promise. Mr. WYTHES' exhibit of *Campanula pyramidalis* surrounded by dwafers growing varieties of the same genus was very beautiful. Orchids were numerous, interesting, and beautiful. Among them was a remarkable deep violet-coloured *Calanthe* from New Guinea, shown by Messrs. SANDER & Co., quite different from anything of the kind in cultivation, and one whose merits Orchid growers will be sure to appreciate shortly, though the critics were unaccountably chary in their approbation on this occasion. Mr. FARNHAM showed a hybrid *Sarracenia* between *S. Drummondii* and *S. rubra*, of a very rich crimson, tessellated with white. Figs in great variety, from the Society's garden; Peas and Peaches, Melons and Marrows, were among the exhibits. The paper at the 3 o'clock meeting was from the pen of a veteran *Fuchsia* grower—one conversant with the *Fuchsia* as it was in the first quarter of the century, and one who has taken no small share in making the *Fuchsia* what it now is. It was a strange oversight, therefore, that not a species nor a variety of *Fuchsia* was shown, if we except a few specimen illustrations shown in illustration of the lecture, and thus an opportunity of attracting great interest on the part of the public, and of affording a most useful object-lesson alike to the cultivator and to the naturalist, was lost.

A Silver Wedding.

A SILVER WEDDING is an event of so private—we might almost say so sacred—a character, that to speak of it *coram publico* is in general a desecration. There are, however, occasions when the public may rightly be taken into confidence, and where the position of the parties chiefly interested is such, that the public will not be denied from expressing their feelings, and adding their congratulations to those of the family circle. Mr. and Mrs. HARRY VEITCH find themselves in that position. We can well believe that they would have preferred that the event should have been celebrated in the purely domestic fashion, which under ordinary circumstances, English folk prefer. If we feel some hesitation on the score of intrusion into domestic affairs, there are circumstances which have forced us to overcome it in the general interests of horticulture. The name of VEITCH has become a household word, not only in its strict significance, but in the wider world of horticulture, and hence it is that we feel we need not offer any apology for intruding what would otherwise be a private matter upon the notice of our readers. The employés of the firm, the gardeners of the United Kingdom, business friends, the committee of the Gardeners' Royal Benevolent Institution, representative Belgian and French committees, and various local religious and charitable societies availed themselves of the opportunity of testifying their regard by the presentation of gifts, more to be appreciated for the sentiment they convey than for their intrinsic value. There is another circumstance that compels the Press to take note of the occasion; at any rate, the Press would not be doing its duty if it did not express the thankfulness of its constituents at the nobly appropriate way in which Mr. and Mrs. HARRY VEITCH have themselves commemorated the occasion. A thanksgiving donation on their parts of £500 to the Gardeners' Royal Benevolent Institution, of a like sum to the Gardeners' Orphan Fund, and of £100 to the United Horticultural Benefit and Provident Society, forms a remembrance of a most enduring character.

The respect and good feeling of horticulturists will doubtless be appreciated at their proper value, but the consciousness of good done to the helpless orphans and infirm gardeners will, we are sure, constitute a yet greater source of satisfaction to the donors. We can but wish that they may be permitted to celebrate their golden jubilee with the like pleasing ceremonial!

Buddleia Colvillei.—For the specimen whence our illustration was taken (fig. 32), we are indebted to Mr. W. E. GUMBLETON, in whose interesting garden at Belgrove, Queenstown, the plant lately flowered. Mr. GUMBLETON, a critical judge, speaks in no measured terms of its beauty. The shrub is a native of Sikkim Himalaya, at elevations of 9000 to 12,000 feet, and is figured in Sir JOSEPH HOOKER'S *Illustrations of Himalayan plants*, t. 18 (1855). Mr. GUMBLETON'S plant is much less like an *Escallonia* than is the representation above cited, based on Sir JOSEPH'S drawing of the native plant. The form is slightly different, and the colour is less distinctly crimson. When young, the leaves are covered with rust-coloured down on the under-surface. The plant is also described by Mr. C. B. CLARKE in HOOKER'S *Flora of British India*, vol. iv. (1885), p. 81.

GARDENERS' ORPHAN FUND AND GARDENERS' BENEVOLENT INSTITUTION.—Through the kindness of Mr. and Mrs. JNO. FIELDEN, the gardens and

grounds at Grimston Park, Tadcaster, will be open to the public at a charge of 1s. each on Wednesday, August 17, 1892; the proceeds to go to these two deserving societies. An interesting cricket match has been arranged, and a good band will attend. Donations and subscriptions to the above funds will be gladly received by E. HARRISON, Esq., The Croft, Kirkly Wharfe, Hon. Treasurer, or by Mr. H. J. CLAYTON, gardener at Grimston, Hon. local Sec.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We have much pleasure in announcing that the Right Hon. Lord BRASSEY, K.C.B., has consented to preside at the fifty-third anniversary festival of this important charity. The dinner, which was unavoidably postponed, owing to the lamented death of Lady GOLDSMID, will take place at the Hôtel Métropole on a date to be fixed in November next. Gentlemen who are interested in the welfare and progress of the Institution are invited to act as stewards on the occasion, and should communicate with the Secretary, GEORGE J. INGRAM, at 50, Parliament Street, London, S.W., who will gladly respond to any inquiries that may be addressed to him. We have also to announce that Mr. ARTHUR VEITCH has been elected a member of the committee in the place of Mr. JOHN FRASER, who is retiring after many years of zealous service for the Institution.

HOLLINWOOD BOTANISTS' GARDEN.—The *Journal of the Oldham Microscopical Society and Field Club* contains, according to the *Oldham Standard*, an interesting account of a recent visit the members paid to the Botanists' Garden, Hollinwood. The visit was paid for the purpose of seeing what had been accomplished by the botanists of that district during the last half-dozen years in the way of cultivating British wild plants. The report states the garden possesses an individuality of its own, and in it are to be recognised forms that the visitors had only met with occasionally in their country rambles, or that they scanned with half-hearted interest in various herbariums. It was observed that the Hollinwood botanists had begun a good piece of work in arranging their plants according to the natural system, in separate beds.

FLORAL FETE AT ABERDEEN.—A floral fete was held in Duthie Park, Aberdeen, on the 6th inst. Since last year the Northern Horticultural Association disagreed as to the propriety of introducing cavalry sports as an adjunct of the flower show annually held under their auspices, with the result that two shows are being held this year. The floral and fruit exhibits were shown yesterday in two large marquees. The principal exhibitors were Messrs. Cocker, whose stand was covered with specimens of herbaceous plants; Messrs. Ben Reid & Co., Mr. J. Dalgarno, Damside Cottage; Mr. Blake, Cults; and Mr. Harper, of the Duthie Park. The judges in the floral department were Mr. Mackie, gardener, Rosehaugh, Inverness; Mr. Fairgrieve, gardener, Dunkeld; Mr. Whitten, gardener, Glamis Castle; and Mr. Fulton, gardener, Balmedie.

SCIENCE IN A SURPLICE.—Under this heading, the *Morning Leader* gives a notice of a flower sermon—address, rather—delivered at the invitation of the Vicar of a church in Ipswich, by Dr. J. E. TAYLOR, the well-known Curator of the museum in that city. In the case of Dr. TAYLOR, we may be sure that accuracy was not sacrificed for sentiment. Dr. TAYLOR reminded his audience that 400 years ago the Bible was not accessible to the common people, who then derived much of their religious teaching from the flowers of the field. We remember to have heard one of the best popular lectures we ever heard in the parish church at Folkestone. It was delivered from the pulpit by the Vicar, at the close of the evening service. The subject on that occasion was the structure of the eye.

FURCRAEA ALIAS FOURCROYA.—In the August number of the *Botanical Magazine*, Mr. J. G. BAKER gives the following account of the genus



FIG. 32.—BUDDLEIA COLVILLEI: FLOWERS, PALE PURPLE; CALYX, PURPLE-BROWN. (HORT. GUMBLETON)
(SEE P. 186)

Furcraea:—"These Furcraeas have excited a great deal of attention lately as fibre-yielding plants. It is quite evident that the species which is best worth cultivating for economic purposes is *F. gigantea* (*Botanical Magazine*, tab. 2250). In the present plant (*F. pubescens*) the leaves are much shorter, and the texture is not nearly so firm. One great difficulty in describing and ascertaining the limits of the species, arises from their putting on such a different character when they are cultivated in English conservatories, and when they are grown in the open, either in their native home in America, or in gardens on the shores of the Mediterranean. Last November and December I paid a visit to the Riviera to study in their full development the species which are grown in Mr. THOMAS HANBURY'S garden at La Mortola, in the Jardin d'Acclimatation at Hyères, and in the other gardens in that region. A full report on this subject will be found in the number for January, 1892, of the *Kew Bulletin*."

PRESENTATION TO MR. W. SWAN.—On Saturday, August 6, a time-piece in an elaborately-worked Walnut case, was presented to Mr. W. SWAN, gardener at Castle Hill, Englefield Green, by the men employed in the garden, as a token of respect and esteem, on his retiring from the charge of the gardens. Mr. SWAN has lately been appointed gardener to J. P. BRYCE, Esq., Bystock, Exmouth, Devon, to which place he immediately removes.

BEDDING AT KEW.—*Pelargonium King of the Bedders*, as seen at Kew recently, seems to be a formidable rival to *Henry Jacoby*, the flowers being of a brighter hue. A bed of this edged with a white-flowering *Viola* (probably *Snowflake*), forms an effective arrangement.

BEDDING IN PARK LANE, HYDE PARK.—Some fine beds planted in the mixed style are now very effective, and Mr. W. BROWNE, the Park Superintendent, is to be congratulated on the success that has been achieved in this direction. For instance, a bed of *Fuchsias*, mixed amongst which are flowering *Petunias*, produces a beautiful effect. Another bed of *Heliotrope President Garfield*, plants some 4 to 5 feet high, associated with *Carnations* and other flowers, forms a tasteful arrangement. *Fuchsias* planted out in groups of three quite deserve a note. The plants are flowering well, evidently being quite at home. The varieties are *Mrs. Rundell*, *Mrs. Marshall*, and *Miss Lucy Finnis*. *Clematises*, too, planted out, are doing and flowering well. *Fuchsias Meteor* and *Cloth of Gold* are effectively employed as edging plants in several of the beds. Speaking of edging plants, it is worth noting that *Viola Snowflake* is doing well; and amongst the *Lobelias* employed for the same purpose may be mentioned *Emperor William*, *Earl of Beaconsfield*, and *Blue King*. *Henry Jacoby Pelargonium* appears to be king amongst the scarlets. Several beds of seedling *Begonias* are flowering well, and as seen thus massed produced a good effect. The colours principally employed are salmons and scarlets. Evidently there is a great future before the *Begonia* as a bedder.

THE USE AND ABUSE OF FLOWER SHOWS—We have so often lamented the waste of opportunity, and the loss of power, manifest in the average horticultural show, that we are glad to find someone else is of the same opinion. We take what follows from the *Agricultural Economist*:—"The annual recurrence of these horticultural exhibitions awakens in us somewhat of surprise, and almost disgust, that the splendid opportunity they afford of being something more than mere trivial frittering gatherings is not attempted. Take the average show. There are hothouse plants from the big guns of the district, then there are the impossible *Dahlias* and the Specimen *Roses* from the nurserymen, and some wishy-washy blooms in the flower-tent from amateurs. In the vegetables are abnormally perfect collections of vegetable, symmetry undeniable, place of growth a mystery, name of grower—well, nominal! In the amateur classes of vegetables, too, as well as the open classes, year after year, the same old names, and

little or no new blood. Classes literally farmed do not encourage gardening. Turning to the fruit. The 'Earl of this,' and 'Lord that,' with wealthy commoners, show the multitude glorious hothouse fruit; but, turning to the display of garden fruit by the 'hoi polloi,' what is found? Currants, Raspberries, Strawberries, perhaps Plums, baking Apples, but the eating Apples in July and August, where? This may or may not be exaggeration, but, at any rate, the interest in gardening is not omnivorous that requires Guards' bands, foolhardy balloonists, and distorted topay-turvyists, to attract people. Yet shows need not be all dull or uninviting, if amusement is joined with instruction, nor need Jack be made a dull boy. Is it at all flattering to our directors in things horticultural, that an Englishman in July requiring an eating Apple cannot buy an English one, and must pay their weight in copper for foreign ones? It is not all climate that does this. There are English Apples that will keep, but there are few who know how to keep them. Here, then, let floral committees take one item, and give a demonstration in storing and packing. Grafting, pruning, thinning, sowing, transplanting, selecting seed, judging ripeness, all could be shown the same way without the dryness of a formal 'lecture,' a word that itself drives away many. There is no reason why these demonstrations should not go on continuously at all flower-shows, and there is less reason why they should not be as attractive as the dairying demonstrations that are so general now in our agricultural showyards. The flower show is the place *par excellence*, for instance, for vegetable and fruit growers to meet and discuss some means of overcoming the difficulty of placing their products on the market. At such a meeting, schemes of co-operative distribution might be devised, and the middleman fought with his own weapon—that of association with his fellows; whilst even the supercilious railway company might be brought to terms. To some extent the Staffordshire County Council are setting a good example. They have had a lecturer on cottage gardening and gardening for profit, traversing the country during the early part of the year, and it is to be noted that he is now visiting the flower shows, and giving his verbal instruction at these entertainments. The less of a lecture, and the more of an object-lesson the better, for grown-up folks are like children, and grasp the abstract better from the concrete. Certainly more use could be made of flower shows than is made at present. A subject for discussion at one of the *al fresco* horticultural parliaments might take the following form:—If the net return to the grower of 2 tons of Cabbages sent from Lincolnshire to Covent Garden is 11*d.*, what is the price of a Cabbage in Wellington Street, Strand?"

HORSE CHESTNUT.—Lieut.-Col. ONSLOW obliges us with a photograph of a fine Horse Chestnut, growing on the lawn at Old Alresford House, Hants, the property of W. W. BULFETT, Esq. The circumference of the branches is 234 feet, the height is estimated at 100 feet. When in full bloom the tree presents a magnificent spectacle. The tree was planted in or about 1733, by Admiral RODNEY, so that the tree is approximately 163 years old. On the lawn close by is a cannon taken from the French on the occasion of the Admiral's victory over the French Fleet in 1783.

"THE BRITISH MOSS FLORA."—The fourteenth part has been issued, and bears evidence of as much patient skill and judgment as preceding parts. Dr. BRAITHWAITE's work is indispensable to all students of Mosses. It is published by the author at 303, Clapham Road.

ROYAL COLLEGE OF SCIENCE.—Mr. J. BRET-LAND FARMER, Demonstrator of Botany in the University of Oxford, has been appointed Assistant-Professor at South Kensington, in place of Dr. SCOTT, who takes charge of the Jodrell Laboratory at Kew as Honorary Keeper.

CALOCHORTI.—Mr. C. G. VAN TUBERGEN contributes to the *Garden* an interesting paper on the cultivation of these lovely bulbs. A southern

aspect, light sandy soil, and enriched with well-rotted cow-manure, are recommended. The bulbs should be planted in September, left in the ground all the winter, covered with a layer of straw or bracken. When flowering time comes, protection against rain or wind should be afforded.

AMATEURS, SMALL AND LARGE.—The amended schedule of the National Rose Society, whereby small amateurs were placed in a more favourable position, and consequently allowed a fairer chance in their competitions, has worked well, in spite of the predictions of many of the old stagers, and will probably be continued in future.

UPLAND CRESS.—Under this name, Messrs. CARTER & Co. are cultivating as a salad-plant a British wild plant, common around London, and known to botanists as *Barbarea vulgaris*. A near ally, *B. præcox*, is used in France for a like purpose; indeed, it is sometimes grown here as "American Cress."

HEBENSTREITIA COMOSA VAR. SERRATIFOLIA.—Messrs. DAMMANN, of San Giovanni a Teduccio, Italy, remind us that this plant, mentioned at p. 34 of the present volume, was introduced by them in 1889, in which year it was announced in their catalogue.

GARDENERS' RELIEF FUND.—The Torquay Rose-days were again a success this year, being held in very fine weather at Messrs. CURTIS, SANFORD & Co.'s Devon Rosery Nursery, on June 29 and 30; they realised the sum of nearly £50 on behalf of the local Gardeners' Relief Fund. The late show was the fifth held on behalf of this Fund, for giving temporary relief to gardeners and their widows in times of sickness or distress; and since 1888 there has been a total amount collected by the means of these Rose-days of £270, and nearly £200 has been distributed locally by the committee in aid of gardeners in ill-health or who are unable to work, and to the widows of gardeners, affording temporary relief at a time when a little help is useful.

BOEHMERIA NIVEA.—The British Consul at Cadiz, reporting to the Foreign Office on the trade and commerce of the district for 1891, refers to some land that has been secured by the Ramie Syndicate situated on the island Amalia, some 20 miles down the River Guadalquivir. He says a year ago some 15 acres of land were planted with *Boehmeria nivea*, and at the present moment 85 acres more are undergoing plantation. It is stated that the company has been formed in London with the object of testing the capability of the soil on the island for the cultivation of this plant, and if it proves successful that a large company will be formed, and several thousands of acres purchased for carrying on the plantation on a large scale. It is stated that to all appearances the plant grows splendidly, and as it is supposed that the difficulty in decortication has at last been solved, it is quite possible that at no distant date Ramie may be grown largely all along the banks of the Guadalquivir, where it is easy of irrigation.

GRAFTING.—In the *Comptes Rendus* for May 30, we find a paper by M. LUCIEN DANIEL on the grafting of Crucifers. In a previous communication the author had shown how readily root-grafting might be accomplished in herbaceous plants, whatever the nature of the tissues brought into contact, provided always that they were living. Pursuing his researches, he endeavoured to ascertain by direct experiment, what would happen if vigorous scions were implanted on feeble stocks, and *vice versa*, annual plants upon perennial plants, plants flowering at one season on those blooming at another. He thus sums up the results of his experiments:—1st. In certain Crucifers the graft influences the stock either by imparting to it some of its own vigour, if this graft belongs to a stronger species than the stock, as Cabbage on Alliaria, or on the contrary, by impeding the normal development if the graft is taken from a less vigorous species than the stock. (Alliaria, Wallflower, Alyssum, *Barbarea intermedia*, Brassica, Cheiranthus on Cabbage.)

2nd. In grafting one perennial Crucifer upon another, or upon a biennial, in the first or second year of its development, the fruiting time of the graft does not appear to be modified. This is also the case with a biennial Crucifer in the second year of its growth when grafted on a Crucifer perennial, or otherwise. 3rd. Flowering branches when commencing growth can be very easily grafted on roots. 4th. It is easy to graft successfully roots bearing tufts of leaves on stems which serve as the stock; thus grafting the descending system (root) on the ascending system (stem).

GARDENING IN HOMER'S EPICS.—We quote the following passage from Miss CLERKE's recently-published and highly-interesting *Familiar Studies in Homer*:—"The slenderness of HOMER's acquaintance with the finer kinds of bloom introduced gradually from the East is apparent from his seeming ignorance of their ravishing perfumes, no less than from the inadequacy of his hints as to their beauty of form and colour. His love of flowers was in the instinctive stage; it had not come to the maturity of self-consciousness. They obtained recognition from him neither as symbols of feeling nor as accessories to enjoyment. NAUSICAA wove no garlands; the cultivation of flowers in the gardens of ALCINOUS is left doubtful; LAERTES pruned his Pear trees and dug round his Vines, but reared for his solace not so much as a Poppy. No display of living jewellery aided the seductions of CIRCE's island; CALYPSO was content to plant the unpretending Violet; APHRODITE herself was without a floral badge. Floral decorations of every kind were equally unthought of. Flowers, in fact, had not yet been brought within the sphere of human sentiment; they had not yet acquired significance as emblems of human passion; they had not yet been made partners with humanity in the sorrows of death, and the transient pleasures of a troubled and ephemeral existence."

GODMANCHESTER HORTICULTURAL SOCIETY.—The annual show was held on Bank Holiday, in the Corpus Christi grounds. In the open classes, several excellent groups of plants, arranged for effect, were set up, that from the Earl of SANDWICH (gr., Mr. MYERS) being 1st; H. GILLIATT, Esq. (gr., Mr. STEVENS), being a good 2nd. The table decorations were pretty, and the competition very keen. Grapes might have been more extensively used in their arrangement. Some pretty baskets of flowers were shown, but the hand-bouquets were too closely arranged. Good collections of vegetables and fruit were exhibited. In the cottagers' and amateurs' classes the exhibits of hardy fruits and vegetables were good in number, and of excellent quality. Prizes were awarded for the best specimens of window gardening; and marked improvement has taken place in the windows of many in the neighbourhood since the introduction of these classes. Aquatic sports were held in the River Ouse adjoining the show grounds, which in the evening were illuminated, and dancing was kept up with spirit and evident enjoyment. A grand display of fireworks and a torchlight procession wound up the day.

ANNUAL EXCURSION.—Messrs. W. FELL & Co., Royal Seed and Nursery Establishment, Hexham, gave their *employés*—over seventy in number—their annual excursion on Thursday last. The excursion was made to Sunderland and Roker.

PLANT PORTRAITS.

AZALEA INDICA GERMAINE PYNABERT, *Revue de l'Horticulture Belge*, August.

BOMAREA FRONDEA, *Bot. Mag.*, t. 7247.—A species originally described in these columns, vol. xvi, p. 669, fig. 102.

CAPPARIS FLEXUOSA, *Bot. Mag.*, t. 7248.—A somewhat scandent plant with opposite shortly-stalked lanceolate glabrous leaves, and many-flowered corymbs on long naked stalks. The flowers are remarkable for their fragrance and for their long prominent purple stamens. Native of Brazil—Kew.

HOME CORRESPONDENCE.

SHRUB GROWTH—Whatever may have failed to grow satisfactorily during the past season, it is certain that trees and shrubs have shown no tardiness in their development. All soils seem to have given to them their quota of nourishment. Among newly-planted shrubs (those of the past season) the growth has been much better than usual. It is often stated that there is little good received from mulching trees and shrubs. We do not know any plant which is not benefited by a proper application of good wholesome surface dressing. There are methods of applying nutriment which is positively mischievous, such as foul manure fresh from farm-yard, kennel, or slaughter-house. It is not gross nourishment that is necessary, but such as will avert drought, and maintain an even supply of healthy moisture, and when the roots grow upward they will run through it rapidly. When soil is poor and inert, it is very desirable to place some healthy and rather light soil among the freshly-planted roots. Some years ago I had to plant a shrubbery over a solid rocky surface with scarcely a particle of soil over the solid bottom. The latter was broken up (with difficulty), a layer of soil spread over, and the plants placed at suitable distances thereon. Soil, in which were a variety of mixtures, was placed nicely among the roots, a good soaking of water was administered, then a mulching of rotted manure, leaf-mould, and the whole covered with road scrapings and any soil come-at-able. Every plant seemed at home and made excellent growth. The whole mass of soil became matted with roots. Last season we planted another space similar to the above, and the trees and shrubs are now in as good order as we could desire. *Cupressus*, *Retinosporas*, *Portugal Laurels*, *Myrtle-leaved Laurels*, *Aucubas*, and *Hollies* form the bulk of them, and average 3 to 7 feet high. *A Scot.*

ROSE-BUDDING WITH A GROWING BUD.—Apropos of budding, in the previous number of the *Gardeners' Chronicle*, some persons may like to know how budding is performed with a bud just about to push. This operation is carried out under glass, from the end of the month of May to the end of the month following, and the shoot that is so budded is shortened back to about 3 or 4 inches above the bud, when it is seen that the latter has begun to grow, an operation which is soon followed by stronger growth. One lateral shoot is allowed to grow on the part that has been cut back, and when this grows as strong as the shooting-bud, it is itself cut back half an inch or more. All other growths on the stock are broken off as soon as they appear. So soon as the bud is sufficiently developed, and has begun to form laterals, the shoot that carries it must be cut back close to the bud, and the wound dressed with grafting-wax. *A.*

POTATO DISEASE AND SORTS OF POTATOS.—This scourge has already made its appearance in this district, as on going through the village here this morning I saw the effects of it in its worst form, for in one of the cottager's gardens the leaves were so badly attacked, that large breadths of the Potatos were almost defoliated, and spots or other symptoms of its presence were only too visible over the whole. As its visitation is so early (July 19), and Potatos, like all other crops, so late, it is to be feared that this will be a very bad year for them, as the tubers are small, and even the early kinds are not fully grown as yet, so that lifting will be quite out of the question. What the so-called remedies will do for us remains to be seen, but up to the present they appear almost failures, and one can hardly expect that spraying will be effectual, as it seems impossible to wet the under-sides of the leaves, where the spores of the *Peronospora* are [No. Ed.], and the arsenical or copper solutions only kill where they touch. If we ever do stay or get rid of the Potato disease, it will, I think, be by growing and raising such kinds as are known to have resisting powers against it, and they are those with thick hard foliage and comparatively woody stems, as contrasted with the American sorts, which are always the first to show it and spread it among others. I regard their introduction as an evil, for though of handsome shape, flat-eyed, and good yielders, few, if any of them, possess flavour or quality equal to that of some of our own. *Magnum Bonum*, like a certain pen, has been a "boon and a blessing." It is more largely cultivated than any other, and, taking it all in all, is unequalled by any other extant. For high flavour and general mealiness, none with which I am acquainted surpass the

old *Victoria*, or, among the kidney varieties, the *Huntingdon*, which are not half so much cultivated as their merits deserve. What has become of the good old *Fluke*, that used to be such a favourite, and so largely grown many years ago, especially in the West of England, where it was then the cottager's mainstay, and the *Lapstone Kidney*, which was also a favourite? Both were handsome and good, and the *Fluke* was supposed to resist the disease better than any other, but it only did really well in very good soil. It did not suit our light land, as I tried it here, and had to give it up. In the garden we only grow three kinds, and they are *Myatt's Ashleaf*, *Covent Garden Perfection*, and *Huntingdon Kidney*; those for the later supply, the *Magnum Bonum*, being planted in fields, where we have about 12 acres now looking well. *J. Sheppard, Woolverstone Park.*

"HAPPY-GO-LUCKY" GARDENING sometimes produces results which care, forethought, and intelligence only with difficulty achieve. There lived not long since in East Anglia a retired inn-keeper who had, on his retirement, bought with a house to live in, a garden for his amusement and profit, for he was a money-making man, who, although he enjoyed life, yet seemed to find nothing enjoyable that had not a money-making tendency, and although retiring from inn-keeping he by no means intended entirely to abandon this pursuit. He had a little grey pony, and used on fine days to take drives about the country buying Cucumbers, Grapes, and any choice fruit or vegetables which he thought by selling again he could gain a few shillings by; these he used, with the aid of a boy and a barrow, to hawk around the little town on the outskirts of which he lived, he himself carrying the samples to the doors of his customers. This man knew almost nothing of the practical part of gardening, and asked advice of everyone he thought competent to give it. He planted the garden with pyramid fruit trees, so far as my memory serves, about 6 feet apart, and as he had plentifully manured the ground, which was naturally good and in a well-sheltered position near the top of a moderate elevation, the trees grew with wonderful health and vigour. Often as he walked up and down the rows it seemed to me that he never did so during summer without snipping off young growths, whenever there were any to snip, very close to their base, so that the trees presented a very stumpy and peculiar appearance; yet they bore, during the two or three years that I knew them, heavy crops of fine fruit. It was really trying to see good results following these clumsy methods. I can only suppose that the conditions of soil, position, and treatment combined were the causes of success. Firstly, good soil and suitable situation; secondly, summer pruning carried to what is usually considered great excess; thirdly, heavy manuring; fourthly, deep digging close to the trees resulting in a sort of annual general smash up of most of the roots. Of course, either the heavy manuring, or that kind of pruning, or the smashing of the roots by themselves would have ruined all chances of continued fruitfulness. It was all the three combined, together with a good situation, which produced success. As the branches and the leaf surface of the trees were not allowed to extend, deep tap roots were an impossibility, for roots cannot extend much without coincident extension of the branches and leaves. I imagine, therefore, that the trees were almost entirely supported by fibrous roots annually renewed in rich surface soil. It is now more than seven years since I saw these trees, and I greatly regret that I had no opportunity to critically examine them at different seasons of the year, as a careful examination at different seasons could not fail to have been instructive. It would be interesting to know if any other of your correspondents have ever known fruit to be grown in the way I have described; if so, some books on fruit cultivation might possibly with advantage be re-written in a few words, somewhat as follows—as regards Apples, Pears, Plums, and Cherries, at least:—"Obtain your trees of bush or pyramid form, and as symmetrical in shape as possible; plant them on well-drained and highly manured soil, which need not be more than 1 foot deep, about 6 feet apart, in a sheltered situation. As soon as any new growths have become 6 or 8 inches long, snip them off within two or three eyes of their base, and continue to do this all through the growing season. As soon as the leaves have fallen in autumn, dig in a copious supply of rich stable or farm-yard manure, dig it in deeply between the trees as well as close up to their stems; never mind breaking the roots, as this is advantageous rather than otherwise; keep a most rigorous

look-out for weeds, and destroy them immediately they are detected." No other direction would be necessary, but to gather the fruit when ready, and deal with it as "circumstances render advisable." Of course, I believe to a great extent in orthodox methods, yet it is interesting to notice how heterodoxy sometimes pays, and I am sure orthodoxy may often pick up valuable hints from it. *J. E. Ewing, Havant.*

TWO GOOD PEAS—This year, when Peas are filling but poorly, it may be of service to mention those which are filling best. Two are conspicuous in this neighbourhood as being nearly all that can be desired. They are *Champion of England* and *Veitch's Gladiator*. The latter bids fair to be a very popular Pea in the kitchen, if not on the exhibition table (by no means the best criterion of a Pea, or indeed of any other vegetable). It is moderate in height, has good constitution, prolific in pods, which are well filled, and it is of excellent flavour. *P., Nottingham.*

SHORTIA GALACIFOLIA.—At p. 111, I note an enquiry from "A T." respecting the cultivation of the above beautiful and interesting plant. Broadly speaking, it presents but few, if any, difficulties to the cultivator. The general belief, however, is that it should be planted in peat in a moist and shady position, and, though it undoubtedly thrives under these conditions, to plant it in such means to rob it to a great extent of one of its greatest charms, namely, the deep bronzy-crimson hue of its foliage in autumn and winter, for it cannot be too widely known that as a handsome foliage-plant, especially in winter-gardening, it is not surpassed by another alpine. Moisture at the root it certainly enjoys, though this is not perhaps absolutely essential; but beyond this, plant it in an exposed position by all means, where the sun may have the effect of enhancing that brilliant hue, which alone makes it an acquisition. With regard to soil, it may be planted either in peat and loam in equal parts, or in sandy loam; indeed, in this particular, it appears quite accommodating. As a decorative foliage plant, then, it is very attractive, while as a flowering plant it is one of the most beautiful alpine we possess. The flowers are white, shaded with a bluish tint, and passing to rose with age. The plant is dwarf, with a creeping rootstock, and quite hardy; altogether one of the most meritorious of alpine plants, and as such, should be encouraged in every possible way. *J.*

CYRTANTHUS TUCKERII (*Gardeners' Chronicle*, p. 155).—I have only to say that, in common with the whole genus, it is one of the easiest to cultivate of all bulbous plants. I have thirteen species, besides one which will probably be new, and several hybrids, and I find that all belonging to the same section as *C. Tuckerii* thrive admirably on a shelf near the glass in an ordinary cold greenhouse in which a *Maréchal Niel* Rose is growing on the roof. Most of the species soon fill their pots with bulbs, which flower at all sorts of seasons—indeed, they are never out of bloom for any length of time. The main points to observe are, not to disturb them at the roots, but as seldom as possible, and to keep them well watered when growing; and with less water, but not dry, when their shabby leaves indicate that they are at their less active season. *C. Tuckerii*, the beautiful *C. MacOwanii*, the stately *C. Huttoni*, and a few others from the higher ranges, I believe to be, like *Anoanthus breviflorus*, quite hardy in favourable situations. *J. O'Brien.*

RASPBERRY SUPERLATIVE.—In answer to G. W. Richards on p. 136 the Superlative Raspberry can be had from Mr. G. Bunyard, the Old Nurseries, Maidstone, who sent it out a few years ago. It is large, has fine flavour, and is a good cropper. I have discarded all the other sorts, and have now only the above variety. I plant the rows 12 feet apart, and plant Potatos or any dwarf vegetable between. Stake wide, say 2 feet at bottom; leave the stake so that the top shall be at least 6 feet apart, to allow the young canes plenty of room to ripen themselves, and the fruit on the autumn growths. Mulch well, and not dig too close. *F. Bridger, Penshurst Gardens.*

SUMMER TRANSPLANTING OF EVERGREENS.—Some evergreens are very difficult to move successfully, whilst others are just as easy, but if the first-mentioned are lifted at the right time, the operation may be done with comparative safety if the plants have not far to travel, or are not kept long out of the ground. In gardens where they are only to be shifted short distances, and may therefore be got in

again quickly, I should not hesitate to transplant any evergreen now, provided its young growth was not too soft, as the ground being so warm, and plant-life active, roots are formed at a rapid rate, and plants soon recover the check. To aid them in this, however, and prevent undue suffering through dryness of air, the tops should be frequently syringed during the day for the first week or two, as that will counteract any loss of sap, and keep the bark from shrivelling. Among the easiest to move now are Rhododendrons, Box, Hollies, Aucubas, and most of the Coniferae, but, of course, a good deal depends on the soil they are in, and how long they have stood without being disturbed, or whether previously transplanted, as where conditions are favourable, they will lift with good roots and large balls of earth, and scarcely feel the change. The way to insure success, is first to dig and prepare large holes where the plants are to go, and then set about lifting them, going well out, and opening a deep trench at a fair distance from the stem, and then working up gradually nearer, by carefully forking the soil out from the roots, till the mass of earth is so reduced that the bulk may be hoisted and carried with what appliances or strength there may be at command. As soon as the plant is placed in position, the next thing is to put some fine soil around the outside of the ball, and then by dashing water with great force, wash it into any cavities there may be, and to make sure of this being done, the plant should be swayed to and fro, when the water and soil will draw under, and in amongst the roots, and settle down, after which the hole may be filled, and a good mulching given, to which latter I attach much importance. *J. Sheppard.*

CHILDRENS' EXHIBITS AT FLOWER SHOWS.—To every adult exhibitor, assuming that he or she has higher aspirations than the mere winning of prizes, every good exhibit at a show should furnish an object lesson, inducing better cultivation in the future, that the perfection thus presented might be arrived at in each exhibitor's case. It can hardly be so with respect to children's exhibits, except where they consist of pot plants. But usually children are confined to such, comparatively, useless things as wild-flower bouquets or bunches, by courtesy termed nosegays, also big bunches of grasses, put together with little taste, and without sense or reason. Such exhibits have no good results, and in no way educate the youthful exhibitors. I saw but last week, at Highgate, a most pleasing way of showing wild grasses which had, at least, some educational value, and might, under proper guidance, be made much more so. Elementary school teachers have, it is feared, very little botanical knowledge, and are very ignorant even of such ordinary knowledge as the common names of wild flowers and grasses. There are a few exceptions, but they are few indeed. Were the few the rule, exhibits of the nature to which we refer might be found in every rural flower show in the kingdom. At Highgate, native grasses were shown in small bunches secured to boards covered with some pink-coloured calico. In one case sixty varieties were furnished, in others fifty-two, forty, and one hundred. None had their botanical appellations furnished, and hardly one-fifth their common names. These were somewhat odd ones, Oat, Egg, Pussy Cat, Foxtail, Shiver, Lady Hair, Red Maiden Hair, Tinker-tailor, Barley, Brush, &c., sufficient perhaps for the exhibitors, but not instructive. Such a class, were it universally established, might prove, with some aid from elementary school-teachers, a most useful one at shows, as also would the one for bunches of wild flowers, correctly named, rather than the meaningless bunches now seen in useless profusion. *A. D.*

PRUNING PEACH TREES.—Undoubtedly the best time to prune Peach trees is directly the fruit is gathered, whether the trees be growing in the house or against the open wall. Some persons would not think of pruning their trees until the time comes for cleansing and re-arranging the branches for the next year's growth. I would ask these persons what is the advantage to be gained by leaving this necessary operation until the time named. A little thought when gathering the fruit should convince them that there is much to be gained by cutting out useless branches or shoots at once, as it will afford more space to those left, and will admit of a more thorough maturation of the shoots, and it is very often traceable to a want of maturation of the last year's shoots that thin crops of fruit are so common in some neighbourhoods out-of-doors. I do not mean to say that the trees can be so pruned at this period that not a single shoot will need to be cut

out in the spring, but the bulk of it can be done now, and ought to be if the best results are to be obtained. With outside trees this summer-pruning applies with more force, because there is not the advantage of having the fruit ripened with the aid of glass, which brings the wood to a greater state of maturity than when growing against a west wall for instance, this latter being perhaps the worst position of all for Peaches. As previously hinted, the pruning consists of removing useless branches for next year's crop, where an old weakly branch can be cut out to make room for shoots of the current year, which are of medium strength, and promise to mature readily. By following this plan, the trees are always furnished with wood for an annual crop of fruit, the form of the tree from base to its extremity is preserved also, and it is as well to have shapely trees as otherwise. The point to observe is to allow space for every shoot, that it may become matured; this is the best guide to follow in pruning Peach trees. *E. M.*

RHODODENDRON FALCONERI.—The interest attaching to the various letters on the flowering of this grand species is heightened by an apparent uncertainty as to its real colour. The gentleman who describes it as shaded lilac is, I think, mistaking R. Hodgsoni for R. Falconeri; they are very easily mistaken for each other when not in bloom, and his description seems to suggest that this has been the case now. R. Falconeri flowered (I believe for the first time in Europe) under my care at Bagshot (Standish & Noble) about the year 1854 or 1855. Its colour was a rich primrose or deep sulphur, very clear and beautiful, with a dark spot at the base of each segment, which I can only liken in shade to the rich blotch at the base of each petal of the Gum Cistus. Probably most readers of the *Gardeners' Chronicle* have seen and admired this striking flower, and will recognise that my R. Falconeri did not at all resemble the one described in p. 137 of that paper by the editor. So many of us, however, are told by our lady friends that we are afflicted with colour-blindness, that this malady may account for the discrepancy in my description of the colour of Falconeri; I can only say it appeared to be yellow and not lilac. It is a magnificent shrub, worthy of all praise, and in 1854 or 1855 was considered of so much importance that we had it modelled in wax, and presented to the Royal Botanic Garden, Regent's Park, in whose museum it remained many years, but I am ignorant what has become of it finally. *Charles Noble, Bagshot.*

PEAR JARGONELLE.—In Mrs. Turner's garden at North Ferriby, near Brough, Yorks, I recently observed a fine old tree of the above variety. From the information I could gather, it is something like 104 years old. Trained to the wall of a huge building, the branches covered a space of from 40 to 60 feet wide, and 30 or more feet high. I was informed by Mr. Belwood, Mrs. Turner's gardener, that the tree annually bears heavy crops of fruit. The stem at 3 feet from the ground-level measures 5 feet. A tree of these dimensions, it is needless to say, rarely makes but little wood, but when a few shoots can be obtained, Mr. Belwood takes care to have them nailed to the wall. There are possibly other trees of the above variety of larger dimensions, but even if that be so, this one is well deserving notice. *H. Markham.*

POISON IVY (RHUS RADICANS).—In the *Gardeners' Chronicle*, p. 105, this plant is mentioned as a favourite of Professor Sargent's, and as its beauty in its autumnal dress is undeniable, and likely to attract plant-lovers to buy and cultivate it, I think it may be useful to call attention to its venomous character. It may not be generally known, but it is nevertheless a fact, that the mere touch or rub against *Rhus radicans* is sufficient to cause intense suffering. I have a case before me as I write. A man was engaged in layering, and did not know (nor did I) the poisonous character of this shrub; he proceeded with his work, feeling no pain, and receiving no wound or even abrasion of the skin; yet the next day his hands and arms were covered with large blisters and pustules, and swollen to double their normal size, and he is quite unable to use them, or do any work at all. I could scarcely have believed this if I had not seen it, and feeling that the penalty attached to the enjoyment of that feast to the eyes which *Rhus radicans* offers is too great, I have rooted up and burned every vestige of this beautiful but malignant plant. *Charles Noble, Bagshot.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 9.—The exhibits at the Drill Hall on the 9th inst. were interesting but not numerous, and this was the more noticeable when contrasted with the really fine show of July 26 last.

Floral Committee.

Present: W. Marshall, Esq., in the chair; Messrs. R. Dean, H. Herbst, H. B. May, R. B. Lowe, W. C. Leach, Chas. Pearson, Geo. Phippen, Jas. Walker, J. T. Bennett-Poe, T. Baines, Henry Cannell, Robert Owen, B. Wynne, Harry Turner, Geo. Paul, T. W. Girdlestone, and Geo. Gordon.

Messrs. Cannell & Sons, Swanley, Kent, exhibited some beautiful double Begonias, set up in bunches of three; R. B. Parsons (pink), Miss Falconer (yellow), and Madame la Baronne de St. Didier, were perhaps the best. The latter is a very lovely variety, of a pale lemon-yellow. Also two Cactus Dahlias, Robert Cannell, a good flower with colour resembling Chinaman, and Favourite, a very deep bronze. Mrs. Keith, a decorative variety of curious shades of bronze and pink, was granted an Award of Merit.

Mr. Cannell had also *Stapelia hirsuta*, *S. variegata*, and *S. pinnata* in flower, besides a large collection of blooms of Carnation and Picotees, Carnation King of the Scarlets, a self-coloured scarlet, and Salamander, a self-coloured rose; received Award of Merit. Also Picotee Nellie Bath, yellow ground, flaked dark crimson; Duchess of Sutherland, white ground, flaked with rose; Mrs. Arthur Barrett, yellow ground, rose-flaked; and Old Coin, a very curious flower, yellow and rose.

Mr. Chas. Turner, of the Royal Nurseries, Slough, showed some cut blooms of Carnations and Picotees, Carnation King of the Scarlets, a self-coloured scarlet, and Salamander, a self-coloured rose; received Award of Merit. Also Picotee Nellie Bath, yellow ground, flaked dark crimson; Duchess of Sutherland, white ground, flaked with rose; Mrs. Arthur Barrett, yellow ground, rose-flaked; and Old Coin, a very curious flower, yellow and rose.

Mr. Leach, gr. to the Duke of Northumberland, Albury Park, had a collection of cut flowers of Stocks and Zinnias; also some fine Mignonette, Her Majesty.

From the Royal Horticultural Society's garden at Chiswick came a fine collection of Sweet Peas, showing beautiful colour, and shades from pure white to rich scarlet and deep purple.

Mr. F. Bull, Wormingsford, Colchester, sent twelve seedling Carnation blooms. Mr. Richard Dean, Ealing, exhibited two border Carnations, The Speaker, a deep purple, and Lord Randolph Churchill, a good scarlet. Also a very good Carnation, called Ketton Rose, and Antirrhinums Brilliant and George Findlay, the latter obtaining an Award of Merit. Mr. Dean also included cut blossoms of a Sweet Pea called Delicata, and a plant of *Semprevivum Boissieri*.

Messrs. Paul & Son, Old Nurseries, Cheshunt, had some Rose blooms. T. B. Haywood, H.P., a crimson-rose colour; Mrs. J. D. Pawle, H.P., dark crimson; Gustave regie, N., pretty little yellow bloom; and their new Tea Waban. Mr. Anthony Waterer, Knap Hill Nurseries, Woking, had a spike of *Lilium Parkmanni* ×, very like *L. auratum*, but much less campanulate.

H. Warburton, Esq., Claverhouse, Ascot, showed a single yellow Begonia, called Ethel Louise; and Mr. G. Clarke, Maison Dieu Nurseries, Dover, had a variety of Sweet Pea. Mr. Edmund Holman, Bishop's Waltham, showed some blooms of a double Begonia seedling; the flowers were scarlet, with a good white centre.

From Mr. P. McArthur, of Maida Vale, came a plant shown under the name *Aloe Gortoniana*. This is a very pretty Aloe, with green leaves, finely toothed and speckled with white. The plant was carrying a spike of bloom about 2 feet high.

Mr. A. Spurling, Blackheath, obtained an Award of Merit for a very fine yellow Carnation called The Moucher, of excellent habit.

Messrs. Jas. Veitch & Son, Chelsea, had cut sprays of *Robinia Pseudo-Acacia semperflorens*, *Eucryphia pinnatifolia*, a very fine hardy shrub, bearing white single flowers, containing numerous white stamens with yellow anthers; and of *Pavia macrostachya*, another very ornamental flowering shrub, both of which have been figured in our columns. Also a collection of their celebrated hybrid *Streptocarpuses*, and of hybrid forms of *Rhododendron javanicum-jasminiflorum*. A plant of *Vallota purpurea* var. *amabilis* also came from Chelsea, bearing a good strong scape of bluish-white flowers. (Silver Banksian Medal.)

Mr. Wythes, gr. to the Duke of Northumberland,

Syon House, Brentford, contributed a magnificent group of *Campanula pyramidalis* in variety. *C. pyramidalis* compacta, a dwarf little plant with blue Anemone-like flowers, was granted an Award of Merit, Silver Banksian Medal.

Mr. Thos. S. Ware, Hale Farm Nurseries, Tottenham, received a Silver Banksian Medal for a very fine lot of Carnations; and Mr. T. Jannock, Dersingham, King's Lynn, showed some bunches of Lily of the Valley, and received a Cultural Commendation.

The very interesting collection of Sweet Peas which Mr. Barron brought up from the Chiswick Gardens must convince all that good work is being done at Chiswick, when such a fine collection of Sweet Peas can be presented to view in such fine character. Of bronze-shaded varieties, as representing the darkest-coloured, Boratton takes the lead; the standards are of a rich bright bronzy-maroon, the wings bright purple—a fine and distinct variety. Indigo King is another fine dark variety; glistening maroon standards, and rich purple wings—very fine. Imperial Blue is one of the striking blue varieties Mr. Eckford has raised; it has pale bluish-purple standards and bright blue wings. Waverley is another blue, but of a very pleasing pale colour; the standards rosy-violet, with pale violet wings. Dorothy Tennant, a beautiful variety, finds a place also among the blue Sweet Peas, though the tint is violet rather than blue; the standards are clear bright rosy-violet, and it is one of the most distinct and attractive varieties Mr. Eckford has raised. Countess of Radnor has delicate soft mauve standards and bluish-mauve wings, also very pretty and attractive. Princess of Wales is striped with blue and rosy-violet on a white ground, though striped Sweet Peas are not so attractive as the more definite self-coloured varieties.

Of crimson or red shades the darkest is Cardinal, with its bright red standards and lively rosy-violet wings. Jeannie Lea has pale red standards and pale wings of rosy-violet, of the same character as the preceding, but paler in all its parts. One of the most useful and pleasing of the Sweet Peas raised by Mr. Eckford is Splendour, and well named, too, because of its bright rose; but to be appreciated, it should be seen growing in a mass. The nearest approach to a scarlet is found in Ignea, with its deep bright red standards and bright deep rosy-violet wings. Her Majesty is paler in hue than Splendour, the standards bright pinkish-rose, with a dash of violet; very pretty. Orange Prince has orange-salmon standards and clear pink wings, the orange being taken as a promise of a deeper tint of this colour in successive varieties. Empress of India is also a very pretty variety, the standards salmon-pink, the bluish wings having slight veins of pale violet. The Queen has salmon-pink standards, with wings of the palest soft mauve; a striped form of this was also shown. Apple Blossom has pale rose standards, with bluish wings, soft and delicate; and it is equalled in attractiveness by Mrs. Gladstone, with its delicate pink standards and bluish wings. The Bride and Queen of England are two white varieties, the last, to all appearance the largest, but both having a close resemblance to Mrs. Sankey, which appears to be the largest and purest white variety. Delight has pale yellow or straw-coloured standards, and white wings. Lemon Queen has lemon-pink standards and bluish wings, very distinct and attractive. Primrose and Mrs. Eckford were both shown, with a decided family likeness between them, but it may be concluded the latter has a slight gain in depth of colour, the yellow being stronger, and not quite so fleeting.

We do not cultivate Sweet Peas as we ought; the old plan of sowing thickly in rows is still followed, the individual plants having little scope for development. The effect of good cultivation upon Sweet Peas is something astounding. If they are given good soil, more space, and water and mulching in dry weather, the flower-spikes would be bolder, the individual flowers larger, and the colours deep and glowing.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; Jas. O'Brien, Sec., Dr. Maxwell T. Masters, F. Sander, E. Hill, T. W. Bond, H. Ballantine, H. M. Pollett, and W. H. White.

Messrs. F. Sander & Co., St. Albans, staged a group of rare Orchids, among which were their new *Lælia Oweniana* × (*C. pumila* Dayana ♀, *C. xanthina* ♂), a very pretty hybrid with white sepals and petals, and dark maroon front to the labellum, with a white blotch at the tip. The interior of the tube is tinged with bright yellow (Award of Merit);

also the remarkably fine *Calanthe Sanderiana*, which is of the evergreen, or *C. veratrifolia* section. Its flowers were larger than any of the genus, and bore a peculiarly thick spur. Sepals and petals bright rosy-lilac, lip dark crimson (Award of Merit). Messrs. Sanders' group also contained the true *Cypripedium Wallisii*, *C. Doris* ×, *C. dolia* ×, *C. radiosum* × Sander's var., *C. picturatum* ×, *C. Macfarlanei*, *Saccolabium Hendersonianum*, *Vanda Sanderiana*, *Bulbophyllum mandibulare*, *Cattleya granulosa*, *C. Schofieldiana*, in three distinct forms; several *C. Warszewiczii*, a pretty plant of *Odontoglossum Schroderianum*, *Oncidium tigrinum*, &c. (Silver Banksian Medal.)

M. Godefroy-Lebeuf, Rue d'Edimbourg, Paris, sent a fine plant of *Cypripedium caudatum* Luxembourg var., which is a much stronger grower than the plants of *C. caudatum* imported of late years, and without the rose-coloured tint on the flowers. (First-class Certificate.)

C. L. N. Ingram, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), exhibited a fine hybrid, *Lælio-Cattleya Ingramii* (*L. pumila* Dayana ♀, *C. aurea* ♂). Although the plant was small, it bore evidence of the cross with *C. aurea*, the form of the lip being that of this species. Sepals and petals light rose; lip, dark purplish-crimson, with an obscure tracing of a lighter hue. (First-class Certificate.) Mr. Ingram also exhibited *Cypripedium Elsteadianum*, *C. conchiferum* ♀, *C. grande* ♂.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), staged a noble plant of *Lælia crispata*, Statter's var., with three spikes bearing together twenty flowers, which were characterised by the broad and not narrowed front lobe to the lip, which was also very richly coloured (Award of Merit). The same gentleman also exhibited *Lælia elegans* Bluntii, and cut spike of *Lælio-Cattleya Amesiana* ×.

Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, and Park Road, Clapham, again exhibited their dwarf strain of *Oncidium macranthum* nanum, which produces very fine flowers, on spikes only a few inches in height, and from very small plants (Award of Merit). The same firm also sent *Bifrenaria Charlesworthii*, *Miltonia Moreliana atrovirens*, *Zygopetalum Warlesianum*, *Anguloa Turneri*, and an *Oncidium* intermediate between *O. Forbesii* and *O. curtum*.

Messrs. James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, sent *Cypripedium Astrea* × (*C. Spicerianum* × *C. Philippinense*). The plant bore a two-flowered spike. The upper sepal white, green at the base, and with a purple line up the centre; petals twisted, tinged with dull rose; lip greenish-white, with lilac tinge.

T. M. Barton, Esq., Gainsborough, sent a hybrid *Cypripedium*, which was determined to be *C. Mavardi* ×.

F. Wigan, Esq., Clare Lawn, East Sheen (gr., Mr. W. H. Young), sent *Lycaste tetragona* and the rare *Angraecum caudatum*. A. H. Smee, Esq., The Grange, Carshalton (gr., Mr. G. W. Cummins), sent a spike of *Phajus Humblotii* Henryii. Mr. McArthur, the London Nursery, Maida Vale, a form of *Cypripedium Godefroyæ*, with flowers approaching in form and spotting to *C. bellatulum*; and Messrs. Hugh Low & Co. sent plants of another form of *C. Godefroyæ*, with yellow-tinted flowers, spotted with purple, four fine plants of *Vanda cœrulea*, *Trichopilia rostrata*, and *Angraecum articulatum*.

Fruit and Vegetable Committee.

Present: Philip Crowley, Esq., in the chair; Messrs. T. F. Rivers, W. Wilks, H. J. Pearson, Jas. Cheal, G. W. Cummins, Geo. Bunyard, J. Wright, Alex. Dean, J. W. Bates, G. H. Sage, G. Reynolds, G. Wythes, H. Balderson, and George Taber.

A grand collection of Figs came from the Society's garden at Chiswick, containing about thirty varieties. The names were *Trois Récoltes*, *Martinique*, *Gourand Noir*, *De Constantine*, *Green Ischia*, *Toulousienne*, *Gourand Rouge*, *Hirta du Japon*, *large Black Douro*, *De la Madelaine*, *White Ischia*, *small Black*, *R-culver*, *De l'Archeipel*, *Black Ischia*, *Bourjasotte Grise*, *Du Roi*, *Negro Largo*, *Bontard*, *Doré Nobis*, *Bourjasotte Noire*, *Negroume*, *Trifer*, *Doré*, *Brunswick*, and *Grosse Violette de Bordeaux*. First-class Certificates were awarded to the following five varieties for exceptional fine flavour: —*Nebian*, *Bourjasotte Grise*, rather small Ischia-like fruit; *Monaco Bianco*, *Gourand Noir*, a good-sized black fruit, shape like Brown Turkey; and *Violette Sapor*.

Fruits and foliage infested with the minute scale called *Mytilaspis ficus* were also shown. This insect is very detrimental to the Fig, and when it gets upon the fruit, the fruit ceases to swell.

Messrs. D. Burton & Sons, Bexley Heath, Kent, brought a very large number of Peaches and Nectarines, including about six or eight dozen of good fruits of Rivers' Orange Nectarine, and some excellent fruits of Peaches, Prince of Wales, Gladstone, and Sea Eagle. (Small Silver Medal.)

Messrs. T. Rivers & Sons, Sawbridgeworth, were awarded First-class Certificates for Cherry Emperor Francis, and for a Plum Late Transparent Gage, the Plum possessing most delicious flavour.

Mr. Wythes, gr. to the Duke of Northumberland, exhibited a green-flesh Melon, obtained from Eastnor Castle and Syon House, which seemed to take much after Eastnor Castle; also a dish of Tomato Ladybird, very fine even fruits. Mr. J. Barkham, Longford House, Newhaven, exhibited a seedling Melon, called Barkham's Seedling, obtained from Highcross hybrid, and Wm. Tillery. Another seedling Melon came from G. Statter, Esq., Stand Hall, Whitefield, Manchester, called Stand Hall Hybrid. W. M. Bullivant, Esq., Homewood, Eden Park, Beckenham (gr., T. Crosswell), also showed fruits of a very pretty Melon called Crosswell's Green-flesh, and a capital dish of Tomatos Sutton's Perfection. A first-class Tomato called Swanson's Eclipse, was shown from the Chilwell Nurseries, Nottingham, by Messrs. J. R. Pearson & Sons. W. A. South, Esq., Neasdon House, Neasdon, N.W., also contributed seedling Tomatos.

Messrs. Sutton & Sons, Reading, showed three Marrowfat Peas, recommended for market growers and others, as they are said not to require sticks. Perfection appeared a very good dark green coloured variety, and is said to grow 3 feet high. Windsor Castle is a lighter coloured pod, but the pods are very large and well-filled. Sutton's Exhibition, however, was the best. This has been introduced this year, and the pods are large, and contain from ten to a dozen good Peas of a very dark green colour, and grows about 4 feet high. (Cultural Commendation.)

Messrs. W. W. Johnson & Sons, seed growers, Boston, also showed a good collection of Peas, containing some of the well-known kinds. We do not remember seeing a better dish of Duchess of Albany than the one exhibited by this firm. (Cultural Commendation.) Some Runner Beans, exceedingly early, came from Mr. Leach, gr. to the Duke of Northumberland, Albury Park.

LECTURE ON FUCHSIAS. BY MR. G. FRY.

In the absence of Mr. Fry, an interesting paper on this subject was read on his behalf by the Rev. W. Wilks. The essayist commenced his paper with an interesting historical sketch of the Fuchsia, which was first introduced to this country about 1746, from Chili, by a sailor. The plant was exhibited in the window of his mother's house, and whilst there attracted considerable attention from an individual who communicated the fact to Mr. Lee, a nurseryman at Hammersmith, who, after much trouble, succeeded in obtaining the novelty for 80 guineas, which was afterwards called, but improperly, *F. coccinea*. In 1830 the first English hybrid was raised, and from that year (and especially after 1840) new hybrids were frequently distributed.

In 1855 the first varieties with white corollas were distributed by Henderson, but how they were obtained must ever remain a mystery, as the raiser (Mr. Storrey, of Newton Abbot), died about the time his plants were being distributed, without leaving any particulars respecting them. Mr. Fry then went on to describe the beautiful specimens that were grown as early as 1843, some of which were under his charge, and were about 14 feet high. He thought that the unpopularity of the Fuchsia at the present time was partly due to the very different style of horticultural buildings which obtain now, and in which it was extremely difficult to find room for large specimen plants. But the lecturer dwelt upon the fact that room might and ought to be afforded for dwarf plants, which can be raised and brought to perfection in about six or eight months.

Mr. Fry said that although some of the best varieties had been obtained solely by bee-fertilisation, if advances were to be made and certain peculiarities to be developed, it was imperative that they should be fertilised by the cultivator, and all other chance of pollination be guarded against. The seed, which should be thoroughly matured, should be carefully taken from the pulp and dried, so that they may be stored away until about February, when they may be sown thinly in shallow pans or boxes (which should be well perforated), and carefully labelled as to pedigree, &c. Cover them very thinly with fine mould, and place some sheets

of glass over them, covering the whole with tissue. They will appear in about fourteen to twenty-one days, when the glass and paper should be taken off. When they are large enough to handle they are pricked off into pots, and when about an inch high are put singly into small pots, using very light soil. As soon as they are nicely rooted they are shifted into 3-inch pots, and placed on a shelf in the greenhouse. They should then be moved on as they require, and will commence to bloom when they are five or 6 months old. Mr. Fry had always longed to raise a perfectly white Fuchsia, and had failed; but he had been greatly pleased that Mr. Cocker of Aberdeen had been more successful, and had raised Countess of Aberdeen, which was admirable in all respects. Although its growth was rather weak, it could be grown into specimen plants under proper treatment, and included in this was the requisite amount of shading.

Propagation.—As soon as the shoots were of sufficient length they should be taken off, and put into a compost of loam, leaf-mould, and sand; or they would strike easily, and more quickly, if put into cocoa-nut fibre. When struck, they should be potted singly into small pots, and afterwards into 4-inch, and larger as they may require. The best soil was the top spit from meadow-land, with some sharp silver sand, to which, if the loam be heavy, a little fibrous peat ought to be added. When potting into the larger pots, Mr. Fry advised a little soot and dry cow-manure to be added. The compost was to be moist, but not wet, at the time of using, and the plants were to have a thorough watering before potting, and they would then be best if not watered until two or three days after the operation. A high temperature was disastrous to Fuchsias, and the lecturer recommended a temperature of from 50° to 75° as being most conducive to success.

Mr. Fry then spoke of the adaptability of the Fuchsia as a bedding plant, and of the pretty effect produced by planting those with white corollas on a groundwork of Lobelia, and the coloured ones on a bed of Mesembryanthemums; concluding by appealing to compilers of schedules to give more encouragement to the growth and exhibition of this floral gem.

SOUTHPORT AND BIRKDALE HORTICULTURAL.

JULY 28.—Shortly after noon on this date, the eleventh annual exhibition of the above society was opened in the private grounds of the Mayor. The ground was in every way adapted to the purposes of the show. Two large marquees had been erected beneath the trees in the grounds. The larger of the two tents contained the exhibits of the gentlemen's gardeners, whilst the smaller held the cottagers' and amateurs' exhibits, and some large Ferns and Fuchsias shown by gentlemen's gardeners. The tent space was abundant for all requirements, and the staging and arranging of the exhibits had been done with a view to displaying the same to the best advantage. The plants of the larger varieties were ranged up the centres of the tents, whilst the smaller varieties of exhibits were placed round the interior of the canvas. The principal judges were Mr. Andrew Jamieson Neston, Cheshire; Mr. J. Hathaway, gr. to the Earl of Lathom, and Mr. J. Wilson, gr. to Mr. J. Reynolds, West Derby, Liverpool. Mr. Frederick Bull, curator at the Churchtown Botanic Gardens, and Mr. Henry Woodhall, assisted by judging the cottage front gardens. The classes numbered 122, and the exhibits, which were of a comprehensive nature, included plants, fruits, cut flowers, vegetables, "groups." Speaking generally of the show, it might be said that the plants and fruits were of a better class than hitherto, showing a decided improvement in the growing and cultivation all round. A distinctly better strain was noticeable amongst Begonias and similar classes of plants than was ever seen at the society's shows before. The miscellaneous groups of plants were scarcely up to the average of previous years. The groups exhibited this year were fairly good, but lacked colour somewhat; but the unfavourable season is to account to some extent for this drawback to the groups exhibited. In the class for six stove or greenhouse plants there was a keen competition, and quality reigned supreme throughout. Much difficulty was experienced by the judges in deciding upon the respective merits of the exhibits in the class for stove and greenhouse plants. The Ferns made up a magnificent display, and with one or two isolated exceptions were of a splendid description. A high quality prevailed amongst the hardy Ferns.

SOUTHAMPTON HORTICULTURAL.

JULY 30 AND AUGUST 1.—This annual exhibition was, as usual, held in the Society's grounds, Westwood Park, on the above dates, and was a really good show. There was a slight falling off in the number of specimen stove and greenhouse plants, still there was ample material to create a fine display.

Mr. F. Jennings, gr. to W. Garton, Esq., Woolston, Southampton, was the principal exhibitor in specimen plants, securing leading honours with well-grown and freely-flowered plants. Mr. Amys, gr. to the Hon. Mrs. Elliott Yorke, Hamble Cliff, was also a successful exhibitor in the plant classes. Mr. E. Wills, florist, Winchester Road, Shirley, Southampton, also exhibited in many of the plant classes with success.

Mr. T. Wilkins, gr. to Lady Theodora Guest, Inwood House, Henstridge, Blandford, won the premier award in the class for miscellaneous groups of plants arranged for effect, with a commendable arrangement. Mr. Jennings won for six specimen Ferns, with exceedingly well-grown examples. Mr. Blandford, gr. to Mrs. Haselfoot, Moorhill, Bitterne, won in the class for a collection of Orchids, staging a nice lot of choice kinds; Mr. E. Carr, gr. to W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke, 2nd, Fuchsias, Coleus, Begonias, Pelargoniums, hardy Ferns and plants suitable for table decoration were all creditably shown.

Cut flowers were contributed in large numbers in their respective classes. Messrs. Keynes, Williams & Co., Salisbury, won in the open classes for Roses, show and Pompon Dahlias. Mr. Pritchard, Southborne Nurseries, Christchurch, won for herbaceous flowers. Mr. Budd, gr. to F. Dalgety, Esq., secured the leading award for stove and greenhouse flowers. Mr. E. C. Goble, Ryde, Isle of Wight, and Mr. Pubbeck, staged good Carnations and Picotees. Mr. Chard, Brunswick Nursery, Stoke Newington, won 1st prize for table decoration; and so he did for both ball and bridal bouquets, with exhibits quite up to his best style.

Fruit was plentiful and good. Mr. Inglefield, gr. to Sir J. Kelk, Tedworth, Marlborough, won easily for six dishes, staging good produce. Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Wickham, won first honours for three bunches of black and three bunches of white Grapes, and also for one bunch black and one white, with good examples of Black Hamburg and Muscat Alexandria, also Silver Medal for one bunch of the last-named kind. Mr. Inglefield led for a dish of Nectarines, a like honour falling to Mr. N. Molyneux for Peaches. Melons were a strong class: Mr. Ward, gr. to the Earl of Radnor, Longford Castle, won with a very fine Hero of Lockinge in the green class. Mr. Maxim, gr. to the Hon. Miss Shaw Lefevre, Heckfield, in the scarlet-flush section, with Sutton's A1. Mr. West, gr. to J. R. Wigram, Esq., had the best hardy fruit in six dishes. A capital lot of vegetables were staged in larger number, and of better quality, than we have before seen them, even at Southampton. In the open class for nine varieties, Mr. Pope, gr. to the Earl of Carnarvon, Highclere Castle, Newbury, won rather easily, and so he did in the class for six kinds; prizes, given by Messrs. Webb. For Messrs. Sutton's prizes Mr. Waite, gr. to Colonel the Hon. W. P. Talbot, Glenhurst, Esher, was the most successful.

For Bougainvillea glabra "Wills" variety was awarded a First-class Certificate, exhibited by Mr. Wills, which has smaller flowers with a distinct purple shade; plants in 48-sized pots, flowering freely. A like distinction was given to Anthurium Sanderianum exhibited by Mr. F. Sander, St. Albans.

Certificates of Merit were awarded to Mr. B. Ladhams, Shirley, for an extensive exhibit of hardy cut flowers; and to Mr. Chard, for floral arch; and to Messrs. G. Bunyard & Co., for collection of Gooseberries, Raspberries, and handsome fruits of Lady Sudeley Apple, showing the wonderful colour of this variety when grown under favourable conditions.

NORTHAMPTON HORTICULTURAL.

AUGUST 1.—The above Society held its eleventh annual show on Bank Holiday at Delapre Park, a capital site for holding a show of such magnitude. The competition in most classes was good. The principal class for twelve stove or greenhouse plants was won by Mr. J. Cypher, Cheltenham, with magnificent specimens of the following:—Erica Thompsoni, Croton angustifolius, Croton Sunset, Latania borbonica, Ixora coccinea, Kentia australis, Erica tricolor vera, Phœnocomma prolifera, Stephanotis

floribunda, Cycas revoluta, and Kentia Fosteriana; Mr. Finch, gr. to J. Marriott, Esq., Coventry, closely followed for 2nd honours, his best plants being Croton Johania, Ixora Fraserii, Bougainvillea glabra, and Sobralia macrantha; this latter was an exceedingly fine plant, and was awarded the *Gardeners' Magazine* Medal for high cultivation.

For six stove or greenhouse plants, the competition was also good. Mr. Lainchbury, gr. to C. Watkin, Esq., Wellingborough, was well 1st, with creditable plants; 2nd, Mr. J. Holland, gr. to W. Jeffery, Esq., Cliftonville.

For a group of miscellaneous plants (open), Mr. J. Cypher was 1st, with a very light and graceful arrangement.

In the group confined to gardeners, the competition was very keen; 1st, Mr. Jeffery; 2nd, Mr. H. Tressler, gr. to M. P. Manfield, Esq., M.P.

Miscellaneous plants were also well shown, such as Ferns, Fuchsias, Begonias, and table plants. Cut flowers made a grand display.

For twenty-four Roses, the Rev. W. H. Jackson, Bedford, was 1st; Messrs. J. Perkins & Sons, Northampton, 2nd; and Messrs. T. Perkins & Sons, Northampton, 3rd. The Rev. W. H. Jackson being also 1st for twelve splendid specimens of Tea Roses.

Collections of fruit were poorly shown. 1st, Mr. S. Cale, gr. to Earl Spencer, Althorpe. Vegetables were a striking feature. Mr. W. Fyfe, gr. to Lord Wantage, took 1st honours in the principal classes, his collection of twelve in the open class approaching perfection, for they were staged with excellent taste; the sorts were Pea Autocrat, Beet Pragnell, Tomato Champion, Turnips Snowball, Cauliflower Autumn Giant, Cucumber Perfection, Green Globe Artichoke, Main Crop Onion, Potato Snowdrop, Carrot Matchless, Celery Standard Bearer, and Canadian Dwarf Bean. Mr. J. Kightley, gr. to Sir Hereward Wake, Bt., was a good 2nd.

The competition in the amateur and cottagers' classes still maintained the high reputation it has gained at previous exhibitions. Honorary exhibits were largely and well shown by Messrs. J. Perkins & Sons, and by Messrs. T. Perkins & Sons, both of Northampton.

MIDLAND COUNTIES CARNATION AND PICOTEE.

AUGUST 6.—The second annual exhibition at the Elgbaston Botanic Gardens on the above date was most satisfactory; a fine day, good arrangements, and a large number of blooms, and leading exhibitors, but in the north they are so late that growers could not stage a flower.

Mr. Robert Sydenham was 1st for twelve Carnations; 2nd, Mr. Dodwell; 3rd, Messrs. Thomson.

Twelve Picotees: 1st, Mr. C. Turner; 2nd, Mr. Lakin; 3rd, Mr. Dodwell.

The classes for six Carnations, as well as for six Picotees, were both well filled, and for twelve yellow ground or fancy varieties there was a fine lot staged; 1st, Mr. Turner; 2nd, Mr. Dodwell; 3rd, Messrs. Thomson. For twelve self Carnations, a capital lot altogether, 1st, Mr. Turner; 2nd, Mr. Dodwell; 3rd, Mr. Sydenham.

The other classes were also well-filled, and a large number of blooms were staged in the single bloom classes. Prizes were offered for border Carnations in bunches, and a good display was made, and were much admired. Baskets and bouquets of Roses were very effective.

Several new flowers received First-class Certificates:—

To Mr. Charles Turner, for self Carnation Rose Unique and Rose Wynne; and Picotees Lady Emily Van de Weyer and Edith M. Wynne.

To Mr. J. Lakin, Oxford, for Picotees Ne Plus Ultra and Miss Lakin.

To Mr. J. Beale, Leicester, for Picotee Mrs. S. Beale.

To Mr. J. P. Sharp, Birmingham, for Picotee Scarlet Queen.

To Messrs. Thomson & Co., Sparkhill Nurseries, for self Carnations Mrs. Joseph Chamberlain and Negress.

To Mr. J. Lamb, Burton Joyce, Notts, for fancy Picotee Duchess of Portland.

Amongst the newer kinds of Carnations staged, Dodwell's Othello and Dodwell's 1003, purple-flake; Chamdy's Guardsman, S.F., and Chamdy's Gilbert, S.F., are very fine.

In Picotees, many new varieties of fancies and yellow grounds, especially of great quality, were staged.

A large number of honorary exhibits were staged, and several Silver Medals awarded.

THE ALPINE GARDEN.

CAMPANULA WALDSTEINIANA.

Of the many alpine Campanulas suitable for growing on rockwork, none is neater or more flowery than this one. It is in flower all July, and being only a few inches high, and spreading but little at the base, it is easily overgrown if care is not taken about its surroundings. But with this care it becomes one of the most enduring of rock-plants, the first specimen I had of it having lived in the same spot for seven or eight years, and being still as thriving as ever. I have raised many seedlings from it, which vary considerably both in stature and in the size and shape of the ball. There is a closely-allied species which Reichenbach considers to be only a local variety of it, known as *C. Tommasiniana*. It certainly does not differ from it as much as native forms of *C. rotundifolia* differ from one another; but whether a species or a variety, it is not nearly so flowery, and its long narrow balls are less ornamental than those of the other. I think it would not be difficult to pick out a series from seedlings of *C. Waldsteiniana* connecting it with *C. Tommasiniana*. In raising seed it is necessary to take precautions against insects, as the seedlings are so minute that two or three woodlice will clear a whole crop in a night. *C. Wolley Dod, Edge Hall, Malpas.*

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

RUTHENICUS.—Will any reader kindly inform me what country the adjective Ruthenicus, which I take to be a geographical epithet of certain plants (e.g. *Centaurea ruthenica*) refers to? I do not ask before exhausting the resources of several geographical dictionaries and atlases. It seems to be somewhere in eastern Europe [Russia], and is spoken of by De Candolle, *Prodromus*, vol. vi., p. 566, as *Ager Ruthenus*. *C. Wolley Dod, Edge Hall, Malpas.*

ASSESSMENT.—I have built a greenhouse for growing Tomatoes 100 ft. long by 20 ft. wide, 3 ft. from ground to eaves, about 12 ft. to ridge, on wooden posts 3 ft. in the ground, and about 3 ft. above, and boarded 3 ft. up to eaves with about 1 inch boards by 7-inch. It is built on my own land, but the land is mortgaged. The overseers of the parish want to assess it, and we could not agree upon the value of the place. A grower near this parish who has several houses of the same class is not assessed at all, and he maintains the overseers could not assess that class of house, as it was built for a shelter, and came under the same class as a hedge, &c., in a market garden. The collector cannot see that, for if I was letting the place, it would let for more money than it otherwise would have done, and the properties were assessed by the rateable value. Can anyone please advise me on this matter as to whether they can assess me at all; and if so, how much? *G. D.*

HORSE-PLUM.—Will anyone tell me if they know a Plum called the Horse-Plum, and if so whether it is an English or an American variety? *Prunus.*

Obituary.

THOMAS' C. THYNE.—The death of Mr. Thomas Crawford Thyne, partner of the firm of Messrs. Thyne Bros., nurserymen, Indooroopilly, Brisbane, took place on April 11. Mr. Thyne served his apprenticeship with John Stewart & Sons, nurserymen, Dundee; afterwards was in the propagating department of James Dickson & Sons, of Chester; later received the appointment to take charge of a section of the glasshouses in the nurseries of Hugh Low & Co., of Clapton. In 1888 he left the nursery-work to assist his father in the seed business in Dundee. In the summer of 1889 he contracted a severe illness. His medical adviser recommended him to take a trip to the Colonies. He decided to go to Queensland, where his brother, Mr. A. S. Thyne, was already located. In the latter part of 1890, the two brothers commenced work at Indooroopilly as nurserymen. After the hard work and difficulties contingent upon the formation of an entirely new business, success seemed to be just within the grasp of the enterprising brothers, when death overtook Mr. T. C. Thyne, at the early age of twenty-six years.



FIG. 33.—SPECIMEN FUCHSIA (ARABELLA). (SEE P. 192.)

AZALEA "HEXE."—Mr. Otto Forster, writing in the *Garden* of the 6th inst., says with reference to this plant:—"Many years ago I was accidentally present at Messrs. Standish & Noble's when a box of Mr. Fortune's arrived. This contained, amongst other interesting novelties, plants of *Azalea amœna*. One of these plants was carefully cultivated in my garden when I was at Augsburg, and pollen of a very vigorous flower, which showed the Hose-in-hose character very distinctly, was in 1878 transferred to *Azalea Herzog Adolf von Nassau*. *Azalea Hexe* is the result thereof. It partakes of the Hose-in-hose character of *amœna* in a very pronounced way, and is in colour intermediate between both parents. *A. Hexe*, as I can state after several years' careful trial, has many good qualities. It is a very free flowerer (often three buds on the end of a single shoot), forces well and early, the growth of the plant is vigorous, and the colour of the flowers, even when forced early, a very lively rosy-purple. The compact trusses are very useful as button-hole flowers, as these remain an unusually long time fresh when cut nearly a month from the plant. *Hexe* has already a numerous progeny, as I crossed it with *A. linearifolia* (the female parent). Many of the seedlings are Hose-in-hose, and all are agreeably fragrant; they grow very vigorously and the flowers are borne in clusters, but none has the small elegant foliage of the female plant, as I had anticipated."

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.				Inch.	Ins.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.
	Above (+) or below (—) the Mean for the week ending August 6.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.				
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths.	Ins.		
0	2	79	0	16	212	4	143	24.5
1	1	98	0	142	241	4	113	13.9
2	3	101	0	113	186	5	112	13.2
3	4	107	0	106	210	4	105	12.7
4	3	108	0	71	250	4	97	12.5
5	1	132	0	85	138	4	83	9.8
6	0	104	0	71	193	5	108	21.3
7	2	106	0	66	165	6	111	16.8
8	0	125	0	23	117	6	99	13.5
9	0	109	0	62	122	4	119	18.2
10	2	131	0	25	132	1	106	18.6
* 0	aver	137	0	+	30	42	5	98

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts; 1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts; 6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending August 6, is furnished from the Meteorological Office:—

"The weather during this week was moderately fair; very little rain fell over the greater part of England, but in Ireland and most parts of Scotland the sky was generally cloudy, and rain, though not heavy, was of rather frequent occurrence.

"The temperature was a little above the mean in 'Ireland, S.' and equalled the mean in several of

the other western districts, but in all the 'Wheat producing' districts and in 'England, N.W.' it was below; the deficit being as much as 4° in 'England, E.' The highest of the maxima were recorded either on July 31 or August 6, and ranged from 77° in 'England, S. and S.W.' to 69° in the 'Channel Islands,' and to 68° in 'Scotland, W.' and 'England, N.W.' The absolute minima, which were recorded very generally during the night of the 4th and 5th, were very low for the time of year; in 'England, S.W.' (at Llandovery), the sheltered thermometer fell to 35°; in 'England, S.' (at Strathfield Turgiss) to 37°; in 'England, E.' the 'Midland Counties,' and 'Ireland, N.' to 38°; and in most other districts to between 41° and 43°. In 'England, N.E.' however, the lowest temperature was 46°; in 'Ireland, S.' 47°; and in the 'Channel Islands,' 50°.

"The rainfall exceeded the mean in 'Scotland, N.' but in all other districts there was a deficit, and in the east and south of England the fall was very slight.

"The bright sunshine was less prevalent than during the preceding week in all districts excepting the Channel Islands, and in all but a few cases it was below the mean. The percentage of the possible amount ranged from 19 in 'Ireland, S.' to 20 in 'Scotland, N.' and 23 in 'England, N.E.' and 'Ireland, N.' to 41 in 'England, S.W.' 42 in 'England, S.' and 'Scotland, W.' and to 63 in the Channel Islands."

MARKETS.

COVENT GARDEN, August 11.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.]

BUSINESS very tame, and prices have suffered accordingly. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Hydrangea, per doz.	9 0-18 0
Aspidistra, per doz.	15 0-30 0	Ivy Pelargonium, per doz.	4 0-6 0
— specimen, each	11 6-21 0	Lilium Harrisii, doz.	18 0-30 0
Begonia, per doz.	6 0-12 0	Lobelia, per doz.	2 6-4 0
Coleus, per doz.	4 0-6 0	Marguerite, per doz.	6 0-12 0
Cyperus, per dozen	4 0-10 0	Mignonette, doz pots	4 0-6 0
Dracena, each	1 0-5 0	Palms, various, each	2 0-10 0
Ferns, various, doz.	4 0-9 0	— specimens, each	10 6-84 0
— per 100	8 0-12 0	Pelargonium, p. doz.	6 0-12 0
Ficus elastica, each	1 6-7 6	— scarlet, p. doz.	2 0-4 0
Fuchsia, per doz.	3 0-6 0		
Heliotrope, per doz.	3 0-6 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	3 0-4 0	Myosotis, or Forget-me-not, 12 bunches	1 6-4 0
Carnations, 12 blms.	0 9-1 6	— red, per dozen	1 0-2 0
— 12 bunches	3 0-6 0	— yellow (Maréchal), per doz.	2 0-5 0
Cornflower, 12 bun.	1 6-3 0	— red, per dozen	1 0-2 0
Eucharis, per dozen	2 6-4 0	— outdoor, 12 bun.	2 0-6 0
Gardenia, per dozen	1 6-3 0	Stocks, doz. bunches	3 0-6 0
Heliotrope, per doz.		Sweet Peas, doz. bun.	2 0-4 0
— sprays	0 3-0 6	— Sultan, 12 bun.	2 0-4 0
Lilium Harrisii, doz.	2 0-4 0	Tuberose, 12 blms.	0 3-0 6
— various, doz.	1 0-3 0		
Maiden Hair Fern, 12 bunches	4 0-6 0		
Marguerite, per doz.			
— bunches	3 0-4 0		
Mignonette, 12 bun.	1 0-4 0		
Orchids:—			
Cattleya, 12 blms.	4 0-8 0		
Odontoglossum crispum, 12 blms.	2 0-6 0		

ORCHID-BLOOM IN VARIETY.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes Globe, ea.	0 4-0 6	Mushrooms, punnet	2 0-...
Beans, French, lb.	2 6-3 0	Mustard and Cress, punnet	0 4-...
Beet, red, per dozen	2 0-3 0	Parsley per bunch...	0 3-0 6
Carrots, per bunch...	0 4-0 6	Shallots, per lb.	0 6-...
Cauliflowers, each	0 3-0 6	Spinach, per bushel	3 6-...
Cucumbers, each	0 6-0 9	Tomatoes, per lb.	0 4-1 3
Endive, per dozen	2 0-3 0	Turnips, per bunch...	0 4-0 0
Herbs, per bunch	0 9-1 0		
Lettuces, per doz.	1 6-2 0		

POTATOS.

SUPPLIES have again been very heavy; consequently, prices lower for all kinds. Best samples:—Kidneys, 70s. to 80s.; Beauty of Hebrons, 65s. to 75s.

OLD POTATOS.—Finished, *J. B. Thomas.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Currants, Red, ½-sieve	2 6-3 0	Peaches, per doz.	2 0-5 0
— Black, ½-sieve	4 0-4 6	Fine-apples, St. Michael, each	2 0-6 0
Grapes, per lb.	1 0-2 0	Strawberries, per lb.	0 3-1 0
Lemons, per case	12 0-25 0		
Melons, each	1 0-2 6		

SEEDS.

LONDON: Aug. 10.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that Trifolium is in improved request at higher rates; supplies both of French and English are in very narrow compass, and command an advance of 2s. per cwt. Samples of new Rapeseed, Rye, and Tares, are coming to hand. Canary seed is strong at its recent phenomenal rise. Smyrna cablegrains just received quote 77s. per qr. There is no change in Buckwheat, Hemp, or Linseed. Blue Peas and Haricot Beans keep steady. The Board of Trade Returns give the imports of Clovers and grass seeds for last month into the United Kingdom as 4127 cwt., value £2416, as against 2648 cwt., value £2076, for the corresponding period of 1891.

FRUITS AND VEGETABLES.

BOROUGH: Aug. 9.—Quotations:—Cabbages, 3s. to 4s.; Marrows, 4s. to 5s. per tally; Scarlet Beans, 2s. 6d. to 3s. 6d.; Peas, 2s. per bushel; Carrots, 3s. 6d. to 4s.; Turnips, 3s. 6d. to 3s.; Parsley, 2s.; Spring Onions, 4s. to 6s. per dozen bunches; Egyptian do., 3s. 6d. to 6s. per cwt.; English Apples, 3s. per bushel.

SPITALFIELDS: Aug. 9.—Quotations:—English Apples, 2s. 9d. to 6s. 6d. per bushel; foreign Tomatoes, 9d. to 1s. 2d. per box; Gooseberries, 2s. to 3s. 6d.; black Currants, 4s. to 5s.; red do., 2s. 6d. to 3s.; black Cherries, 2s. 9d. to 4s.; Orleans Plums, 4s. 6d. to 6s. per half-sieve; Raspberries, 3d. to 4d. per 1 lb. punnet; fresh Green Gages, 4s. to 4s. 6d. per box; Seakale, 9d. to 1s. 6d. per punnet; Cabbages, 2s. 9d. to 5s. per tally; Spinach, 1s. 6d. to 2s.; French Beans, 2s. to 3s. 6d.; Scarlet do., 3s. to 4s.; Broad do., 1s. 6d. to 2s.; Peas, 2s. to 2s. 6d. per bushel; Turnips, 1s. 6d. to 2s. 6d.; Carrots, 1s. 6d. to 2s. 6d.; Spring Onions, 3s. 6d. to 4s. 6d.; Parsley, 1s. to 1s. 6d. per dozen bunches; Cauliflowers, 1s. to 2s. 6d.; Cabbage Lettuce, 3d. to 6d.; Leeks, 2s. to 2s. 6d.; Vegetable Marrows, 1s. to 1s. 6d.; frame Cucumbers, 1s. 6d. to 2s.; natural do., 9d. to 10d.; Broctoots, 3d. to 4d. per dozen; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Cos Lettuce, 4d. to 8d. per score; Horseradish, 1s. to 1s. 2d. per bundle.

STRATFORD: Aug. 9.—There has been an excellent supply of produce at this market during the past week, and a brisk trade was done at the undermentioned prices:—Cabbages, 4s. to 5s. per tally; Cauliflowers, 1s. 6d. to 2s. 6d. per dozen; Turnips, 1s. 6d. to 3s. per dozen bunches; Mangels, 20s. to 30s. per ton; Beans, 3s. to 3s. 6d. per sieve; Peas, 5s. to 5s. 6d. per bag; Onions, English, 2s. 3d. to 3s. per dozen bunches; Egyptian, 3s. to 3s. 6d. per bag; Apples, English, 4s. to 6s. per bushel.

FARRINGTON: Aug. 11.—Quotations:—English Apples, 4s. per bushel; Gooseberries, 2s. per half-bushel; Grapes (Denia), 4d. per lb.; Currants, red, 3s. 6d. per half-bushel; do., black, 5s. do.; Cherries, black, 4s. per peck; do., 3s. 6d. per 24 lb.; cooking Apples, 4s. 6d. per bushel of 48 lb.; Caroon Cherries, 5s. 6d. to 6s. per bushel; Turnips, 2s. per dozen large bunches.

POTATOS.

BOROUGH, Aug. 9.—Quotations:—English Early Rose, 60s.; Hebrons, 60s. to 65s.; Snowdrops, 70s. to 90s. per ton.

SPITALFIELDS: Aug. 9.—Quotations:—Myatt's Kidneys, 55s. to 65s.; Sutton's Regents, 60s. to 65s.; Imperators, 60s. to 70s.; Hebrons, 60s. to 75s.; Early Rose, 55s. to 65s.; Sutton's Abundance, 60s. to 65s.; Snowdrops, 60s. to 80s. per ton.

STRATFORD: August 9.—Quotations:—Hebrons, 60s. to 75s. White Elephants, 65s. to 75s.; Kidneys, 65s. to 70s.; Snowdrops, 70s. to 80s.; Regents, 65s. to 70s. per ton.

AVERAGE PRICES: London, August 10.—Snowdrops, 70s. to 90s.; Hebrons, 65s. to 80s.; Magnums, 65s. to 75s.; Kidneys, 65s. to 75s.; Early Rose, 60s. to 70s. per ton.

FARRINGTON: August 11.—Quotations:—Red Beauties, 70s. to 75s.; red do., 70s. to 75s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 110s.; do., inferior, 46s. to 75s.; Hay, best, 60s. to 108s.; do., inferior, 26s. to 50s.; and Straw, 20s. to 38s. per load.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending August 6, and for the corresponding period last year:—1892: Wheat, 29s. 7d.; Barley, 23s. 8d.; Oats, 21s. 6d. 1891: Wheat, 39s. 4d.; Barley, 26s. 4d.; Oats, 21s. 2d.

NOTICES TO CORRESPONDENTS.

*** PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

BOOKS: T. W. B. From Eyre & Spottiswoode, government printers, East Harding Street, Fetter Lane, E.C.

CARNATION BEAUTY OF TONBRIDGE.—We are informed by Mr. F. Webber, of Tonbridge Nurseries, that he raised this variety, and exhibited it at the Drill Hall on the 26th ult.

GOOSEBERRIES: Upney.—Your Gooseberries are fairly good, but they are no improvement on existing varieties.

GRAPES: G. H. The roots are healthy, but what has caused the bunch to rot we do not know. Cut off the affected bunches at once. Prune hard-in when the leaves have fallen.—J. D. We believe the Grapes cracked, because at one period, they receive more water than they could utilise. There was a want of balance between supply and expenditure, that is transpiration, but how caused we cannot tell.—Epton. The Grapes sent are not affected with any disease, but have through some means or other, suffered a check. Anything that would produce a sudden check to growth would be followed by such results. We cannot identify variety, from those sent.

NAMES OF FRUITS: R. P. The Peach you forwarded was so badly packed, that it was merely a mass of pulp when it reached here. We are thus unable to say what it had been like.

NAMES OF PLANTS: J. M. (omitted last week) Xylobium squalens.—R. Summers. 1, Thalictrum angustifolium; 2, T. aquilegifolium; 3, Poterium canadense; 4, Salvia pratensis; 5, Cirsium oreganum; 6, Celsia arcturus; 7, Thalictrum glaucum; 8, Sidalcea.—H. M. G. 1, Melampyrum arvense; 2, Stachys Betonica; 3, Ballota nigra.—G. S. 1, Epilobium angustifolium; 2, double Potentilla; 3, Dendrobium crystallinum; 4, Gynogramma calomelanos; the proliferous Rose, not uncommon.—K. J. G. 1, Hymenocallis littoralis; 2, Hymenocallis fragrans; 3, Pellionia Daveauna; 4, Sobralia macrantha; 5, Pentas carnea; 6, we do not recognise from the leaf only; the Chrysanthemums, when received, appeared to be healthy and free from pest.—S. W. 1, Lysimachia Nummularia; 2, Eryngium alpinum; 3, Echinops Ritro; 4, Eupatorium cannabinum; 5, Antennaria margaritacea; 6, Veratrum album; 7, Echeveria scabra; 8, Urtica campestris variegata.—J. H. 1, Alnus imperialis; 2, Liquidambar orientale; 3, Thalictrum; 4, Periploca græca.—G. S. Epidendrum fragrans.—J. S., Maidenhead, Phajus bicolor.—L. C., Rugby, Oncidium pulvinatum.

PEACHES: R. H. M. We do not think the quassia chips would flavour the fruit. The taste is of tannin not of quassia, and is probably due to deficient sun heat and light.

PETUNIA: J. T. Not at all uncommon.

SCHEDULE DRAFTING: Local Show. The wording of the schedule you refer to is much too vague, and allows of many interpretations. We are, however, of opinion that the judges were quite right in disqualifying an exhibit which included 12 varieties only. To interpret the schedule in such a manner might result in 12 varieties of Potatoes or other vegetable being staged.

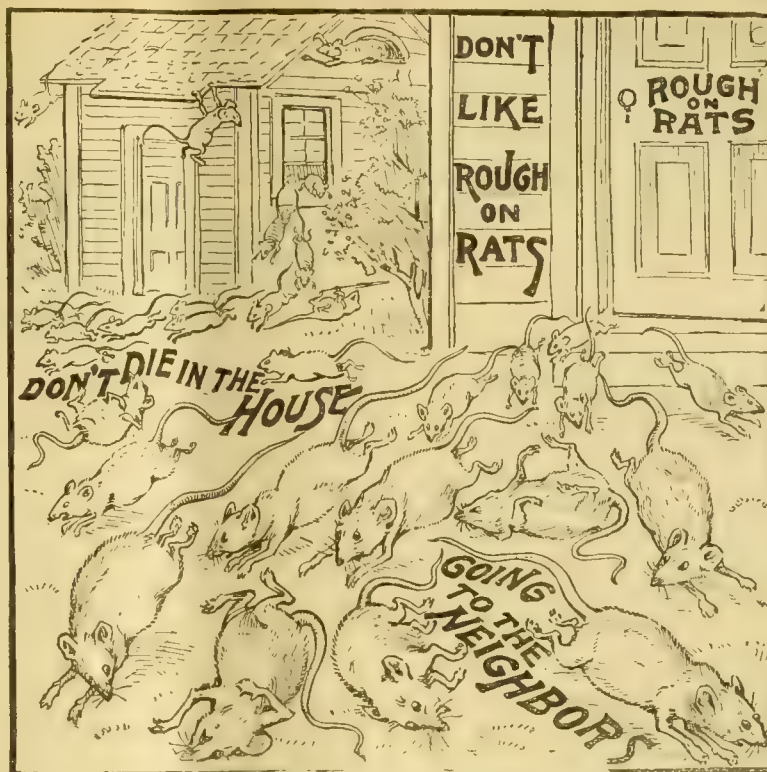
TURNIP: J. V. W. The swellings are caused by a beetle, Ceutorhynchus sulcicollis. Similar swellings are produced by a slime fungus, as in Cabbages.

WIRE: E. M. P. The wire is suitable, providing the trees are protected by a piece of hose or cork being placed between them and the wire.

COMMUNICATIONS RECEIVED.—Cochet, Suisses.—J. R.—E. C.—Frederick Roemer, Quedlinburg.—W. Max Cornu, Paris.—W. R.—A. E. R.—F. W. B.—Geolog. Surrey, Canada.—J. H.—P. Fry (with thanks).—J. H. H., Trinidad.—W. F., Jamaica.—T. H.—J. E. E.—S. G.—H. E.—F. V. D.—J. R. J.—A. D.—Pisum.—R. D.—E. M.—W. A. C.—J. D.—A. D. W.—J. S.—W. M.—A. N.—H. G.—M. H.—Deards (many thanks).

PHOTOGRAPH RECEIVED.—N. M. S.

SPECIMENS RECEIVED.—C.—W. H.



How to Use "ROUGH ON RATS."

WHICH is the most extensively advertised, the best known, and has the largest sale of any article of its kind in the world. Used by all Nations. Some folks, after buying an article, will destroy or throw away the directions without reading them. Now and again some such person will say rats won't eat ROUGH ON RATS. If asked how they used it, it will be found they sprinkled it about, or at most, mixed it with a little flour or meal. Ask a complainer if he tried ROUGH ON RATS mixed with lard, grease, or butter, and spread on bread, cut in pieces, and laid about; or if he put it on raw or cooked meat, the leavings of fish; or if he has mixed it with cheese; or if he has mixed it with eggs and meal, or grease and meal, and if he covered up or removed other food rats could get at; to all of which he would probably answer no. Now, it's a notorious fact, known all over the world, that ROUGH ON RATS has never been equalled as a rat, mouse, insect, and vermin destroyer; and the cause of any failure is due to the stupid dullness or carelessness of the purchaser, rather than the inefficiency of the article. Occasionally an individual is found who will say the rats eat some of the ROUGH ON RATS, but it don't kill them. He don't see any dead ones. If asked if he hears or sees any live ones, he says no. Is it necessary that you see the dead ones? So long as you are clear of rats and mice, what more do you want? If occasionally a few scattering ones are left, set ROUGH ON RATS again, using some other material to mix it with. ROUGH ON RATS is a slow but sure poison. It is not necessary that each and every rat get the dose set. If a few of them get it, it makes them so sick and miserable they will kick up such a rumpus, and suffer so much that all are terrified and scared from the dreaded premises, and those that do get the dose—in their misery, work their way out of the building in search of relief and water, and die or stroll away. Thus your house is completely rid of vermin, and it is not necessary that you see dead or dying rats lying about to convince you. Every time you set or reset ROUGH ON RATS, use a different medium or vehicle to mix it with. See also special instructions with each package for use of ROUGH ON RATS, in clearing out Cockroaches, Water Bugs, Beetles, Ants, Insects, Hen Lice, Potato Bugs, Moths, Squirrels, Rabbits, Sparrows, &c. 7½d. and 1s. boxes, at Retail Chemists only. Wholesale only, F. NEWBERRY AND SONS, 1, King Edward Street, Newgate Street, London, E.C.

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MR. EDMUND C. WHEELER, late Head Gardener to Major BEST, Park House, Bexley, as Head Gardener to F. J. GORDON, Esq., Woodside, Burstow, Surrey.

MR. H. HOWARD, late of Greylands, Melton, as Head Gardener to EDWARD BROOKE, Esq., Ufford Park, Woodbridge, Suffolk.

MR. W. ANDREWS, until recently Foreman in the gardens at Chilton Park, Maidstone, as Head Gardener to Viscount FALMOUTH, Tregothan, Truro.

MR. J. DUDLEY has been appointed Head Gardener to Captain WETHERALL, Silex Hall, Kelvedon, Essex.

CATALOGUES RECEIVED.

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ANT. ROOZEN & SON, Overveen, near Haarlem—Dutch and Cape Bulbs.

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WANTED, as SECOND, in a small Nursery, a steady MAN, accustomed to general Nursery Work. Apply, with particulars of experience, to LAING AND MATHER, Nurserymen, Kelso-on-Tweed.

WANTED, an active, energetic, young MAN, for a Market Nursery. Just starting, where a variety of Plants, Flowers, &c., will be grown. Must have some experience of Propagating in quantity, and in a Market Establishment.—Age, experience, and wages expected, to M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a young MAN, well-up in Cucumber Growing. State wages, with Bothy. Also, a STOKER; one who understands Steam Boilers (chiefly night-work).—Wages, &c., to E. BENNETT, F.R.H.S., Harfield Grove, Uxbridge.

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WANTED, a good GARDEN LABOURER, married, no family, whose wife would be able to assist in a Greengrocer's Shop.—Apply, with particulars of age, wage, &c., to A. GOODMAN, Caversham, Reading.

WANTED, a respectable Man for CARMAN, in Nursery.—Apply, H. PESTER, Durant's Harbour, Enfield Highway.

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WANTED, in autumn, an assistant SHOP-MAN. Apply, with particulars of experience and age, to LAING AND MATHER, Seed Merchants, Kelso-on-Tweed.

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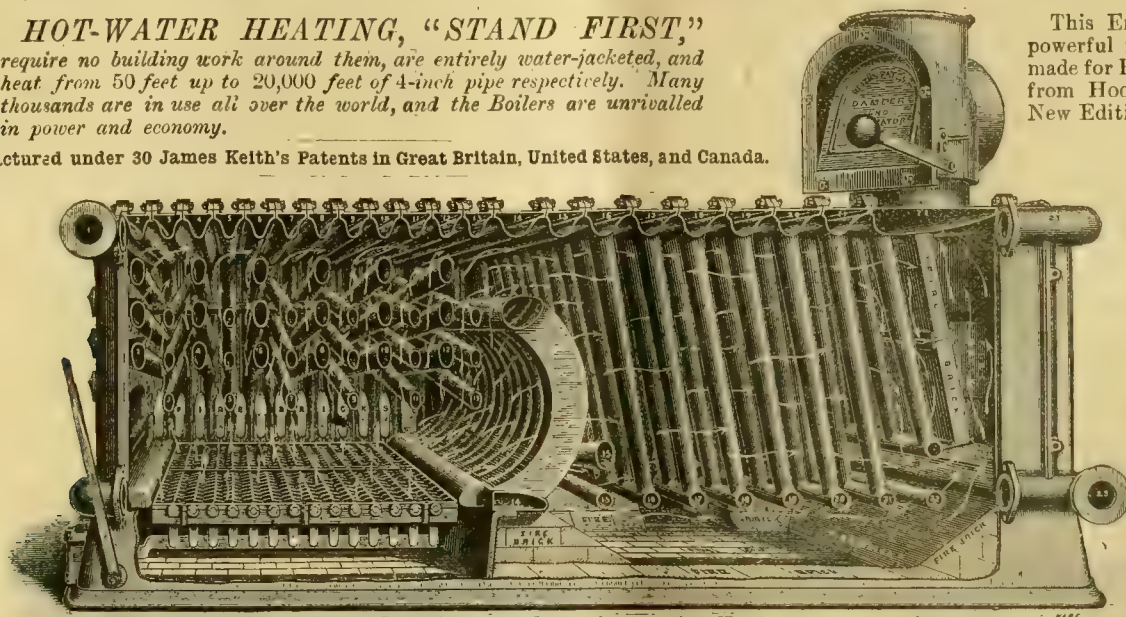
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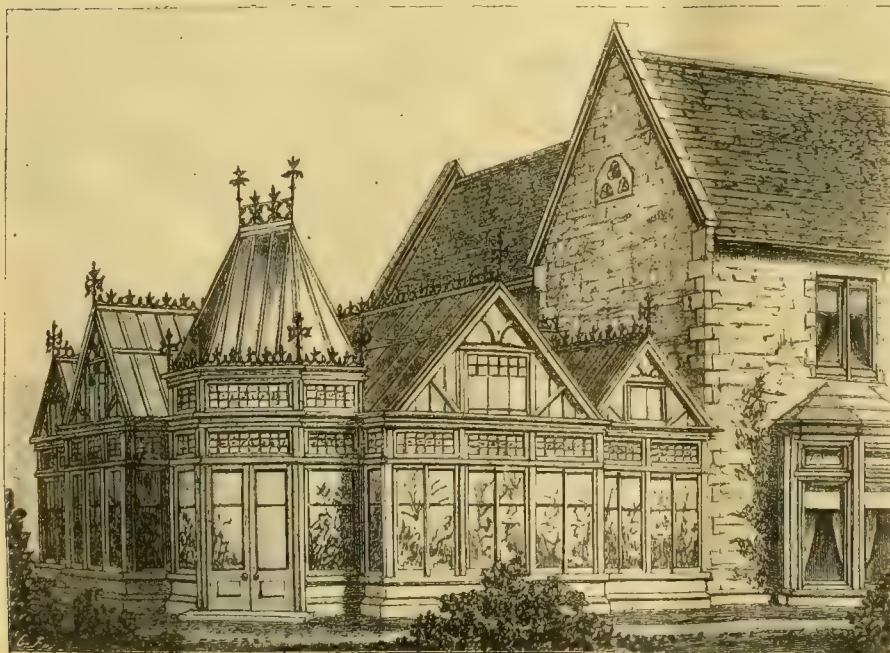
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The GARDENERS' CHRONICLE

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WANTED, ASPIDISTRA ELATIOR, ditto, variegated; FICUS ELASTICA, ditto, variegated; GERANIUM CUTTINGS, leading kinds, also Tricolor and Bronze. A few good pots of EUPHARIS AMAZONICA and CANDIDA; also good EUPHARIS BULBS. Quote price and quantity, to RICH. BLACKBURN AND CO., Florists and Seedsmen, Selby, Yorks.

WANTED, IN EXCHANGE for DENDROBES, CATTLEYAS, &c., Large and Small Plants of ERYTHRINA PARCELLII, MARANTAS, large CROTONS, CANNAS of sorts, VALLOTA PURPUREA, CACTUS DAHLIAS, white and scarlet. SANDER AND CO., St. Albans.

THE BEST CABBAGE for PRESENT SOWING.

SUTTON'S FLOWER OF SPRING.—Remarkably early, compact habit, having few outer leaves; firm hearts, of excellent quality. One of the very best for spring use. Mr. B. Stokoe, gardener to H. Fenwick, Esq., Sandhoe, says: "I have tried Flower of Spring Cabbage with five other sorts, all sown and planted at the same time, in the same ground. Flower of Spring is the earliest, finest in shape, and dwarfest in habit. I can recommend it to anyone." Price of seed, 1s. per ounce, post-free.

SUTTON'S SEEDS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

CARNATION MALMAISON (flesh colour). Strong Plants, in 32-pots, price 18s. and 21s. per dozen. Cash with order. JOHN STANDISH AND CO., Royal Nurseries, Ascot, Berks.

SMILAX, fine strong stuff, in 60's, fit for potting on. AMPELOPSIS VEITCHII, in 48's, Cheap. C. JOHNSON AND CO., The Nurseries, Hampton-on-Thames.

DAFFODILS.—DAFFODILS.

"Ye Original Little Book" of same for the Millions. Now ready, and post-free, (Bulbs magnificent), from WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

LOVEL'S YORKSHIRE STRAWBERRIES. Well-rooted runners of Thury, Noble, Paxton, President, Queen, and others. Sample Packet, 6d. Price LIST on application.

W. LOVEL AND SON, Strawberry Growers, Driffield.

FOR SUCCESS ON EXHIBITION TABLES, send to Mr. Robt. Sydenham, Roseleigh, Birmingham. Now ready, and post-free, (Bulbs magnificent), from WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

ROBERT SYDENHAM, Roseleigh, Birmingham.

150,000.—Special Offer of Kentias.

W. ICETON has a large quantity of the above to offer, very reasonable, at from £7 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well established, at £30 per 1000.

W. ICETON, Putney, S.W.

Important Notice.

FICUS ELASTICA VARIEGATA.—Upwards of a Thousand Plants of the above valuable Ficus, in various sizes, will be included in H. B. MAY'S Great ANNUAL AUCTION SALE on September 12, 1892.

Catalogues of the Auctioneers, Messrs. PROTHEROE AND MORRIS, Cheapside, London, E.C.; or of H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton.

In Chancery.

FRUIT TREES.—80,000 very choicest kinds.

Apples, Pears, Cherries, Peaches, Filberts, and Plums; 20,000 noble, tall, standard Victoria Plums and Damsons, 4 and 5-yr. old; and 2000 Rhododendrons and pretty Shrubs, Roses, and Hardy Flowers. In small or large quantities, Purchasers' selection. See CATALOGUES.—LAND STEWARD, Hon. GERTRUDE JONES, Churchfield, Cradley, near Malvern.

Boulton & Paul's Outdoor Requisites.

BOULTON AND PAUL MANUFACTURERS, NORWICH.

Every Requisite for the Kennel and Poultry Yard, Aviaries, Pigeon Cotes, Pheasantries.

Requisites for the Garden, Park, Pleasure Grounds.

Wire Netting for Game and Sheep. Iron and Wire Fencing, Gates, &c.

Send for Illustrated CATALOGUES, post-free, on application.

J. WEEKS & CO., Horticultural Builders

to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S IMPROVED VINE and PLANT MANURE.

—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent: Mr. GEORGE, 10, Victoria Road, Putney. WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

WEDNESDAY NEXT.

EXTENSIVE IMPORTATION OF BULBS
FROM HOLLAND.

MR. J. C. STEVENS begs to announce that his first SALE of DUTCH BULBS will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 24, at half-past 12 o'clock precisely, and will contain the usual assortment of first-class Bulbs from some of the most renowned Growers in Holland.

On view morning of Sale, and Catalogues had.

N.B.—None but good and reliable Bulbs will be offered.

THURSDAY, SEPTEMBER 1.

SPECIAL SALE OF IMPORTED AND
ESTABLISHED ORCHIDS.

MR. J. C. STEVENS begs to announce that his NEXT SALE of IMPORTED and ESTABLISHED ORCHIDS will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 1, at half-past 12 o'clock precisely. Gentlemen wishing to enter lots for this Sale, should send their lists not later than THURSDAY NEXT.

Monday and Thursday Next.

DUTCH BULBS.

SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, August 22, and THURSDAY NEXT, August 25, large consignments of named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white ROMAN HYACINTHS and Paper-White NARCISSUS received direct for Unreserved Sale. These early auctions have been specially arranged in lots to suit the trade and other large buyers. The Auctioneers will be pleased to enter the names of intending purchasers on their permanent lists who may desire a regular supply of CATALOGUES for these Sales.

Auction Rooms and Offices, 67 and 68, Cheapside, London, E.C.

Peasmarsh, and Rye, Sussex.

By order of the Executors of the late Mr. J. Golding.

TO MARKET GARDENERS, FRUIT GROWERS, and others seeking a thoroughly genuine Business, established for many years.

MESSRS. PROTHEROE AND MORRIS, in conjunction with Mr. J. J. FRUIN, will SELL BY AUCTION, at the "George Hotel," Rye, Sussex, on WEDNESDAY NEXT, Aug. 24, at 3 o'clock P.M., in Two Lots, the exceedingly choice and productive FREEHOLD MARKET GARDEN and FRUIT GROUNDS, known as Little Lea, Peasmarsh, Sussex, comprising an area of 14 a. 1 r. 7 p., abundantly stocked with the best marketable kinds of top and bottom Orchard Fruit Trees, together with the convenient detached Residence, Stabling, and Outbuildings.

Also the LEASEHOLD MESSUAGE on the North side of the Channel running from the Fish Market to the Strand in the Town of Rye.

May be viewed. Particulars and Plans had at the place of Sale, of Messrs. DAVENPORT JONES and GLENISTER, Solicitors, Bank Buildings, Hastings; of Mr. J. J. FRUIN, Estate Agent, 31, White Rock Place, Hastings; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday, September 9.

A VALUABLE COLLECTION of ESTABLISHED ORCHIDS, including many rarities, for UNRESERVED SALE, by order of E. WISCHMUSEN, Esq., who is giving up their cultivation owing to ill-health.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL BY AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, September 9, 1892, at half-past 12 o'clock, the ENTIRE COLLECTION of ESTABLISHED ORCHIDS. The following will be found amongst the plants to be offered:—

Cattleya Skinneri alba, 5 plants	Cypripedium majus	Selligerum
" Wagneri Lowiana, 2 plants	" Charles Canham	
" Exoniensis, 6 plants	" Ashburtoniae expansum	
" Trianae alba	" vexillarium	
" Wagneri, 4 plants	" Mrs. Charles Canham	
" Martelli, 2 plants	" Dendrobium Falconeri giganteum	
" Sororia	" Lælia anceps alba	
" Reinickiana, 3 plants	" Pennini nivea	
" Trianae Osmanii	" purpurata Lowiana	
" Fausta delicata	" Philbrickiana	
" Dominiana	" Guatemalensis Wisch-	
" Morganiae	" hanseniana	
" Hardyana, fine plant, with sheath	" anceps Dawsoni	
" Mastersonii	" Culvertriana	
" Wagneri grandiflora	" amanda	
" Brymeriana	" elegans Blunty	
" Trianae Dodsonii	" Turneri	
" Cologyne cristata alba	" xanthina agraphis	
" " lexoniensis	" callistoglossa	
Cypripedium grande	" Mitchellii	
" " anthum superbum	" hammea	
" purpuratum	" euspatha	
" Polium	" Oncidium ornithorrhynchum	
" insigne Wallacii	" album	
" Morganiae, 7 growths	" Phalaenopsis leucorrhoda grandiflora	
" Euryandrum	" diliora	

Catalogues may be had, when ready, of the Auctioneers.

Friday Next.
ONCIDIUM MARSHALLIANUM.
CATTLEYA AUREA.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. CHARLES WORTH, SHUTTLEWORTH AND CO., Heaton, Bradford, and 213, Park Road, Clapham, S.W., to SELL BY AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, August 26, at half-past 12 o'clock precisely, an exceedingly fine consignment of their superb strain of CATTLEYA AUREA,

which has turned out the finest varieties in cultivation, such as Cattleya marmorata, C. Massiana, C. Hardyana, and other natural hybrids. For richness in colour they outstrip anything seen. We have spared no expenses to have the plants from the same locality, and all lovers of this charming Cattleya should avail themselves of the opportunity and secure good strong plants from the stock offered, which we can recommend with every confidence as a good investment. A small plant of C. Massiana flowered from our importation realised 95 guineas at the Howick House sale last April. All the plants offered are in special good condition, and sure to please. The sale will also include a grand lot of the beautiful ONCIDIUM MARSHALLIANUM, LÆLIA PERINI, CATTLEYA CRISPA, and other CHOICE ORCHIDS well worth the attention of the trade and large buyers.

Also 60 plants of CATTLEYA SUPERBA, and 200 DENDROBIUM MACCREAI (another property), ORCHIDS in FLOWER, &c.

On view morning of Sale, and Catalogues had.

Balham, S.W.

SHORT NOTICE.—CLEARANCE SALE OF GREENHOUSE PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises at the back of Leigham Cottage, Balham High Road (entrance from Verran Road), on TUESDAY, August 30, at 11 for 12 o'clock precisely, without the slightest reserve, by order of Mr. J. G. Waite, who has sold the land for building purposes, the whole of the STOCK of GREENHOUSE PLANTS, consisting of specimen white CAMELLIAS and AZALEAS, 400 ASPIDISTRAS VARIEGATA, specimen STEPHANOTIS, and other plants in pots; also twelve large vases, and other sundries. Fuller particulars will appear next week.

GREAT ANNUAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS beg to announce that the GREAT ANNUAL TRADE SALES of WINTER-FLOWERING HEATHS, GREENHOUSE and other PLANTS, have been fixed to take place as follows:—

MONDAY, September 12.—At the DYSON'S LANE NURSERY, UPPER EDMONTON, by order of Mr. H. B. May.

TUESDAY, September 13.—At the BURNT ASH LANE NURSERIES, LEE, S.E., by order of Messrs. B. Maller & Sons.

WEDNESDAY, September 14.—At the LEA BRIDGE ROAD NURSERIES, LEYTON, E., by order of Mr. John Fraser.

THURSDAY, September 15.—At the BRIMSDOWN NURSERY, ENFIELD HIGHWAY, by order of Mr. John Maller.

FRIDAY, September 16.—At the LONGLANDS NURSERY, SIDCUP, by order of Messrs. Gregory & Evans.

TUESDAY, September 20.—At the MOAT NURSERY, EAST GRINSTEAD, by order of Messrs. Roberts Brothers.

Particulars will appear in future advertisements.

Catalogues may be had (when ready) of the Auctioneers, 67 and 68, Cheapside, London, E.C.

WANTED, TO RENT, a SMALL NURSERY, or PIECE of GROUND suitable for the same, within 10 or 12 miles of Covent Garden.—Apply, W. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a FLORIST and PLANT BUSINESS.—House and Shop, with Conservatory attached.—W. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR DISPOSAL, a SMALL NURSERY—about 3 acres. For particulars, apply to—E. B., The Limes, Fordham, Cambs.

FOR SALE.—About 160 feet run of First-class VINERY, in full Working Order, with matured Vines; and SITE FOR SHOP, in a good business part of the Town of Reading; suitable for Working Gardener. Apply to—W. G. MILLAR, 10, High Street, Reading.

TO BE SOLD, the BUSINESS of a FLORIST'S SHOP and compact NURSERY, all Glass, near Covent Garden; or a PARTNER may be ACCEPTED. This is a good chance for a pushing young man.—W. F., 6, Eastcote Terrace, Eastcote Street, Stockwell.

TO BE DISPOSED OF, the prosperous little NURSERY, known as Grove Nursery, East Cowes, I.W., with Plant and Fruit Houses, Pits, Frames, &c. Stock at valuation. Also about half an Acre of FRUIT TREES, in good bearing condition, and two productive Vineries. F. HILLS, Grove Nursery, East Cowes, I.W.

To Lovers of Gardens.

TO BE LET, a charming old MANOR HOUSE, recently restored, added to, and decorated, with very good walled Gardens, fully stocked with a fine Collection of Herbaceous Flowering Plants and Shrubs, and in perfect order; large Lawn Tennis Ground, Conservatory, Greenhouse, and Range of Heated Pits. The House contains ten Bed-rooms, five Sitting-rooms, and usual offices; Stabling for four or six Horses, Dog Kennels, Poultry Sheds, Mushroom House, and Paddock. Two miles from Lewes, Sussex; close to Church and Post; one hour and a quarter from London. Unfurnished; rent, £120. For further particulars, apply to J. HORSLEY PALMER, The Lawn, Bournemouth.

MAIDEN LOAM FOR SALE.—About 200 loads. Buyer to dig and cart. Apply—T. HOUGHIN, St. Mary's Cemetery, Kensal Green, W.

EXHIBITIONS.

SANDY (Bedfordshire) FLORAL and HORTICULTURAL SOCIETY.—Twenty-fourth Great Autumn Show of Plants, Flowers, Fruit, Vegetables, Dogs, Pigeons, Rabbits, Cage Birds, &c. Prizes £320. Dairying Competitions, &c. FRIDAY, August 26. W. GREEN, Sec., Sandy.

BATH AUTUMN SHOW.—

WEDNESDAY and THURSDAY, Aug. 31 and Sept. 1.

Amongst the Prizes offered are for:—

1st 2nd 3rd

12 Foliage and 6 Stove or Greenhouse Plants £12 £3 £4

6 Stove or Greenhouse Plants ... £1 £2 10s. £1 10s.

6 Orchids ... £2 £1 ...

Group of Plants, not less than 100 sq. ft. ... £5 £4 £3

Collection of Fruit, 12 dishes... £3 £1 £2

8 Bunches of Grapes, 4 varieties ... £5 £3 £2

And 5 other Classes for Grapes in varieties. Prizes in proportion.

Entries close August 26. For Schedules, &c., apply to—

2, Northumberland Buildings, B. R. F. PEARSON, Secs.

Bath. W. JEFFERY,

BRIGHTON and SUSSEX (NEW) HORTICULTURAL and MUTUAL IMPROVEMENT SOCIETY,

Amalgamated with the Chrysanthemum Society,

FIRST SUMMER SHOW will be held in

THE DOME and CORN EXCHANGE, ROYAL PAVILION,

TUESDAY and WEDNESDAY, AUGUST 31 and 31.

Schedules may be obtained from the Hon. Sec.—

MARK LONGHURST, 18, Church Road, Hove, Sussex.

N.B.—Entries close August 22, 1892.

NATIONAL CHRYSANTHEMUM SOCIETY.

ROYAL AQUARIUM, WESTMINSTER.

EARLY EXHIBITION, September 7 & 8.—Valuable PRIZES

for CHRYSANTHEMUMS, DAHLIAS, GLADIOLI, and VEG-

TABLES. Schedules and Prizes on application to

RICHARD DEAN, Sec., Ranelagh Road, Ealing, W.

PROTHEROE AND MORRIS, HORTICUL-

TURAL MARKET GARDEN and ESTATE AUCTIONEERS and

VALUERS, 67 and 68, Cheapside, London, E.C., and at Leyton-

stone, E. Monthly Horticultural Register had on application.

VERY CHOICE LILIUM HARRISII,

7 to 9 inches round, 6s. per doz.; 9 to 11 inches round,

10s. per doz. Chionodoxa Lucille, 3s. per 100; extra fine,

4s. 6d. per 100. Elwes' Giant Snowdrop, 4s. per 100; 35s. per

1000. Full List on application.

ROBERT SYDENHAM, Roseleigh, Birmingham.

ORCHIDS A SPECIALTY.—

Please write for New Illustrated Price LIST of well-

established, healthy, and easily-growing plants.

W. L. LEWIS and CO., F.R.H.S., Chase Side, Southgate,

London, N. Nursery, Orchid Road.

PRIMULA, DOUBLE WHITE.—An extra-

ordinary good lot in large 60-pots. Prices per 100 or

1000 on application.

W. E. MARSHALL, Abbey Wood, Kent.

FOR SALE, ARAUCARIA EXCELSA,

14 feet high; also a fine specimen of LATANIA BOR-

BONICA. Healthy plants. For price, apply,

GARDENER, Springwood, Dartford, Kent.

FOR SALE, a fine SPECIMEN of STAG-

HORN FERN, in perfect condition. Measures 10 feet in

circumference.—B., Manor House, Hemingford Abbots, Hants.

FOR SALE, large SEEDLINGS of POLY-

ANTHUS, Gold Laced and Primrose Mixed. About

twenty-four colours, from pure white to dark maroon. 6s. per

100 for cash. Send for sample plants, 6d.

A. WHITE, Stour Valley Nurseries, Bures, Suffolk.

TRADE OFFER OF PALMS.

COCOS Weddeliana, in thumbs ... at 20s. per 100.

" " " in 60's, ... at 55s. per 100.

KENTIA Fosteriana & Belmoreana, in thumbs, at 20s. per 100.

" " " in 60's, ... at 60s. per 100.

" " " in 48's, ... at 24s. per doz.

" " " in 32's, ... at 48s. per doz.

SEAFORTHIA elegans, in 60's, ... at 32s. per 100.

" " " in 48's, ... at £5 per 100.

W. Icton has a fine Stock of Asparagus plumosus nanus,

in 48's and 60's; Pandanus Veitchii, Dracena Lindenii, and

Ficus elastica.—W. ICTON, Putney, S.W.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

HAVE AN

IMMENSE STOCK of ORCHIDS,

All in the finest health and condition,

And they are constantly receiving importations from various parts of the world.

The Company earnestly request the inspection of their Stock by intending Purchasers.

New, Descriptive, and Priced CATALOGUES post-free on application to the Company.

THE VINEYARD AND NURSERIES,
CARSTON, NEAR LIVERPOOL.

ROSE GUSTAVE PIGANEAU (H. P.).—WM. PAUL AND SON, who were the first to exhibit and receive Certificates for this fine New Rose, beg to solicit Orders for Autumn Delivery. Good Dwarf Plants, 1s. 6d. each; prices for quantities on application. A fine Collection of Roses now in bloom; inspection cordially invited. Pauls' Nurseries, Waltham Cross, Herts.

ANEMONES, best double French Chrysanthemum-flowered, including La Brillante, La France, Gloire de Nantes, Etoile de Bretagne, &c.; quality guaranteed. 15s. per 100. J. H. HAMON, 78, Ladypool Road, Birmingham.

CALAMUS ROXBURGHII, a few dozen pots, three plants in each, ready to pot on, 9s. per dozen pots; DRACENA NUTANS, green-leaved Australian var., fine for decorating, 5s. per dozen, in 60's; FERNS, about ten best decorative vars., in 60's, 3s. per dozen; ARUM LILIES, strong roots, 6s. per doz.—R. MARIES, Florist, Lytham, Lancashire.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.
N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

CARNATIONS.—CARNATIONS. Early Layers, for Winter and Early Spring Flowering. 1000 MRS. MUIR (New Winter-flowering White). } Price, 20s. per 100.
1000 PRIDE OF PENSURST. }
500 MISS JOLLIFFE. }
1000 ALLEGATRIERE. }

Apply to T. PAGE, Grove Nursery, Teddington, Middlesex.

Fruit Trees a Specialty.
STRAWBERRIES, one of the largest and best collections in the Trade, including all the best of the New and Old Varieties. Full Descriptive Catalogue on application.

FRUIT TREES of all kinds, a very large stock. JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

The Best Present for a Gardener.
VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published. Third Edition, just out. Price 5s., post-free, 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

CHARLES VUYLSTEKE, NURSERYMAN, Loochristy, Ghent, Belgium, offers VERY BEST PLANTS, at LOW PRICES, of Azalea indica, Azalea mollis, and Azalea mollis flore pleno, Hardy Ghent Azaleas, Camellias, Rhododendrons, Palms, best sorts for Table and Room Decoration; Dracenas Australis, Brantii, rubra, &c., Ficus elastica, Orchids, &c., &c. New CATALOGUE now ready, and may be had free from—Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

SCARLET VAN THOL TULIPS, 2s. 6d. per 100; 23s. per 1000.
EARLY WHITE ROMAN HYACINTHS, average bulbs, 1s. 4d. per dozen; 10s. per 100. The pick of the market, nearly 6 inches round, 2s. per dozen; 15s. per 100.
NARCISSUS ORNATUS, 9d. per dozen; 5s. 6d. per 100.
GOLDEN SPUR, the finest yellow for forcing, 3s. 6d. per dozen; 25s. per 100; **FREESIA REFRACTA ALBA**, 1s. per dozen; 5s. 6d. per 100; extra fine, 1s. 3d. per dozen; 9s. per 100.
ROBERT SYDENHAM, Roseleigh, Birmingham.

BULBS FOR AUTUMN FLOWERING, &c. Descriptive LIST on application.
Beautiful and rare species of CROCUSES, as yet almost unknown. Beautiful autumn-flowering MEADOW SAFFRON, producing a beautiful effect in September. FLOWER OF THE WEST WIND, white; LILY OF THE FIELD, yellow. Autumn-flowering SCILLAS and SNOWFLAKES, GUERNSEY and BELLADONNA LILIES. For early planting, ELWES' GIANT SNOWDROPS, CHIONODOXAS (Glory of the Snow), ANEMONE FULGENS (Scarlet Wind-flower of the Riviera), ROMAN HYACINTHS, &c.
BARR AND SON, King Street, Covent Garden, London, W.C.

Bulbs for Early Forcing.
DICKSON AND ROBINSON have just received, and offer, of unexcelled quality:—HYACINTHS, Single White Roman, 12s. 6d. and 15s. per 100. HYACINTHS, Single White Italian, 10s. 6d. per 100. HYACINTHS, Single Blue Italian, 8s. 6d. per 100. HYACINTHS, Double Rose Italian, 10s. 6d. per 100. NARCISSUS, Large-flowered Paper-white, 7s. 6d. per 100. NARCISSUS, Double Roman, 6s. per 100.
Carriage Paid. Descriptive CATALOGUE on application. Seed Warehouse, 12, Old Millgate, Manchester.

FERNS! FERNS!!—Trade.—Greenhouse and Stove, 25 saleable sorts, 12s. per 100; out of pots, 10s. Strong Seedling Ferns, stores, in variety, 6s. per 100, 50s. per 1000. Large Adiantum cuneatum, Aralias, Cyperus, all in 48's, 6s. per dozen. Palms, Ficus, Hydrangeas, 1s. each. Large Ferns, 10 best sorts, 5s. 6d. per dozen, in 48's. Adiantum cuneatum and P. tremula, extra size, in 2½-inch pots, 16s. and 20s. per 100. Packed free, Cash with Order.
J. SMITH, London Fern Nurseries, Loughboro' Junction, S.W.

Many Acres of Lilies of the Valley!
T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year-old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

FOR ORCHIDS and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

CYCLAMEN SEED.—World-renowned strain, Highest Awards and Certificates. Mont Blanc, Baroness Burdett-Coutts, Grandiflora, Excelsior, Sunray, Crimson King, Duke of Fife, Princess May, Mauve Queen, Brilliant, and other varieties. See page 340, March 12, of this paper. Trade packets, from 5s.; special prices per ounce.—The ST. GEORGE'S NURSERY CO., Cyclamen Specialists, Hanwell, W.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well-grown Stock of ERICAS (Hymalis, and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, of sorts; ADIANTUM CUNEATUM, and other Ferns; PALMS, in variety; GARDENIAS, STEPHANOTIS, FICUS ELASTICA, CROTONS, GREVILLEAS, TEA ROSES (in pots), BORNIAS MEGASTIGMA, and HETEROPHYLLA; VINES in pots, &c. An inspection is invited.
TRADE CATALOGUES forwarded on application.
The ANNUAL SALE by AUCTION will be held on Tuesday, September 13. Burnt Ash Lane Nurseries, Lee, S.E.

THE KENT STRAWBERRIES

Are the best, and all the finest sorts are well grown by
GEORGE BUNYARD AND CO., Maidstone,
Who will be pleased to send a copy of New Descriptive Strawberry LIST post-free.

COMPETITOR STRAWBERRY (New) proves to be the hardiest of any, and is a prodigious cropper, early and handsome. Extra transplanted runners now ready. Per 100, 25s.; per dozen, 4s., post-free.
GEORGE BUNYARD AND CO., Old Nurseries, Maidstone.

"ONLY THE BEST."

THE BEST BULBS ARE THE CHEAPEST.

GARAWAY & CO.'S
HYACINTHS, TULIPS, & OTHER BULBS
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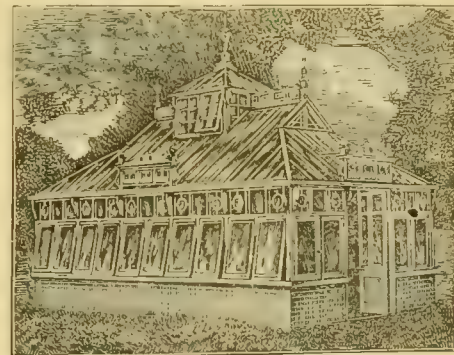
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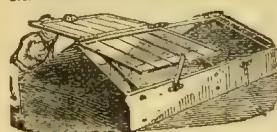
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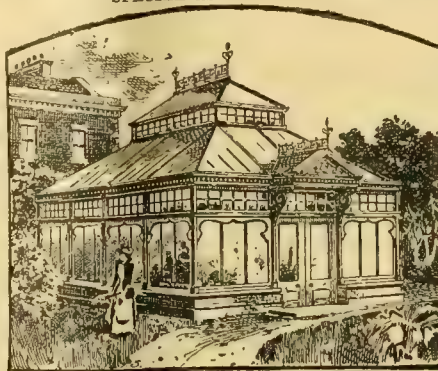
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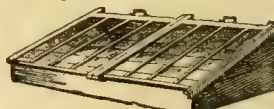
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THE Gardeners' Chronicle.

SATURDAY, AUGUST 20, 1892.

THE POTATO CROP.

THE returns which we received from all parts of the British Islands some time since were so uniform in general character, that it is hardly necessary to publish them in full. We may, however, select a few notes from various districts as containing information of interest to our readers. Speaking generally, the early varieties have yielded good crops; and the later crops, for which it is still too early to predicate with certainty, bid fair to yield unusually fine crops, especially in Kent. The amount of disease, so far, is slight in most places.

Potatoes are looking well, although late. Sharpe's Victor still leads for earliness. Sutton's Abundance is a fine cropper, a good variety, and a favourite here. *A. Angus, Dalziel Gardens, Motherwell, Scotland.*

Potatoes were late in starting to grow, and, owing to the prevalence of much rain, have run very much to growth; the tubers are small, and late in being formed. A week or two of sunshine would make a great improvement both in their quality and quantity. Our earliest are Sharpe's Victor, Veitch's Early Ashleaf, Rivers' Royal Ashleaf, Mona's Pride, Cole's Favourite, and Cosmopolitan. *W. Whitaker, Crewe Hall, Crewe, Cheshire.*

These so far, are looking well; earlies turn out well, but are small. Imperator, Bruce, Magnum Bonum, and Champion are the sorts chiefly grown as field crops. *A. S. Kemp, Broadway, Shifnal, Salop.*

Early border sorts are looking well, and Sharpe's Victor has turned out a grand crop, and Early Oxford is next in use. We never had a healthier or more promising crop. *Neil Sinclair, Park Hall Gardens, Oswestry, Salop.*

Potatoes are looking very healthy, but the cold, changeable weather is against the tubers swelling. Duke of Albany, and Beauty of Hebron are much grown for early use, and Clark's Main Crop in the fields. *George Harris, The Castle Gardens, Alnwick, Northumberland.*

Early Potatoes are fairly good on the whole though later than usual. We began to lift from a south border on June 30; a few had been lifted from the foot of a south wall before then. A well-selected sample of Veitch's Ashleaf is the best Ashleaf we grow, after trying a good many kinds. Late crops in fields, of which there are hundreds of acres grown within a few miles of us, look fairly well, but tall. Scotch Regents, Magnum Bonums, and a variety named "The Bruce," are the main kinds grown in fields. *Henry J. Clayton, Grimston Park Gardens, Tadcaster, Yorkshire.*

Early varieties are small and late; they were late starting into growth after being planted, through the dryness of the soil. In exposed situations they were much damaged by the frosts on June 15, 16, and 17; in many cases they were killed down to the ground. I have not seen the disease so far, neither have I heard of it about here. Late varieties have quite recovered from the effects of the frosts mentioned; I

have never seen them more promising at a corresponding date. *G. Norman, The Gardens, Hatfield House, Herts.*

The Potato crops in this district promised remarkably well until that most disastrous frost of June 14, which cut acres of splendid crops down to the ground. It was a sickening sight to witness at midday on June 15, the tops prostrate on the ground. The loss will be heavy to market gardeners and allotment holders. Clark's Maincrop, which is the best late Potato I know, escaped the frost. *G. Bloxham, Brickhill Manor, Bletchley.*

Potatoes look very promising, and, of the early varieties that we have lifted, no sign of disease has been seen. Both crop and quality are all that can be desired. Sharpe's Victor is a heavier cropper than any other early variety here. It is equal in quality, and two to three weeks earlier, and the best Potato for forcing I have yet tried. *J. Jaques, Waddesdon.*

Potatoes are looking wonderfully well in this district, and with the late welcome rains main crop varieties should be good. Early varieties have till now been small, owing to the long-continued drought. I am relying chiefly on four varieties this season which have proved best adapted to our soil, viz., Ringleader, which I consider the best early Potato; Early Regent, Abundance, a good Potato in every way; and Magnum Bonum. *A. Maxim, Heckfield Place Gardens, Winchfield.*

The best early Potato this season here is Sutton's Ringleader. Planted on a south border the end of March, they were ready to dig June 3. All other sorts promise full crops of good tubers. As yet, there are no signs of disease. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

It is early to give details in regard to this crop, but the early kinds have been good in quality, and a good crop without a trace of disease, though a little later than usual. Sharpe's Victor was excellent early in June, and Veitch's Ashleaf is now turning out a heavy crop of sound tubers in a nice condition. The ground having been dry, the flavour of early kinds has been better than usual. All late varieties are most promising. The genial rains early in the month will assist in swelling up the tubers, having come just in time to save the crops, and with fine weather we shall have enormous crops of late kinds. *Geo. Wythes, Syon House, Brentford, W.*

Potatoes are looking well; they came through the ground extra strong, and continued growing without any check. My principal sorts are Early Puritan, one of the very best for first and second early, and does remarkably well here; Prodigious, a new sort for main crop, sent out by Messrs. Veitch, of Exeter, promises to be an extraordinary cropper, also good in other ways; Imperator, I am trying for late use, but cannot yet say much about it, although above ground they are a grand sight. *A. J. Ballhatchet, The Gardens, Fulham Palace, London, S.W.*

The early crops in heated and cold pits and on borders have yielded well, clean grown, and free from scab. Veitch's Improved Kidney is preferred to any other, though Myatts' and other sorts are grown in quantity. The rainfall in this district is much below the average, 2.39 fell during June, which improved the crops immensely, and I never saw late crops look more promising. No sign of disease up to date. *Owen Thomas, Royal Gardens, Windsor.*

Potatoes generally look promising, being strong in haulm, and remarkably healthy. Early kidneys very late, numerous at the root, but somewhat small in size. Hebrons are turning out wonderfully well. Field, or market-garden farm crops never looked more promising. Digging Hebrons for market commenced July 7 with excellent results. *William Earley, South Essex.*

Early Ashleaf Kidney, Veitch's Prolific, splendid crop of fine tubers, and free from disease. The best early Potatoes we grow here on our stiff soil. I never saw them better, the late Potatoes looking well and very promising. The two best kinds grown

here is The Gentleman and Magnum Bonum. They do well on this clay and cold soil, and keep free from disease, and look well. *W. Smythe, The Gardens, Basing Park, Alton, Hants.*

Perhaps not so early as in some seasons, but a heavy crop and fine tubers; not a trace of disease is yet to be seen in haulm or tuber. Sharpe's Victoria still holds its own as an early forcer, and early supplies outside. Veitch's and Rivers' Ashleaf, Beauty of Hebron, Covent Garden Perfection, Magnum Bonum, Coldstream, M.P., Schoolmaster, Vicar of Laleham, and Chiswick Favourite still hold their own with me. *A. Evans, Lythe Hill, Haslemere.*

Potatoes in fields present an excellent appearance, but it is much too early to reckon on the yield. Late frosts (early in last month) did serious damage in low-lying districts and "moss" ground. Kidneys, Regents, and early sorts in gardens gave an excellent yield, both in size and quantity. Late varieties promise to be a very excellent crop. *B. Burham, Croxteth, Liverpool.*

Potatoes are doing well. Veitch's Improved Ashleaf is the earliest grown here, and is now yielding a very fair sample. Hebrons and Duke of Albany are looking well, no symptoms of disease at present. A later new variety, called The Gentleman, bids fair to be a most useful Potato; it was sent out by Messrs. Veitch & Sons. I grew it last year from seed supplied by the above firm. It is a handsome tuber, and of good flavour. *Chas. Turner, Cranfield Court, Bucks.*

Early varieties, such as Sharpe's Victor and Walnut-leaf, are turning out well, plenty of tubers, and of a good size. Late ones are looking well, and at present no signs of disease. Sutton's Abundance is the late Potato mostly grown in this district. It is not so good in quality as some of the old varieties, but it yields well, and during the last two years has scarcely shown any signs of disease. *Arthur Chapman, Weston Birt, Tetbury, Gloucester.*

Potato crops hereabouts are looking remarkably well, having escaped the frosts in the early part of June. The haulm is stout and healthy looking, and so far there is no disease in the tubers. Early varieties such as Early Oxford, Hammersmith, and Sharpe's Victor are lifting well, the crop being a good one, and the tubers are of good size. On the whole, Potatoes have not looked so well for some years. Lifting commenced June 11. *A. Ward, Stoke Edith Gardens, Hereford.*

Potatoes are everywhere in this neighbourhood looking most promising; the early crops are very good and fine, in quantity and quality. Sharpe's Victor proves to be a fortnight in advance of any other variety, and yields well. The Gentleman, a new late one, judging by its vigorous growth and appearance, should be an acquisition for field planting. *J. Austen, Witley Court, Stourport, Worcestershire.*

Potatoes all round are looking remarkably well, strong, and clean in the haulm, and if the dreaded disease will but leave them alone, the crop must prove a very heavy one at lifting time. Myatts' and Early Puritan are of excellent quality, the former being much larger than usual. We still find Sutton's Abundance the most reliable maincrop variety. *Walter Child, Crooms Court, Severn Stoke, Worcester.*

The Potato crops look satisfactory and well, as the recent rains came at an opportune time. Early kinds now being dug are rather under-sized. Sharpe's Victor is decidedly earliest, has but little haulm, and good in every respect, although not quite equal in quality to the slightly later section of Ashleafs. The frosts of June 18 did much damage in low districts. There are no visible signs of disease yet, but the present condition of the atmosphere is highly favourable to its development. *W. Crump, Madresfield Court, Malvern, Worcestershire.*

The Potato crop so far is everything that can be desired. All now depends on the finishing up of the season. Potato growing, I am pleased to be able to state, has, thanks to the Scotch immigrant farms, become a staple crop, and a great agricultural industry in Warwickshire. *W. Miller, Combe Abbey, Coventry, Warwickshire.*

Potatoes look well generally, but very late. Amongst new varieties Sutton's Ringleader takes the lead with us, of rather robust haulm, but good cropper, and satisfactory quality. *J. H. Goodacre, Elvaston, Derby.*

All Potatoes are looking very well and promising. We are now using Mona's Pride and Sharpe's Victor, both varieties good in size and flavour. We were quite a fortnight later this year, and few varieties injured by the frost of June 13 and 14. The Potato crop in our lower allotments ("Cottagers") was completely destroyed by the June frosts. *J. C. Mundell, Moor Park Gardens, Rickmansworth.*

Owing to the cold and late spring, early Potato^s in this district were quite a fortnight later than last year in being lifted, and in exposed situations the drought of the past two months has tended to ripen the tubers before they had attained their full size, consequently the crop will be lighter than usual. Up to the present date there is no sign of disease, and the quality is all that can be desired. Late kinds are looking remarkably promising; the rain in the beginning of the month has had a very beneficial effect upon them. *R. Milner, Penrice Castle, Swansea.*

The prospects of a good Potato crop are very favourable so far in this district, and no sign of disease has been seen up to the present. Early varieties have all turned out well, and yield good crops, amongst the best are Sharpe's Victor, Early Puritan, Woodstock Kidney, Early Rose, Old Ashleaf, and Beauty of Hebron. Those in the fields are all looking most promising. *R. C. Williams, Crosswood Park, Aberystwith, Cardiganshire.*

Although the Potato plants suffered much through the frosts of March and April, the central shoots being in many cases destroyed, the general crop has been abundant and the tubers large. Good prices were realised by the growers whose crops grew in sheltered places, and were not much affected by the frost, but they have fallen very low during the past few days, and are now being sold at 2s. 6d. and 3s. per cwt., a ruinous price to the growers. The fear of "the disease," coupled with the desire to recrop the ground, induce great numbers of the farmers to dig their crops before they are properly ripened. A few disfigured leaves, caught by the sun before the morning dew had left them, suffices to cause alarm, and spread the bugbear "disease." Patience in many cases would be productive of better results. *Chas. B. Saunders, St. Saviours, Jersey.*

The Early Rose is excellent, also the Flounders are a prolific crop. The field Potatoes are looking better than I remember for many years, and all kinds are a success up to date. There has been thunder and much rain to-day, and I fear the blight may set in at once. *William Ryan, Knockafly, Clonmel.*

NEW OR NOTEWORTHY PLANTS.

VANDA VITELLINA, n. sp.*

THE plant resembles in every respect the well-known *Vanda coerulescens*, Griff., and especially the variety *Boxalli*, but the flowers are by far smaller, and the colour is as yellow as a yolk. Differences in colour only are, of course, not sufficient to establish a new species; but as in *Dendrobium chryscephalum*, the labellum shows us characters which,

* *Vanda vitellina*, n. sp.—Aff. *V. coerulescenti* et variet. *Boxalli*. Caulis foliisque omnino *V. coerulescenti* foliis satis crassis anguste linearibus apice inaequali-bilobis utrinque obtusatis; racemo erecto laxifloro plurifloro (16 in specimen nostro); bracteis minutissimis triangularibus; ovarii pallidis c. pedicellis 3 cm. longis tenuibus; sepalis dorsalibus cuneato-obovatis lateralibus unguiculatis orbicularibus; petalis minoribus oblongato-oblongis basi semitortis omnibus obtusis; labelli lobis lateralibus cuneatis antice retusis erectis, intermedio multo majore cuneato antice medio bipartito disco, callis 3 subparallelis instructo, intermedio minore brevioribus, lateralibus latioribus longioribus (totum discum occupantibus), antice abruptis margine anteriore serrulatis, calcaribus subulato subcompressis recto intus melle scatente; gynostemio generis, candelula satis lata inter pollinia apiculata glandula transversa. Totus flos 1 cm. diametro vitellinus; labelli lobi laterales et gynostemium minutissime purpureo-punctulati; lobus intermedius albidus coruleo-punctulatus. *F. Kränzl.*

after the present opinion of systematical orchidography, are regarded as sufficient for a new species. It is not at all pleasant to describe new species of Orchids under circumstances as we enjoy them, for the last three years, and for a fourth of a century forward things will be in the same condition. The best we can do is to observe as accurately as we can, to spend a heavy lot of time and labour in the preservation of the most dispersed of all botanical literature, and when at last we are not satisfied, to give a true description. It is quite unavoidable that a new edition of J. Lindley's immortal work, *The Genera and Species of Orchidic Plants*, would be the grave of a good many newly published species, but we cannot help it.

The species now published is a gay-looking thing, of at least some horticultural value, if even not a great one. We received fresh material from the Royal Botanic Garden, Berlin, and are informed that the plant, which flowered this very time, was obtained by Messrs. Seeger & Tropp, East Dulwich, London. Dr. F. Kränzin.

KINMEL PARK GARDENS.

ON the escarpment formed by the outcrop of carboniferous limestone overlooking the beautiful and fertile valley on the new red sandstone known as the Vale of Clwyd, this finely-wooded park is a conspicuous feature to travellers on the North Wales coast between Rhyl and Abergel. It faces due north, and is separated from the sea by a plain about 3 miles across. The grounds immediately around the house have been made into beautiful terraces, thickly planted with choice shrubs, over which fine views of the surrounding waste may be obtained.

The trees show a luxuriance scarcely to be expected from the exposed situation and poor soil. All plants which do well at the sea-side flourish here.

Large Evergreen Oaks furnish shelter to the coniferous vegetation, which includes *Cupressus macrocarpa*, *Wellingtonia*, *Cedrus*, *Juniperus*, *Abies*, *Retinosporas*, &c., which do well where the protection from the wind is efficient.

The only difficulty about sea-side planting is the strong salt-laden winds, but the effect of this may be avoided by planting thickly, as has been done here.

Olearia Haastii covered with white flowers, and the Holly-like *Desfontainea spinosa*, full of orange and yellow blossoms, were conspicuous. Large clumps of *Laurustinus* and *Escallonia* about 3 feet high, looked well, they are sometimes cut by frost but soon recover. Clumps of Golden Elder relieve the deep green of the shrubs. Because of the quantity of lime in the soil, *Rhododendrons* and *Azaleas* do not grow well; and for the same reason Beech trees flourish remarkably. In places where old Beeches have been broken by the wind, the stumps are left standing; Ivy planted around which soon covers them with a green mantle. A pretty effect is produced by allowing climbing *Roses* and *Tropæolum speciosum* to grow along with the Ivy.

A well-kept kitchen garden, about 7 acres in extent, presents some interesting features, and notwithstanding the northern aspect, the plants look well. We noticed a bank planted with red Currants, loaded with splendid fruit the whole length of the branches, and side by side with these were a few bushes without fruit, and the difference between the two was due to the former having been stopped and thinned last summer, causing fruit-spurs to form. The question is often asked, "What fruit trees shall I plant on a north wall?" Here is a splendid crop of Lord Grosvenor Apples on horizontal trained trees growing on a north-west wall. A large extent of the south walls is taken up by lean-to houses. A difficulty was experienced with the Vines when first planted, the growth being very gross, producing little fruit. To remedy this, a load of sea-sand and five loads of the heavy calcareous loam of the district were mixed together with ground bone, and rammed firm. Since this plan has been adopted, the gardener, Mr. D. D. Hughes, has always

been able to secure crops. *Gardenias* and *Stephanotis* are grown in old Pine pits by themselves, and are in this way easily kept clean by syringing. A large *Luculia gratissima*, about 7 feet high, is growing in a border in the conservatory. On account of the difficulty of propagation, the deliciously-scented flowers of this plant are seldom seen. It has been successfully grown from cuttings here by so arranging the supply of aerial moisture that the cuttings never flag for want, neither decay from excess. F. V. D.

KEW NOTES.

MR. WILLIAM TRUELOVE retired from the service of the Royal Gardens, Kew, on April 30 last, after serving twenty-six years as foreman of the Arboretum, a position which he filled with great credit to himself, and satisfaction to his superior officers. Before coming to Kew, Mr. Truelove had charge of the then famous Bickton Arboretum, and his selection to fill the post from which he has retired has been justified in every way. From small beginnings—the number of ligneous plants cultivated in the open air at Kew was comparatively very small twenty-six years ago—the Kew Arboretum has developed to a considerable extent; at the present moment it contains about 3000 species and named varieties, excluding garden varieties of such plants as *Roses*, *Rhododendrons*, *Hibiscus*, &c.

The Superannuation Act of 1887 having practically abolished the pensions to which men in Mr. Truelove's position were formerly able to look forward, he was, on retirement, only entitled strictly to the gratuity of £47 10s. which the Treasury awarded him. But in consideration of his exceptional services, the First Commissioner was pleased to make a special application on Mr. Truelove's behalf to the First Lord of the Treasury. This obtained for him a further grant, though it was expressly stipulated that this was not to be regarded as a precedent for the future. The Board recorded the award in the following minute:—

"Director of Kew, to inform Mr. Truelove,

"In dispensing with his services the Board desire to record their appreciation of the diligence and skill which he has shown in the discharge of his duties during the period that he has been in their employ. It is to a large extent in recognition of this that the First Commissioner recommended, and that the First Lord of the Treasury has granted, an additional gratuity of £120 from the Special Service Fund.

"May 17, 1892."

"H. W. P."

Mr. W. J. Bean succeeds Mr. Truelove as foreman in the Arboretum. Mr. Bean first entered the Kew service from the gardens of Belvoir Castle on April 2, 1883. He was not long before rising to the rank of sub-foreman, and on the retirement of Mr. Binder in 1888, Mr. Bean became foreman of the Temperate-house.

Mr. Thomas Jones fills the post of foreman of the Temperate-house, vacated by Mr. Bean. Mr. Jones came to Kew as gardener on January 2, 1888, from the nurseries of Messrs. James Dickson & Sons, of Chester. In July, 1889, he was promoted sub-foreman in the Palm-house.

Borassus flabelliformis.—Kew is indebted to His Highness the Gaekwar of Baroda for a healthy young specimen of this, the Palmyra Palm, which has lately been received, and may now be seen in the Palm-house. Hitherto all attempts to grow this Palm to any size at Kew have failed, although we have now healthy seedlings which were raised from seeds presented by the Right Hon. Sir M. E. Grant-Duff, G.C.S.I., in 1886, when Governor of the Madras Presidency. The specimen from Baroda has a trunk 2 feet in diameter and 4½ feet in length, and although its roots perished on the journey, it is otherwise in good condition. It had been lifted and carefully packed by Mr. Henry, the Superintendent of the Baroda Gardens. We are also indebted to Mr. W. Goldring, who kindly interested himself in this matter whilst at Baroda, where he is engaged in laying out new parks and gardens for the Gaekwar.

A new house for filmy Ferns has just been erected on the north side of the large fernery (No. 2), and the plants removed from the old house (No. 3), which is to be replaced by one more suitably adapted for the cultivation of temperate Ferns. The filmy Fern-house is 50 feet by 14 feet, with a central path and two cases running the full length of the house. The Cooper-Forster collection is now incorporated with the Kew plants, the whole forming an exceptionally rich collection of these delicate little Ferns.

A very extensive and valuable series of products, illustrating the varied uses of the Bamboo in Japan, has recently been presented by Charles Holme, Esq., F.L.S. It has been arranged in two cases in Museum No. III., and shows at a glance both the ingenuity of the people in adapting this valuable arboreal grass to their daily wants, and the suitability of the Bamboo stem to the purposes to which it is put. This collection worthily supplements the large and interesting set of Bamboo products from various tropical countries previously shown in the classified collection in Museum No. II.

Another interesting, though temporary, addition to Museum No. III., is a framed set of twenty-one large photographs, representing views of tropical scenery, and plants in the island of Grenada, taken by R. V. Sherring, Esq., F.L.S., whilst investigating the cryptogamic flora of that island for the West Indian Exploration Committee of the Royal Society and British Association. Mr. Sherring has deposited the collection on loan for a short time.

A very remarkable gouty-stemmed Balsam was lately figured and described in the *Botanical Magazine*, t. 7195, from the east coast of Sumatra, under the name of *Impatiens mirabilis*, Hook. f. The perennial stem is about 4 feet in height, and the thickness of a man's leg. It has large yellow flowers produced on short lateral racemes. There are several living plants in the Kew collection, one of which is in flower now (July, 1892). The following additional information respecting this Balsam has been forwarded to this establishment by its discover, Mr. Charles Curtis, Assistant-Superintendent of the Gardens and Forest Department, Straits Settlement, in a letter, dated Penang, May 3, 1892:—"I have recently been to the Langkani Islands, where I obtained many interesting plants, a set of which has been put aside for your herbarium. I saw some fine specimens of *Impatiens mirabilis*, Hk. f., with stems 5 feet high, 22 inches in diameter at the base, and with twenty or more branches, each having two or three expanded flowers, and numerous buds. It grows in places difficult of access, on sharp-pointed limestone rocks that cut like knives. It appears to lose its leaves entirely during the dry season, and was only just commencing its growth when I was there last month." *Kew Bulletin*.

COMMERSON.

The story of Philibert Commerson, Botanist and Traveller, and Jeanne Baré (1727—1773).

(Concluded from p. 126.)

THE Bougainville expedition, after leaving Tahiti, visited the shores of New Britain, the coast line of Papua or New Guinea, several of the Molucca Islands, and the Isle of Java, Batavia, &c.

Towards the end of 1768 Bougainville's ships reached the French colonial possession, the Isle of France, where M. Dumas was then Governor, and associated with him in the civil administration of that island and Bourbon was Pierre Poivre, the gifted intendant and personal friend of the French Minister.

Here orders were in waiting from Paris that Bougainville was to leave his naturalist and sail home without him, as it was intended that Commerson should be desired to visit the great continental island of Madagascar and report upon that land of promise, as well as upon the Mascarene Islands themselves.

Jeanne Baré remained behind too, for she was by no means anxious to return to France, although M. Bougainville generously offered to take her back to Europe, and he had influence sufficient to secure for her a certain livelihood and employment which would secure her from want in her native village; but she refused to leave Commerson and his life's work, in which now she had become wholly absorbed.

It was with excessive regret that Bougainville and his companions parted with their comrades, that strangely assorted pair, the naturalist and his assistant who had endeared themselves to one and all on board the expeditionary vessels.

Commerson proceeded to Madagascar, and of his researches there space does not permit any detailed allusion. It is, perhaps, sufficient to quote from his letter to Lalande, written on April 18, 1771, after four months' wandering in the woods of the south

portion of the great African island where he had established his headquarters with Count Mandane, who was doing his best to resuscitate the abandoned colony formed by the French East Indian Company at Fort Dauphin.

Whilst in the island of Bourbon, Commerson described the volcano which is perennially active, and his description proves that he was as careful an observer of geological and mineralogical details as he was of the fauna and flora of the new regions in which it was his delight to discover new species, genera, and families.

The young Breton, Mlle. Jeanne Baré, yet followed him in all his peregrinations, and in her he found the ablest possible assistant in saving and preserving the materials for his herbarium and mineralogical collection. The voyages which Commerson had made with Bougainville, and his subsequent arduous explorations in Malagasy forests and malarious lowlands near Fort Dauphin, together with laborious ascents of the difficult and precipitous ravines and mountain peaks in the Mascarene Islands (where he was sometimes for eighteen hours at a stretch in the woods and on the scarped volcanic precipices which abound in all those islands), added to long unremitting work at the desk and with the microscope, must perforce have tried the physical and mental strength of Commerson to the utmost. Life to Commerson was no object in comparison with work, and he undoubtedly sacrificed himself in the cause of science. Repeated attacks of fever prostrated the hitherto energetic explorer, and alas! in those days quinine was unknown, and Commerson had not reached the Cordilleras, where the Cinchona was then only to be found in its original native habitat. Thanks to Mr. Clements Markham, our pioneers in Madagascar now-a-days are able to procure quinine at a reasonable price, and the Malagasy fever has lost many of its terrors to those who are able to resist its too frequent recurrence by doses of quinine.

Philibert Commerson made a brave fight for life; he continued work up to the latest moment, and even contemplated a voyage to New Zealand,* but complications ensued, and this brave naturalist succumbed finally when in his forty-sixth year, dying at The Retreat, the home and residence of M. Bézac, near Flacq, in the Isle of France, on March 13, 1773.

M. Bézac, M. Auguste Vinson tells us, wrote the next day to M. de Bompar, Commissary of the Naval Department, and Controller for the islands of France and Bourbon, announcing the death of the noted naturalist, which, he said, had occurred at a quarter of an hour before midnight. The body was interred that same day, after morning mass, in the parish churchyard. By an honourable exception, which was then without precedent, although he had neither read, nor even sent to be read, a single memoir to the Academy of Sciences, that illustrious body of scientists unanimously elected him as a member of their faculty in spite of his absence. Alas! he was not only absent from France, but from the world. Those who believe in spirits can well imagine that his spirit was present when his election was discussed, and on the same day that Antoine Laurent de Jussieu (the nephew of the great Bernard de Jussieu) was solemnly admitted to the august assembly. This nomination was, M. Emile Blanchard says in the *Revue des Deux Mondes*, "a wreath deposited on a tomb," as it took place on March 21, i.e., eight days after the death of the botanist, which, of course, was not known in Paris for some months afterwards. However, this posthumous honour was well merited, and the victim to science could have wished for no better monument, *perennis are*.

Forster, who had traversed the same seas with Captain Cook, dedicated to his co-worker the genus of plants now known as *Commersonia*; and Lalande wrote his eulogium, which is to be found in *Observations*

sur la Physique et l'Histoire Naturelle, par M. l'Abbé Rozier, 1775, in 4to, tome 1^{er}, p. 39.

Following the example of Linnæus, Commerson took great pains that the names which he gave to his newly-discovered genera and species should bear some analogy or hidden allusion to whom he dedicated them, and that these names should express his regard or contempt, his love or his aversion, for certain characters thus handed down to posterity. This quaint kind of apotheosis is a fantasy, in which botanists sometimes indulge themselves, and seldom abuse.

Among the various friendships which Commerson thus immortalised in naming genera, species, and individual plants, it may be sufficient to indicate a few of the most remarkable of his discoveries. Thus it is to Commerson that we owe the name *Hortensia* given to that plant, originally brought from China, whose blossoms have ever since been such a favourite decoration in the gardens and drawing-rooms throughout Europe.

The Bougainvillea that brilliant creeper whose bracts, tinted with the most lively colours of roseate-lilac and rouge-carmine, which he discovered in Brazil, and introduced into Bourbon and Mauritius, where they cover the trellis arbours and roofs with splendid effect; the Poivre, another Vine-like creeper, which flowers in October, and exhibits its purple clusters in the lowlands of Madagascar; the *Lalandia*, the *Marignia*, the *Jossignia*, the *Chuzalia*, the *Cossignia*, &c., recall each in turn his friends.

His constant and faithful affection for his wife is immortalised in the fruit of a plant which resembles two hearts united, and which he named *Pulcheria Commersonia*.

To one star-like flower, whose sombre calyx is, as it were, bedecked with tears, which only opens for a few hours, and closes soon, he gave, as in regret, the name of his valued friend and comrade, Véron, a young astronomer who, left by Bougainville at Mauritius, died in the flower of his age, when scarcely thirty-two years of age. He called it *Veronia tristiflora*.

But if this scientist and poet immortalised his friends and his affections by these tender souvenirs inscribed in flowers, he was also capable of holding up his enemies to ridicule, sarcasm, and ignominy. His pen in these few instances could sting, and draw blood.

It will be remembered that even the great Linnæus, annoyed by the jealousy and attacks of Buffon, named the toad *Bufo*. This name has survived as the permanent name of the genus.

In like manner Commerson has perpetuated the name of another crank. A compatriot of Commerson, who belonged to the preceding generation, and bearing the same Christian name, Philibert, was Collet, born at Châtillon-lès-Dombes in 1643. Collet criticised Tournefort, and accused him very severely of having changed the ancient method of classing plants by leaves, and of finding the character in the flowers, fruits, and seeds. Commerson, who estimated his compatriot's botanical acumen at its true worth, or rather worthlessness, dedicated to his memory a genus of plants which he named *Colletia*. The characteristic species, *C. spinosa*, is a shrub of disagreeable appearance, armed with thorns, and destitute of leaves, by which he indicated an allusion to the ignoble classification Collet sought to impose on science, and the prickles to be analogous to the carping criticism of this author. Thus Tournefort was avenged by Commerson.

Commerson, by his will, left as a legacy to the Natural History Museum in Paris his immense collections of plants, fishes, &c., together with his manuscripts—in all filling thirty-two huge cases—which reached Paris during the following year in good preservation. His collection contained upwards of 5000 plants, of which 3000 were new to science, forming 160 new genera. His dried plants filled 200 volumes in folio.

The bulk of Commerson's manuscripts, his magnificent collections of fishes, animals, and plants,

remained buried in the cellars of the Museum, whilst his successors have described under other names than those long before selected by their original discoverer the genera and species of plants. Tardy reparation has since been done to assign the true claims of their real owner; but in all respects his early death prevented his reaping the harvest of glory which he deserved. His present well-deserved reputation would have stood on a far higher pinnacle of renown. He was the first to dip into the treasures of new regions of Nature hitherto untouched by a scientific visitor-searcher.

Commerson's reputation has, however, been considerably rehabilitated during these latter days of ours, as he is now recognised as one of those who initiated modern scientific methods, and in advance of those around him may be accounted as one of the first workers of the present spirit of philosophic inquiry.

Unforeseen circumstances have contributed comparatively lately to bring forward his name in greater prominence, and his labours are only now becoming fully appreciated by the light thrown on them in results of recent research.

So occupied was Commerson up to the last in the active search for materials amidst the prodigal wealth of Madagascar and the Mascarene Islands, that he had never leisure to indite the large work which he contemplated as the outcome and fruition of years of toil. As it was, he published no essential work, and but fragmentary letters have been preserved.

One of these letters, however, is inserted in its entirety in the Supplement to M. Bougainville's *Voyage*, which, curiously enough, appeared first in English; and it is only by the translation by Fréville (Paris, 1772, in 12mo) that it is known to Commerson's own countrymen.

Baré was the first woman who ever made a voyage round the world. Her example was followed by Madame de Freycinet, who, dressed as a midshipman, accompanied her husband during his voyage of discovery. Something may be said about her in a later communication. *S. Pasfield Oliver, Capt., Moray House, Anglesey, Gosport.*

REMARKS ON THE FRUIT CROPS OF 1892.

[For Tabulated Summary, see p. 93.]

(Concluded from p. 182.)

WALES.

CARDIGANSHIRE.—With the exception of small fruits, the fruit crop is a failure in this district, although a better show of blossom has not been seen for many years, and at that time hopes were very high of obtaining a good crop, but the late severe frosts shattered them; even on walls with a double thickness of fish-netting, the bloom was all cut off, and only on some of the later varieties of Apples and Pears will any be obtained. The trees are making abundant growth, and we must hope for a fine autumn to ripen the wood for a better crop next year. *R. C. Williams, Crosswood Park, Aberystwith.*

DENBIGHSHIRE.—Apples are an excellent crop, and clean. Pears thin, but clean, and swelling well. Plums very thin on walls, but fair crop on standards. Cherries good crops, but Morellos are falling off a good deal. Bush fruits fine crops. Strawberries huge, and good quality. *P. Middleton, Wynnstay Gardens, Ruabon.*

— Apples an average crop as a whole. Some of the newer varieties much under. Pears average. Plums and Damsons in this immediate neighbourhood a very heavy crop, in other places rather scarce. Cherries abundant. Peaches and Nectarines a full average. Apricots very heavy crop. Small fruits abundant, and of good quality. Strawberries are only average, while nuts of all sorts are a very full crop. *Jas. Loudon, The Quinta, Chirk.*

GLAMORGANSHIRE.—The fruit crop in this district is very partial, Apples being much under the average, although many of the kinds showed well for bloom.

* Crozet had just returned from his voyage to Tasmania and New Zealand, in charge of the ship "Mascarin," which had been commanded by Captain Marion du Fresne, who was killed at the Bay of Islands in the Northern Island, which M. Marion had called France Australe, on June 12, 1772.

A great percentage dropped, no doubt owing to last year's wood not being thoroughly matured. The varieties carrying the best crops are Cellini, Cox's Orange Pippin, Lord Grosvenor, Gillyflower, Wellington, Stirling Castle, and several local varieties. Plums are a very light crop. Pears, average. Louise Bonne of Jersey, Winter Nelis, Forelle, Pitmaston Duchess, Thompson's Beurré Diel, and Brookworth Park, are amongst the most fruitful. Strawberries have been exceptionally good, but smaller than usual, owing to the long spell of dry weather which we have had in this district. Cherries, both the Morello and the sweet kinds, are carrying heavy crops; all small fruits are very fine, and heavy crops. *R. Milner, Penrice Castle Gardens, Swansea.*

GLAMORGANSHIRE.—Pear trees trained on walls and growing in the open quarters of the garden never promised better for an abundant crop than they did in the early part of the season. The branches were covered with strong healthy flowers, which to all appear-

10. IRELAND, S.

CORK.—The fruit crop, generally speaking, is light (Strawberries excepted), particularly stone fruit on walls, which suffered much from severe frosts when in flower. Small bush fruit is a good average crop. *R. Wilson, Mitchelstown Castle.*

KILKENNY.—Apples, where well sheltered from east winds, are fully up to the average, but in exposed situations the crop is a light one. Pears, Plums, and Cherries are under the average. Gooseberries were much damaged by frost when in flower, and are consequently a light crop. Strawberries were plentiful, but owing to the constant rains, were of bad quality. *William Gray, Woodstock, co. Kilkenny.*

WICKLOW.—Gooseberries and Currants of all sorts are bearing an excellent crop of fine fruit. Apples are plentiful. Plums looked promising when in blossom, but were injured with frost, and are poor crops generally, with the exception of Damsons,

during the past month, the sun rising at 4 A.M., and setting at 8 P.M. Less of his brightness, and more moisture, would have produced better results. The growth of fruit trees generally is very satisfactory and encouraging. *C. B. Saunders, St. Saviour's.*

NURSERY NOTES.

BEGONIAS AT BEXLEY HEATH.

At the Crook Lodge Nursery, Bexley Heath, Mr. Thos. S. Ware, of Tottenham, has a very gorgeous display of tuberous-rooted Begonias in full bloom. Nothing else is grown in this branch of the Tottenham establishment, but there are, in all stages of growth, some 200,000 to 300,000 of these plants. The greater part of them are seedlings planted out in a large field close by, and amongst these are a great many possessing excellent merit. Indeed, a walk through the field, and a study of the double and single varieties, will soon convince any of the excellence of the strain. The natural soil here is a sandy yet rich yellow loam, peculiarly suitable to the Begonia, and it is used for potting purposes with a little leaf-mould added. A great mistake is still frequently made by gardeners in the compost they pot their Begonias with. This section does not like peat, and where a suitable loam can be obtained the peat should be discarded altogether. The natural fleshy roots developed in loam are far more advantageous than the thin wiry roots induced by the use of peat. Only with heavy loam is there any excuse for using peat at all in potting these plants. The bulbs they make in the field here are surprising, although the cold weather has prevented the foliage from making much headway.

It is, however, in the houses that the visitor is shown the decorative quality of the Begonia, and there is at the present time a first-rate exhibition of double and single flowers. Amongst the doubles are a large number of the now well-known Duchess of Teck, just commencing to flower; Duke of Teck, the double crimson; and Princess May, which has been so much in evidence at exhibitions this season, bearing its white crimp blossom, was also there; as was Baronne de St. Didier, a delicate straw-coloured variety; and Beauty of Belgrove, which so much resembles in colour and appearance the Rose, La France. Among the new ones of Mr. Ware's raising is Miss Jennie Fell, with perfectly-shaped flowers of a rosy-crimson, but not large. Mrs. Francis Fell is a double salmon-pink, and very large. A very dwarf variety of good habit is Floribunda; the blossoms are dark rose—it would make an excellent bedder. Pioneer is of exceptionally good habit, and the flowers are pale pink. Countess O'Gorman is a pretty primrose or sulphur-yellow, not large, but of good quality. Henshaw Russell, certificated this year, is a rosy-crimson Camellia-like bloom. Pavana might be taken for a Carnation from its appearance; the colour is a curious blending of bronze and red. Alba magna is a lovely variety, bearing snow-like blossoms, which are very fine and full; it is dwarf, and of good habit. As a result of last year's crossing, there are some very curious and some very fascinating bronze-yellow seedlings in great variety, which have not yet been named.

The singles, when seen together in a house, appear to create a more striking effect than the doubles, and the seedlings show such good and varied forms, that it would seem to be a waste of time almost in naming them.

These, however, are some of the best that are yet named at this establishment, but some seedlings we saw are equally beautiful. Maid of Kent, of good habit, has flowers of a pale straw colour. Lord Byron has scarlet flowers with white eye; it is large and good. Fimbriata is white, with fimbriated margin. Devonia is a very good thing; flowers are large, and of a dark bronze. Bexley White has good wide petals, and they are pure white. Blushing

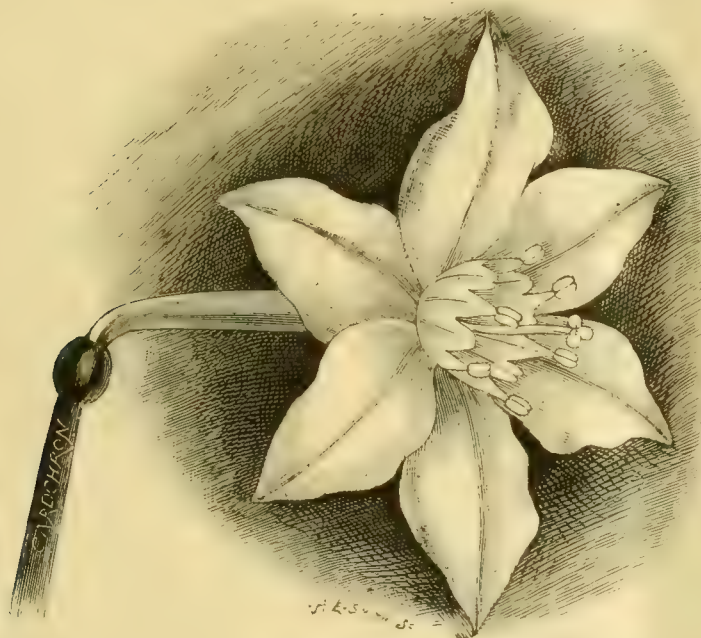


FIG. 34.—EUCHARIS BAKERIANA (COMPARE FIGS. 35 AND 36).

ances would have set well had it not been the sharp frost we had here on the morning of April 15, which destroyed the organs of fructification. The crop, with a few exceptions, is a complete failure in this district. *A. Pettigrew, Castle Gardens, Cardiff.*

PEMBROKESHIRE.—The late and very severe spring frosts did great damage to the fruit crops in this district. All fruits bloomed strong and well, and gave promise of a full crop; but gales and frosts destroyed nearly all. Of Pears some of the early blooming sorts carry a light crop. They had set before the frosts came. Amongst Apples King of the Pippins appears to have withstood the weather best, as usual. Alfriston is also very fair. All other varieties greatly damaged. Apples on walls, of which we have a fair collection, are all good. The only Plum of which we have a crop is Rivers' Early. It was the last to bloom. Even the Victoria is a failure. *Geo. Griffin, Slebeck Park, Pembrokeshire.*

9. IRELAND, N.

WESTMEATH.—The fruit crops in general are very bad; no stone fruit worth notice, and Pears and Apples a failure. *John Igoo, Garden Vale, Athlone.*

which are a good crop. Strawberries yielded good crops of large-sized fruit. The first dish of Strawberries gathered here was from Laxton's Noble on June 19, and later varieties held out another month. *W. Cooper, Killruddery, Bray.*

CHANNEL ISLANDS.

JERSEY.—The appearance of the Apples and Pears at the blooming season left little to be wished for; they were really beautiful, with superabundance of flowers, but the cold winds and biting frosts of March and April caused the greatest destruction amongst them, and, in many cases, despite the skill and care of the pruner to produce such promising evidence, there is but very little fruit upon the trees. Apricots are always a fickle crop, because of the early season at which the trees bloom. Nectarines, Peaches, and Plums have fared better, owing to their being planted in the more sheltered situations. Small fruits, from their more hardy nature, are abundant, and good. Cherries are fairly good on deep soils, but Morellos are dropping off the trees, from the drought. Strawberries were fine and good at the early part of the season, but suffered from the dry weather. We have had much sunshine

Bride is very distinct; it is a charming blush, falling to white in centre. Challenger, certificated last year, is a dark crimson, of good substance. Sovereign is a beautiful primrose-yellow; its habit is good, and the foliage is very pretty.

THE PROMISE OF THE SEED CROPS.

LINCOLNSHIRE rivals Essex, Bedfordshire, Cambridgeshire, and some parts of Kent as a seed-producing county, especially that level portion of it stretching away from Peterborough, including the districts of Spalding and Boston, to the shores of the Wash, and the German Ocean. The soil generally is a rich alluvial one—a fine and fertile deep yellowish loam, of excellent heart, and which, well tilled, is capable of producing heavy and luxuriant crops. Round Boston are many small holdings, cultivated as market gardens, in which Potatoes are largely grown, especially the Ashleaf types, and from one small station near Boston there were despatched during the last week in July as many as 100 railway trucks daily, each containing from 5 to 7 tons of Potatoes, the prices realised being about £2 per ton—far too low to adequately cover the expense of production. The Potatoes produced from the land hereabouts are generally of excellent quality, and, so far, but little disease is apparent.

About Boston, Peas are largely grown for seed purposes. Messrs. W. W. Johnson & Sons, the well-known seed merchants of Boston, are large growers, and place out extensive contracts with the farmers for Peas, as well as for Turnips, Mangels, &c. An inspection of the growing crops made during the past week showed that, should the fine dry though somewhat cold and sunless weather continue, there is the prospect of a fair field. The cold and dull weather which prevailed during the time the plants were in flower operated to prevent many of the blossoms from becoming fertilised, and there are some failures in consequence. A summer remarkable for the prevalence of cold and dulness, and the absence of much-needed sunshine, has been experienced in the Lincolnshire district. The more tender main crop and wrinkled Peas have suffered even more from the foregoing causes, and many abortive pods do not contain Peas. The ultimate condition of the crop depends very much upon the weather during August; if rain should set in, the effects will be disastrous; at best, only a fair yield can be anticipated, owing to the pods being so unusually late in ripening. The absence of sun has caused a good deal of mildew to put in appearance on the lowlands, which affects prejudicially the development of the pods. Then, the showery season caused a superabundant growth of weeds among the Peas, and as the haulm lies upon the ground, sun and drying winds are necessary to thoroughly ripen the pods.

Broad Beans, represented by Longpods and Windsor, are short in the stalk; they bloomed freely, and set fairly well, and, so far, promise good average crops, if they escape the black smother-fly which has made its appearance in some districts. All cultivators of Beans find this to be a terrible pest, and very injurious to the crops, which are badly in want of fine sunny weather. The common Horse-Bean is largely grown in some parts of Lincolnshire. French Beans and Scarlet Runners are but little grown for seed in the Boston district, the soil not being suitable for them, lighter land being required to grow them on for seed purposes.

Onions are but little grown for seed also, though largely for market.

Carrot is only sparingly grown for seed, and of the varieties, the Altringham mainly, which does well in the fine deep soil, and is the leading Carrot both for private and market use. Only limited breadths of the choicer varieties are cultivated, and what there are of them look well at the present time. Parsnips also are not grown for seed in Lincolnshire.

Parsley, like some other things, suffered severely from the past winter, and very short breadths can be seen; but what plants there are look remarkably well. It is expected Parsley seed will be very scarce.

Parsley for seed is sown in June, and this enables the plants to be quite strong enough to stand through an ordinary winter.

Mustard, and more especially the brown variety, is largely grown for manufacturing purposes, and on good and well-managed lands the plant is good, and the seed crop promises fairly well. Although in some districts the Mustard-beetle has brought damage to the crops, there is not much room for misgiving as regards the brown seed, but in reference to the yellow or white-seeded Mustard, the beetle has made sad havoc, and in some parts of the country the crop is entirely lost. The plants standing have been so severely damaged that the poorest results must follow. In the fen districts of Lincolnshire, where a few years ago Mustard was extensively grown, and proved a remunerative crop to farmers, the beetle so damaged the crops, that for two years scarcely any seed has been sown. This year a few growers tried again, but with the same disastrous results. It is said the best way to exterminate the Mustard-beetle is to cease to grow a crop of this plant for a few years, as the insect seems to decline for want of the Mustard-plant to feed upon.

Of Mangold Wurzel seed only very small breadths are seeding, so many plants having been killed by the severity of the winter and the late frosts in spring. There is, therefore, much less Mangold being grown for seed purposes than for years past. The small breadths promise a good yield at present, and there is no apprehension of damage from insect or other causes. In this part of the country the Yellow Globe finds the greatest favour with farmers, and especially that type known as Johnson's Selected Golden Globe, which is now extensively grown, and has become quite a standard variety, and also the Golden Tankard. The farmers of Lincolnshire appear to be becoming alive to the fact that the yellow-fleshed Mangels have higher feeding qualities over the red sorts, and though they may not yield quite so much weight per acre as the ordinary large varieties, are yet much more valuable for feeding purposes on account of the saccharine juice they contain.

Swedes and Turnips, both yellow and white-fleshed varieties, are represented by small breadths, and the crops on the whole are not very promising. The Swede Turnips have suffered considerably from canker, owing to the severe character of the winter; and the bladder, as it is termed, has affected the pods, thereby greatly reducing their fertility. The yellow Turnips, which promised fairly well at blooming-time, are not doing so well, owing to the action of blight, and there are many immature seeds. If ever the Lincolnshire seed growers and farmers had reason to long for the bright and warm sunny weather of traditional August, it is at the present moment. *Pisum.*

HOW TO REJUVENATE OLD VINES.

FOR some time the old Vines here had been gradually drifting into a very unsatisfactory condition of health, becoming weakly in constitution, and, of course, correspondingly weaker in fruitage, so that the dilemma presented something like two alternatives, one of which was to grub out the Vines, make new borders, and replant with young canes; the other to, in some way, renovate the old borders, and impart fresh life in the old Vines. Had men and material been as plentiful as they used to be during the earlier days of these gardens, I have no doubt the former method would unhesitatingly have been adopted. However, the latter way was chosen, and the sequel of this paper will serve to show how we set about it, and to what degree we succeeded.

We have six vineries in a row, and our renovating process was begun at one end by removing all the effete earth until we found something like roots. If during this operation the border was found to be in a dry state, we threw on a liberal sprinkling of Thomson's Vine Manure, slightly forking it in, then washing it well down with a liberal dose of water.

On the top of this we laid on a coating of fresh loam already mixed with more of Thomson's, to a depth of from 3 to 5 inches, as necessity suggested. This done, the surface was made level and lightly trodden; we then paved the whole surface over with common bricks, leaving about a quarter of an inch space between for the subsequent convenience of manuring, watering, &c. So pleased were we with the treatment we had applied to the first house, that we decided to continue the same through the others; nor did we even stop at that, for we continued the same renovating and bricking process to the outside borders as well. The Peach borders, inside and out, were also subjected to precisely the same treatment. This work was begun and finished in May, 1891, and as time wore on, I had many a look to see whether any rootlets were making their way towards the surface. During the autumn of that year I was sufficiently satisfied that the roots were vigorously at work, and thoroughly enjoying themselves. The young wood and leaves also showed very perceptibly that the process of resuscitation was cleverly at work, and my hopes were naturally raised to the anticipation of what might be the result of another year's growth. During the early spring of this year, and of the further portion of the year already gone, the Vines, from the extraordinary vigorous growth of wood, dark green leathery leaves, large luscious berries, black as sloes, and with a thick coating of bluish-black bloom, all bearing proof abundantly to show that the Vines, literally speaking, have been masterly stoked, and that they have got their steam thoroughly well up.

The weight of fruit on these Vines, together with their colouring, is at this moment a sight well worth seeing, and when seen, one to be remembered. Besides the help from the dressing of fresh loam and Clovenford's manure, the top covering of bricks formed not, perhaps, the smallest portion of the quota which led up to such general and complete success. To begin with, they effectually prevented any over-industriously inclined young gardener, with the mistaken idea of making his place look tidy, from taking a fork and constantly loosening the borders, thus preventing any chance of the roots ever coming to the surface, to feed and ramify as in nature the manurial nitrogens placed there for assimilation. The bricks, too, from their moisture-absorbing quality, form a famous damping medium. On hot days water poured with a rose on those bricks produce and maintain a most salubrious growing and spider preventing atmosphere.

We have for many years been in the habit of covering the surface of our Melon beds with bricks, with the happiest results.

Although I have written thus strongly recommending bricks as a covering medium for fruit-tree borders, I am far from presuming to say that there is anything very new in it; for I distinctly remember seeing quite forty years ago, fruit-tree borders covered, not with bricks, but with stone, perhaps, because they only were obtainable. When the borders were dry, the water was poured all over the stones. As far as my experience goes I like bricks best, they are absorbent of moisture, and they can be placed neatly. Besides which, they can at all times be comfortably walked upon, or a pot or plant placed level on them without trouble. The bricks used were all old ones, from old sanitary culverts, which had been disused and dug up. They lay in an immense stack close by, and suggested themselves being appropriated to our use. Much more might be written on this subject, and of the various material used with more or less success.

Are not Apricot trees longer lived and more fruitful when grown on the walls of a cottage where their roots under the pebble-path which leads by? Perhaps others may be induced to give their experience of what they may have done in this line. I feel strongly, that although we may not be altogether on a new track, we are, at any rate, on a safe one, and one that, if perseveringly followed up, may lead to even greater success than that which, I am pleased to say, it has brought to me. *W. Miller, The Gardens, Combe Abbey.*

CHRYSANTHEMUMS.

RIPE VERSUS UNRIPE WOOD.—I know amongst a certain class of cultivators for large blooms there has been an idea that the ripening—or what is perhaps a more correct term to employ, maturation—of the wood exists in name only; but as time rolls on, and none but the best formed flowers obtain the desired goal in the competitions, it is dawning gradually upon the sceptics that the maturation of the growth of Chrysanthemums is after all a very important phase in their successful cultivation. It is in the incurved section where imperfect maturation is most felt, because it is on the perfect incurving of the petals that success or otherwise depends, and it is not the extraordinary size in width only that is the desideratum to strive for. Depth and solidity of the blooms are absolutely essential in incurved blossoms, and these, let me impress upon learners, cannot be had from plants with immature wood. Ill-ripened branches will produce flowers large enough in diameter, but they lack depth and form. Blooms from perfectly-matured plants are always deeper in the growth of the florets and firmer in "build," as it is called; while those from unripe growths are devoid of depth, and contain a number of ill-shapen florets, in some instances without any semblance of incurving in the proper manner. There are two sorts of ill-ripened wood: first, those branches which are too succulent—soft sappy stems caused by want of space, air, and light, and by their receiving stimulants of a wrong kind, and in the wrong way; secondly, by forcing the ripening by drought, which contracts the sap-vessels, therefore unduly impeding the free flow of nourishment for the blooms at a critical time. Wood-ripening does not consist in merely hardening the wood, but in storing it with nutriment for the blooms. For instance, one or two doses of nitrate of soda may be given during the season to flush the growth of the plants, but if this method were continued, it would result in soft, pithy growth, which could not mature, and this would be an instance of bad management in maturation. Nitrate of soda is a capital stimulant for Chrysanthemums, but it must be simply to elongate the tissues, and give space for other food.

What I mean by perfectly-ripened wood is, wood that is ripened sufficiently by natural means, as the result of correct treatment throughout the whole life of the plant. Maturation must commence with the infancy of the plant to obtain the best results. Seasons vary so much, that the locality in which growers reside is a very important factor in the production of good or bad plants. Where the locality is high, the air, although much rain may be registered, is drier than in the lowlands, and it is this dry air which precipitates bud formation that gives so much trouble to some growers; this is a case of premature maturity of the wood, which is unable to give the finest flowers. We can regulate and control moisture in the soil, but have practically no power over it in the atmosphere. During a hot and dry summer, the absence of night dews is very much felt in high-lying districts, and tends very much to over-ripening or contracting of the sap vessels.

When the wood is pale green in colour, instead of brown, and the growth is soft and gross, a want of maturation is evident. Some growers set too much store on plants with extra thick stems and gross green leaves. These are, perhaps, pleasant to look upon during the summer by the uninitiated, but when the test is applied, and he looks for perfect blooms, they are generally missing. I have a strong remembrance of a case in point. A very enthusiastic gardener and cultivator of Chrysanthemums on the south side of London had exceedingly strong plants during the year 1889. Calling upon him one day in August, he was very proud to exhibit to me his prowess in having made his plants as big as possible. I expressed the opinion that they were too much so, because they lacked the necessary signs of coming maturity. The experience gained by the individual in question that season will never be forgotten,

because with all his plants the prizes won during that year were extremely few in number—not one, I believe, for incurved blooms.

I will now point out some of the causes of the want of maturity in the branches, and advise as to the best means of obtaining that essential. The greatest of all faults is that of not making the soil firm enough in the pots, particularly at the last potting; under such conditions, the roots ramble quickly into the soft soil, and the growths are soft and devoid of that hard wood-like character that is so desirable. Using soil of too rich a nature, and the excessive application of stimulants, such as nitrate of soda (as previously mentioned), induce an undesirable luxuriance of growth.

Overcrowding the plants is another common source of badly-ripened wood. The stems under



FIG. 35.—URCEOLINA PENDULA (AUREA), FLOWERS YELLOW: SEE FIGS. 34 AND 36.

such conditions grow weakly, and the leaves are imperfect. A free circulation of air amongst the plants, with full exposure to the sun, contributes powerfully to substantial growth. There is no such thing as growing the plants very strong, and ripening them suddenly. By the time the plants are in bloom the wood should cut almost as hard as Oak, and the colour of the bark should be rich brown with a rough uneven surface. The leaves on such plants assume towards September a bronzy appearance, though some varieties indicate this character more clearly than others. The way to obtain perfectly-matured plants is to allow sufficient space between the plants at all stages of their growth, from the time the cuttings are rooted until the plants are housed. If there is any doubt about being able to do this, owing to want of space, the remedy is to grow a less number of plants, and thus do them justice. The plants should be arranged thinly out-of-doors during the summer in an exposed situation, but protected from south-westerly winds, which at times do much

towards bruising the leaves, which is injurious to the plants, even if it does not break them entirely off. The shoots should be tied out thinly and securely as growth progresses; all superfluous side-shoots should be cut off as fast as they grow, as they not only rob the plants of some energy, but impede the penetration of light and air.

Firm potting is absolutely essential in all stages. In soil of a light character it is hardly possible to pot too firmly; but it is not so necessary with heavier soil, as the water will not percolate so freely, and should the drainage become defective, trouble may ensue through the soil becoming waterlogged. I prefer to use a blunt stick at the final potting, the soil can be put into its proper position so much more readily than in any other way.

When the plants are potted firmly, the growth is not so rapid early in the season, but it is rendered solid and firm as growth proceeds, and is more likely to mature in a wet autumn. The soil should be enriched according to the natural state of the loam in the neighbourhood, as this forms the principal part of the compost.

Instead of making the soil too rich, it is better to apply stimulants more freely afterwards, according to the state of the growth made and to the condition of the weather. If this be damp continually, the atmosphere will be laden with moisture, and less stimulative food will be required. Some persons think that Chrysanthemums cannot have too much water at the roots, but that is a mistake; they will stand more drought than many think. What I mean by drought is, that state of dryness which precedes the flagging of the leaves of plants for want of moisture. It would not be wise for any cultivator to allow their plants to get into this state at any time, as the lower leaves would be likely to drop afterwards.

In conclusion, I would impress strongly upon learners in Chrysanthemum culture for large blooms the absolute necessity for extra attention in the maturation of the wood of the plants, and more especially to the incurved section; and it is in this that the ability of a person in Chrysanthemum culture will be tested. *E. Molyneux.*

TREE-GROWTH IN 1892.

THE peculiar and unusual nature of the present season has had a remarkable influence on the growth and leafage of many trees and shrubs, most of which have made unusually long growths, and leafage of the richest description and in great profusion. Coniferous trees are, perhaps, most noticeable, those growing in favoured situations having already in many districts added 2 feet to their height, and spread laterally in proportion. Turn where one will, the beauty and grace of the Larch this season are particularly noticeable, the healthy hue on the pea-green foliage and weeping branch-tips caused by the extraordinary growth being unusually beautiful. Scotch Firs, too, as also, indeed, the Austrian and Corsican Pines, have nearly doubled their usual annual growths; and should we have a good season to ripen off these growths before they are subjected to frost, it will be a matter of the greatest moment. Sickly Coniferous trees do not seem to be at all abundant, though for all the growth they have made, insect pests would seem to be generally more abundant than usual, this probably owing to the damp warm weather which has been so beneficial to the growth and development of the trees.

Amongst the newer and rarer Conifers, nearly every species have benefited from the nature of the weather during the past spring and summer. Nordman's Fir (*Abies Nordmanniana*), and the still more beautiful *A. nobilis*, look unusually happy. Turning to hard-wooded trees, much the same may be said as of the coniferous section, the rich glossy leafage speaking for itself. Beech on the chalk, Oak on fairly stiff soil, Chestnut where good vegetable loam is present, and Birch amongst the rocks—all look the picture of health, and to a greater degree than usual.

The flowering of trees is this season remarkable, the Spanish Chestnut being literally covered

with its curious yellowish-white blossoms, while the Horse Chestnut was not one whit behind it, whether for beauty or quantity of flowers produced. Worth of unusual notice is the scarlet-flowered Horse Chestnut, and which during the past season flowered with unwonted vigour. The Buck's Eye (*Pavia macrostachya*) is just now spiked with flowers, and is a very handsome lawn shrub or small-growing tree. Acacias, too, never showed to better advantage, and we had to chronicle the flowering of several of the rarer and finer kinds. The prickly-flowered section is well worthy of extended cultivation, and few, if any, can beat the good old false Acacia (*Robinia*), for beauty, quantity, or purity of flowers. Some of Limes, notably the large and silver-leaved, have been studded with their sweetly-scented flowers that are so attractive to insect life; while the equally sweet flowers of the Maples have been freely produced.

Magnolias, including such uncommon kinds as the Umbrella (*Magnolia umbrellata*), the Cucumber tree (*M. acuminata*), *M. stellata*, *M. Campbelli* [?], and *M. conspicua*, have flowered with the greatest freedom, some of those of the Umbrella tree being of great size and substance, while many of the leaves exceeded 18 inches in length. The Manna Ash (*Fraxinus ornus*), kept up its usual reputation for beauty and quantity of flowers, and is a small-growing tree that cannot be too often recommended. *Ailantus glandulosa* (the tree of heaven) is a distinct ample-leaved tree with flowers plentifully produced, though not of pleasing colour nor appearance. The Sumachs follow in the same wake, both as regards flowers and leafage, these being produced during the present season in great plenty. *Catalpa bignonioides* (the Indian Bean) promises well for flowers, and the leaves are faithful to their size, and of the curious bronzy hue for which the tree is remarkable.

Amongst our native trees few have been more attractive or, indeed, are so at present, than the various species of *Pyrus*, the abundance of flowers and unusually coloured leaves making them the favourite of all. The Beam Tree (*P. Aria*), and the Rowan or Mountain Ash (*P. aucuparia*), are, indeed, handsome species, the finely-cut leaves and unusual wealth of rosy berries of the latter, and ample foliage of the former, and which with the least breath of wind reveals the cottony-white of the undersides, rendering their objects of interest wherever they are growing. But the Gueldres Rose (*Viburnum opulus*)—not the round Dahlia-like flower of our gardens, but the true old English species with single flowers—has been weighted down with the great flat head of pretty whitish flowers, the most delicately-tinted pinky berries just now taking the place of these, and which for the next two months will render the plant without a rival for beauty of fruit and intensity of its autumn garb. I oftentimes wonder that this native shrub, that certainly has no superior, whether for beauty of foliage, flowers, or fruit, should not be more commonly cultivated, for the freest-flowering foreign species, be it ever so decked with fruit, is far cast in the shade by the marvellous beauty of this neglected native shrub. But neglect of the plant is not to be wondered at when we find some of our botanist-gardeners stating that the plant is not in cultivation—curious, that in nine cases out of ten, lovers of the most desirable trees and shrubs show the greatest ignorance regarding our native wildlings.

Rather stiff and starch is Wayfaring tree (*Viburnum lantana*), but when the flattened heads of white flowers are at their best in July, the shrub or rather small tree is visible for a long distance away. The stiff hoary leaves, deeply veined as they are, have an unusual and rather peculiar appearance, while the fruit, if left alone by birds, is of an enticing kind, and fully produced.

Clambering for sometimes fully 20 feet in height over trees and hedges, the pretty Traveller's Joy or Old Man's Beard (*Clematis vitalba*) may now, in the chalky regions particularly, be seen in plenty. The damp and hot season seems to have been all in its favour, the long and strong growth, the intense hue of the leaves, the unusual quantities of flowers, and the show for fruit being unusual. Everywhere the

common Elder has been noted this season as being wonderfully floriferous, the broad and flat head of rather sickly-scented flowers in many instances quite hiding the leaves from view. Spiræas generally are wonderfully vigorous, and the flowers rich and plentiful.

Second growth of the trees is by no means uncommon, and a pretty effect is produced amongst the Oaks by the light Pea-green suffused with pink of the second shoots, and the dark almost Yew-green of the older branches. Even the Sycamore has put forth a second growth, and some of the prettier Maples—to wit, *Acer colchicum rubrum*—are tipped with the brightest vermilion. Christ's Thorn (*Paliurus aculeatus*) has been flowering well; so also has the curious Bladder Senna (*Colutea*) and the Bladder-nut (*Staphylea pinnata*).

American shrubs, too, are not one whit behind, for some of the *Andromedas*, the *Kalmias*, the *Arbutus*, and the *Azaleas* have flowered with unusual freedom of late. *Rhododendrons* of most kinds have been unusually floriferous, and many of the less hardy kinds have done better than usual. Altogether, vegetation, speaking widely, is strong and vigorous, and (particularly that of trees and shrubs) more promising than is usually the case at this time of the year. *A. D. W.*

BOOK NOTICE.

LA TRUFFE, &C. Par Ad. Chatin. Paris: Bailliére. [*Truffles, their Culture, &c.*]

The venerable Professor Chatin has here gathered into one book the information he has obtained during many years of observation and research. In successive sections he deals with the history and the botany of the various species of Truffle, then proceeds to the discussion of the conditions favourable to their production, their cultivation, collection and sale, their medicinal and alimentary properties, and their chemical composition. In fact, nothing relevant seems to be omitted, not even a chapter on the law as it affects Truffle hunters. A bibliographical index, a full table of contents, an excellent alphabetical index, and fifteen excellent coloured plates, showing the details of organisation complete, a monograph for which no terms but those of praise are adequate. The presence of wild Truffles is indicated to the experienced hunters by peculiar appearances of the soil and by the presence of certain flies. Truffles have been cultivated for a long period in various parts of France. Direct culture by the introduction of spawn or of soil permeated with it in appropriate localities in woods or in clearances has been tried with success, but financially speaking, the results have not been satisfactory. Indirect cultivation resolves itself into this: "sow acorns," with this important addition—in a district known to produce Truffles, else you may get Oaks, but no Truffles. A climate unsuited for Vine culture is also unfitted for Truffle culture. The acorns are sown in spring on lightly dug soil, kept surface-hoed, especially in dry weather. After two or three years the seedling Oaks should be thinned out, and this process should be repeated from time to time to obviate the shade, which is found prejudicial to the production of Truffles. Moderate pruning or topping is desirable when the Oaks are four to eight years old. For full details the reader should refer to the book itself, as the process is long and capricious; but in the meantime Vines and cereals may be cultivated on the same land between the rows of Oaks. Where the operations are successful the financial results are very satisfactory. A company established at Arles even promises dividends of 70 to 79 per cent. A moderate estimate is a total cost of 640 francs per hectare during four years, at which time the Truffles should pay their expenses, and part of the capital sunk in their culture. At the eighth year the capital will be all repaid, and the profits will increase each year, the net gain during from fifteen to twenty years being 600 to 1000 francs [per hectare?] M. Chatin's book

abounds in details, but his style is so lively and attractive, and his fairness and accuracy in putting the facts before his readers so obvious, that the perusal of his pages will well repay even those who do not intend to grow Truffles.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

THE weather during the past two months has not been what we might expect for summer, and sunshine has been very deficient. Fortunately, it has been more plentiful in some districts; for dull weather at this season is most unnatural for Orchids, and especially for *Dendrobiums*, which I think have suffered thereby more than any other genus, and if they have not been kept well up to the light and extra attention paid to them, they are almost certain to suffer. A sharp eye must be kept on the *Cattleyas*, and those of *C. gigas*, *C. Gaskelliana*, and *C. Dowiana* that have flowered should have the sheaths removed or split open to the bottom, as water is apt to collect there, thus causing the sheath to rot, which will (and more especially in dull weather) affect the pseudobulb, the newly-made leaf falling a victim first. In such unseasonable weather, also, when perhaps the houses are not sufficiently ventilated, thrips seem to breed and increase at an alarming rate, and they are very fond of *Cattleya Skinneri*, *C. Eldorado splendens*, and *C. Bowringiana*; and if the last-named plant is attacked, weak tobacco-water must be applied before it is possible to dislodge them. If any more re-potting is contemplated this year among the *Cattleya Mossiae*, *C. Mendelii*, or *Lælia purpurata*, and *L. elegans*, it should be done at once, as it will soon be too late to repot such plants, for they are now actively making new growth. *Lælia purpurata* is a grand Orchid, and does well in most places; but, like the *Cattleyas*, it must be kept in good condition at the root. A shift may not be necessary every year, or for the matter of that every two years, but just when they may be found to want it on an examination of the roots. I might add, however, that it is safer to repot a year too soon than to delay the operation after it is needed.

GENERAL WORK.—Where it has been necessary to use permanent shading, such as Summer Cloud, it should now be, if not wholly removed, considerably reduced by having part wiped off. *Catacetsums* and *Mormodes* should now be removed to the Mexican-house, and there rested in full light. Continue to watch closely the *Dendrobiums*, and those that have finished their new pseudobulbs must be taken into a cool but sunny house, and water gradually withheld. This applies to the species that flower in spring and require a long rest, but those that flower immediately the growth is finished must not be removed until they have flowered. *D. formosum giganteum* is one of the earliest of these, and is now coming into flower, and a beautiful Orchid it is—one well worth growing in large quantities, but it must be grown in very small pans to keep it in good health. *D. Phalænopsis Schroderianum* is another that flowers at once, and now that we can see the lovely varied forms, it is seen that this plant has not been over-estimated. *Coclogyne cristata* will now take a plentiful supply of weak manure-water, taking care to keep it from the foliage. *Calanthes* (deciduous) are also benefited by manure-water, especially as they are now pushing up flower-spikes; keep them well to the light. Watch the young and tender spikes of *Aërides Lawrenceana* and others that may be showing bloom, or cockroaches and slugs may do much mischief. *Cattleya Eldorado*, *C. superba*, and *C. Aclandiae*, which have been growing in heat, must be removed after flowering to the *Cattleya-house*, and given a warm and light position, where they will rest. Attend well to damping and ventilation, as advised in previous calendars.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

GENERAL WORK.—Where a variety of vegetables are required in the early part of the year, no delay should have occurred in sowing Cabbages, Onions, and Spinach for early winter use; but another sowing of Cabbage may yet be made if a deficiency is likely to occur, or if those from the first sowings are too forward. The hoe must be kept going constantly among the growing crops; the advantage of frequently going through the

grounds now to cleanse it will be very great, as later on there will be difficulty in doing such work. The land should be cleared of all vegetables as soon as the crop is gathered; there is much loss by allowing these to remain on the ground. In many cases the refuse may be burned on the spot, and the ashes spread over the ground; there is no reason whatever why this department should look worse than others, if such attention is paid it. The digging of all ground that has been cleared should be proceeded with. Trenching and manuring will be necessary in many gardens where constant cropping is imperative. The trenching of the ground is often left till later in the year, when the ground is required for immediate use, and it is often found that the operation is then impracticable, consequently the crops suffer. Ground occupied by spring-sown Onions will soon be vacant, and such ground is often available for the early spring Cabbage; but if at all infested with grub or maggot, it will require a thorough cleansing. Give a liberal dressing of fine gas-lime, allowing it to remain on the surface some little time before trenching; and apply plenty of wood-ashes, charcoal refuse, or soot after the trenching, by lightly forking it into the soil, going over the ground several times a week with a fork or deep rake, to cleanse the soil and destroy the grub.

ONIONS.—Spring-sown Onions will in some instances require bending at the neck, to prevent running. These should be gone over, and the tops all laid one way. When ripe, they should be harvested. I do not like them to remain too long on the quarters, but, if possible, would house them in a cool shed or house, where they can be looked over in wet weather, and stored in their winter quarters, this being a better plan than bunching them.

SHALLOTS AND GARLIC need similar treatment at the earliest opportunity.

HERBS should likewise be cut and dried in a cool dry place, for winter use, and, when ready, tied up in neat bunches and hung in a cool shed, taking care to have a good stock of the most useful kinds. Chervil should also be sown for autumn and winter use.

PARSLEY.—A good bed sown now will come in serviceable in the spring, care being taken to sow thinly in thoroughly-prepared soil. Seedlings should also be transplanted on a warm border from previous sowings. These will give a good return if well looked after, and a frame or shelter can be placed over the crop later, and there will then be no lack of garnishing material in severe weather. Parsley that is to stand during the winter should be well thinned, and, as growth increases, the tops cut, to get a late growth; watering or dressing with soot is very beneficial.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

GREENHOUSE PLANTS.—*Vallotas.*—These will now be throwing up their flower-spikes, and should be assisted with weak manure-water occasionally. After they commence to open into bloom, remove them to a drier and cooler house, so as to prolong their blooming period.

Primulas.—Early-sown plants now occupying 3 or 4-inch pots, and are in want of more root-space, may be moved into others two or three sizes larger, according to the size of the plants. Later-sown plants, if still in boxes or pans in which they were transplanted, should be potted off and placed in a cold frame, well up to the glass at the back of a north wall, keeping them rather close until the young plants get established, when more air should be given.

Cinerarias.—The earliest batch of these should now have their final shift into 6 or 7-inch pots, which will be quite large enough for plants intended to bloom before Christmas. Younger stock should be potted on as growth proceeds, never allowing them to become pot-bound, or receive the slightest check.

Fancy and Show Pelargoniums.—These plants may now be cut back to a couple of eyes, and be kept much drier at the roots until they commence to break. If the weather be wet after the plants are cut back, put them in a cold frame, and when they have broken freely, they should be put into smaller pots, first removing all the old soil, and cutting back the strongest of the roots. Keep them in the frames, and syringe them every bright afternoon, so as to encourage them to make fresh growth. A batch of cuttings may be put in, choosing the strongest shoots. Use a sandy compost, and insert four or five in a 4-inch pot.

Bougardias.—These should also be shifted on as

soon as they are ready. Place a neat stick to each one, to which the shoots should be tied as growth proceeds.

Seedlings of herbaceous *Calceolarias* and *Humea elegans* should be pricked off as soon as ready, and young *Salvias* which were struck this spring should be moved into the pots in which they are intended to bloom; also *Fuchsias* to bloom late must now have their final shift, using a good rich compost.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

TOMATOS.—If spring plants of Tomatos be desired for pot culture, or for planting in borders early next year, the present is a good time to set about securing the stock. This can be done either by sowing seeds of approved varieties, or by propagating (by cuttings) free-fruited forms of those now in bearing. In either case use a rich open compost to fill the body of the pots, and surface with a mixture of leaf-mould and sharp sand. For seeds 4 or 5-inch pots will be best, and the mould may be rather loose. Sow thinly, cover lightly, well water, and plunge in brisk bottom-heat till the young plants appear. A piece of glass placed over the pots will aid the germination of the seed by preventing the escape of moisture, but this should be removed whenever growth shows itself above the soil. Gradually inure the plants to light and air, and pot off when large enough to be conveniently handled. At this, and all subsequent shifts, however, make the soil firm. For cuttings thumb-pots are the best to employ, and the soil should be thoroughly firm; one cutting in each pot will be enough, as they root freely if given a temperature of from 60° to 70°. Shade from the noonday sun, and be careful that moisture is afforded the roots, and also that the atmosphere is moist. As soon as the cuttings have made sufficient roots, remove them to a warm dry airy structure, and transfer them to larger pots a few days afterwards. Aim at securing sturdy growth and freedom from parasitical pests, by exposing the plants to as much sunshine as possible, and maintain a moving air in the house.

PINE SUCKERS.—Get a hotbed in readiness for Pine suckers by the beginning of September. Stable litter and half-decomposed leaves, in the proportion of two of the former to one of the latter, will make a suitable bed. These materials should be well mixed, and frequently turned before finally making it up. To prevent the bed becoming too hot, tread it well, and cover it loosely with 6 or 8 inches of sawdust, tanner's bark, or other such material, in which to plunge the pots.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

HERBACEOUS PLANTS.—The present is a good time to note any alterations that may be considered desirable in the redistribution of those plants in the borders and beds next spring, or before, whose respective heights or shade of colour of the flowers are incongruous when viewed in connection with their surroundings. Among the plants most worthy of notice now in flower may be mentioned *Rudbeckia Newmanii*, *Senecio doricornis*, *Hyacinthus candicans* (the fine tall spikes of this hardy bulbous plant, studded with white bell-shaped flowers, show off to great advantage among other flowers now); *Achillea rosea*, with its compact heads of pretty Verbena-like rosy-crimson coloured flowers, showing well above its own pretty dark green Fern-like foliage; *Helianthus decapetalus*, *H. giganteus*, *Gaillardia grandiflora*, *G. lutea*, and *G. picta*; *Galega officinalis*, *Lemoine's* hybrid *Gladiolus*, planted in groups are very telling in effect. Lilioms of the following varieties are doing well, namely, *L. auratum*, *L. longiflorum*, *L. tigrinum*, *L. tigrinum flore-pleno*, *L. speciosum album*, *L. albo marginatum*, *L. speciosum rubrum*, *L. Batemani*, and *L. atrosanguineum*. Should aphid effect a lodgment on the plants, a slight dusting of tobacco-powder in the evening when the foliage and flowers are damp, will prove effectual. Syringe with clean water the following morning to cleanse the plants from the effects of the tobacco-powder. Among annuals worthy of more extended cultivation may be mentioned *Godetia* Lady Almarle, *G. alba*, and *G. Lady Satin Rose*, *Malope grandiflora*, *Salpiglossis*, *Nigella damascena*, *Zinnias* (double), *Coreopsis Drummondii*, *C. tinctoria*, and *C. coronata*, *Alonsoa Warscewiczii compacta*, having bright scarlet Phlox-like flowers and dark green serrated leaves; *A. linifolia*, with scarlet flowers and long narrow leaves. These two showy and very useful annual plants are not met in gardens so often as they undoubtedly deserve to be—in fact, they seem to be but little known by gardeners gene-

rally. They should be noted among the good things that are to be grown next year. Continue to tie up flower-stems that require support, and train climbers over the space allotted to them, the points of the shoots being allowed to hang somewhat loosely. Rock plants should be kept within their limits; this remark applies to tall, strong-growing ones, as each plant should be allowed due space to develop and show its special features to advantage. Cut out all decayed flower-stalks and leaves from among the fresh foliage, and gather seeds of choice flowers as they ripen.

ARRANGING THE COLOURS FOR 1893.—Now that the floral picture for the present year is at its best, any defects or contemplated alterations to be made in the composition of the beds next year should be noted on a plan of the garden made for that purpose, entering thereon the names of the plants which are to be put into each bed next summer, and propagate the several kinds and varieties in proportion to the arrangements thus made; then there will be no time lost in spring wondering what we shall put in this bed and what in that. The necessary quantity of each kind and variety of plant is previously known and propagated accordingly, with a liberal allowance for any mishaps that may occur before planting time arrives. The same remark applies to spring bedding, that is, in determining in spring when the flowers are at their best what subjects are to be planted in the several beds the following autumn.

GENERAL WORK.—This will consist in clipping Box edging, Thorn hedges, &c.; the latter are not always cut into so good a shape as they might be. In some cases it is necessary to cut Yew hedges square at sides and top, so as to be in character with surrounding objects, but in a general way they should be cut into a rounded point on the top, sloping gradually from mid-height of hedge, giving a section representing a semi-elliptical figure. Hedges thus cut, as they are on this estate, and in most of the nursery-grounds in and about Edinburgh, and further north, are always thick and well-furnished from the ground, and look well.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

APRICOTS.—These should be gone over once more, and all the sub-laterals pinched back, and the points taken out of all the main shoots that have reached their limits. Keep a sharp eye on all young trees, taking care that all the leaders for the frame work of the future tree be made fast to the walls before they get bruised or broken by wind. Old trees bearing heavy crops of fruit now ripe or ripening should be gone over daily, and the best and most forward fruits taken off. These should be with great care taken to a cool fruit room; the finest should be used for dessert and the others for the kitchen. The roots are dry, and mildew is certain to make its appearance, but so long as there are unripe fruits on the trees, little can be done in the way of checking its progress by the use of flowers-of-sulphur; but water in abundance must be supplied to the roots. Should the soil be hard and baked on the top, loosen it with a fork, and then spread on some manure, to be followed by a copious watering till the soil is thoroughly saturated to a good depth. Trees whose fruits have been gathered, or those which have borne no fruit, should be thoroughly washed a few times weekly in hot weather, at the same time attending to the root requirements, so that the trees may make fine stout wood and fruit buds for next year, and if mildew should put in its appearance apply sulphur when the foliage is damp.

PEACHES AND NECTARINES.—These set more fruit than one could have expected. The Dymond, as usual, has done well, together with Early York, Walburton's Admirable, and most of the earlier. The later sorts should have strict attention in removing aside the leaves which overhang the fruit, and so fully expose them to the full sunshine. Three or four times a week make good use of the garden engine in hot weather. Red-spider should be kept in check, for, if once this pest gets the upper hand, the fruits will be both small and flavourless. Washing repeatedly overhead will, in a great measure, keep the trees free and clean. The soil about the roots should be thoroughly moistened with tank-water, and free applications of liquid manure. Early trees, whose fruits have been cleared, should be thoroughly syringed with a mixture of Gishurst Compound or soapy-water. It is far better to wash the trees with a weak solution a few times, than use strong mixtures in the hope of one dressing being sufficient.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY,	AUG. 23	{ Exhibition of Begonias, Apricots, and Plums, at the Royal Horticultural Society's Gardens, Chiswick (two days).
WEDNESDAY,	AUG. 24	{ West Gloucester Horticultural, at Kingswood. Northern Botanical and Horticultural, at Newcastle (three days).
THURSDAY,	AUG. 25	{ Droitwich Horticultural, Kenilworth (three days).
FRIDAY,	AUG. 26	{ Great Fruit Show, at the Exhibition, Earl's Court (two days).
SATURDAY,	AUG. 27	{ Co-operative Show of Flowers, Fruits, and Vegetables, at Crystal Palace.

MEETING.

TUESDAY,	AUG. 23	{ Conference on Begonias, Apricots, and Plums, at Chiswick (two days).
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SALES.

MONDAY,	AUG. 22	{ Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms, at 11.30.
WEDNESDAY,	AUG. 24	{ Dutch Bulbs, at Stevens' Rooms.
THURSDAY,	AUG. 25	{ Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms, at 11.30.
FRIDAY,	AUG. 26	{ Orchids from Messrs. Charlesworth, Shuttleworth & Co., at Protheroe & Morris' Rooms, at 12.30.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—61°·1.

The electric light and the culture of Lettuces.

It is long since we advocated the use of the electric light for forcing purposes, at least on an experimental scale; but our growers have little taste for experiments, and, with characteristic caution, like to see the result of other people's experiments before they embark in them themselves. Well, there have been several such already, and they proved, in spite of some failures, that the matter was quite feasible, but far from remunerative. Now, things have progressed, and one enterprising market gardener of Boston, United States, Mr. W. W. RAWSON, asserts that the electric light hastens the maturity of Lettuces by 10 per cent., and says that the gain produced upon one crop pays for running the lamps during the entire winter. He calculates that there is an average gain of five days for each crop, or a total saving of fifteen days during the winter. He also says that the plants "head up" better under the light, and that the quality is superior. "One need only visit these houses," writes Professor BAILEY in *American Gardening*, "in order to convince himself that here is the acme of winter Lettuce cultivation, in which the electric light plays no small part. It will probably become a prime factor in vegetable forcing." Thirteen houses are, we learn from the same source, devoted to this crop, and one of the houses covers nearly a third of an acre. It is so large that the ground inside is ploughed by steam. It is 333,370 feet in outside dimensions, 15 feet to the ridge, 3½ feet high on the south or lower side, and 12 feet on the north side. The glass

panes measure 20 by 30 inches, and is "double thick." Such a house is simply an enclosed field. The plants grow in the natural soil, 3 to 4 inches being removed every year or two, as it becomes somewhat worn or infested with germs of fungi. From this great house Mr. RAWSON takes at one crop 2000 dozen heads of Lettuces, and the heads are twice the size of those ordinarily seen in the markets. All the houses are supposed to grow three crops of Lettuce and one of Cucumber during the year; the first Lettuce crop is taken off just before Christmas, the second from February 14 to March 1, and the third about April 1. Then the Cucumbers are started, and another crop is off by September or October, in time to give room for the winter Lettuce. In all the houses steam-heat is used. "Hot water is not applicable to such large plants [houses]." The light is produced by three 2000 candle-power are lights, shining all night throughout winter. Some of our routine practitioners will look on all this as an American tale, but our authority for it is Professor BAILEY, one of the foremost horticulturists in the States, and the editor of *American Gardening*, in which publication illustrations and full details are given. This question of the use of electric light for forcing purposes has survived the initiatory period of ridicule; it is still ignored by our cultivators; but we trust before very long we shall see the success of Mr. RAWSON repeated here, and then we expect to be told that this sort of thing was known long ago. When we get a properly-equipped school of horticulture, and teach something beyond routine, we may expect our progress to be quicker, or else to succumb utterly to foreign competition.

URCEOCHARIS CLIBRANI.*—Some short time since Messrs. CLIBRAN favoured us with a flower of a hybrid raised by them between *Urceolina pendula* (alias *aurea*) and *Eucharis grandiflora* (alias *amazonica*), which was so beautiful and so interesting that we requested them to furnish us with materials for an illustration, to which request they kindly assented by sending Mr. W. G. SMITH the specimen whence the illustration (fig. 36, p. 215) was taken. The leaves are broadly ovate acute, the numerous stalked pure white flowers are borne in umbels on the extremity of a scape, each is ascending or horizontal, about 2½ inches long, with a very slender, often curved, cylindrical tube, dilating into a cup-shaped limb, less than half the length of the tube. The six segments are of about equal size, ovate, slightly acute, and spreading. Stamens six, inserted at the throat of the tube, nearly as long as the segments; filaments with a long linear petaloid appendage at the base; anthers depauperate, versatile. Ovary ovoid, oblong obtuse, deeply 3-lobed, 3-celled, with numerous superposed ovules in each cell; raphe next the placenta. Style as long as the perianth; stigma shortly three-lobed; capsule? bulb? The flowers are thus curiously intermediate between the two parents in form. They are borne on ascending stalks as in *Eucharis*, not pendulous as in *Urceolina*; but the ovary is three-lobed as in *Urceolina*, not globose as in *Eucharis*. The slender perianth-tube is also more like that of *Urceolina*, whilst the limb is intermediate between the bell-shaped limb of *Urceolina* and the funnel-shaped *Eucharis*. The appendages or barren branches of the stamens are more distinctly marked than in either of the parents. So much for the structural features of this interesting plant. As to its value for decorative purposes—we may safely allow the illustration to tell its own tale. A few flowers were shown by Messrs. CLIBRAN, of Oldfield Nurseries, Altrincham, on July 26, at the Royal Horticultural Society, under the name of *Eucharis*

* *Urceocharis*; Mast., Gen. Nov., arte cl. Clibran inter *Urceolinam* et *Eucharidem* confectum. M. T. M.

Clibrani (see *Gardeners' Chronicle*, July 30, p. 138). We hope those gentlemen will excuse us for adopting a name more in accordance with the nature of the plant. In order that a comparison may the better be made, we give illustrations of *Urceolina pendula*, one of the parents (fig. 35); and of *Eucharis Bakeriana*, which is nearly allied to *E. amazonica*, and of similar form (fig. 34).

A FLORAL HOROLOGY.—Among the French inventions of the past few weeks, and described in a recent number of *Le Figaro*, is one to which the attention of the readers of this journal may be called. M. DEBERT, who describes himself as a gardener, terms his new invention an "Horloge des Fleurs," and he has certainly worked out an exceedingly ingenious contrivance, and which, like so many similar things, is perhaps a good deal easier to do on paper than elsewhere. M. DEBERT traces out a piece of ground, which may be perfectly level or on a slope, a large circle of 10 metres in diameter, divided like a sun-dial into the twelve hours of the day. This circle is transformed into a carpet composed of grass and ornamental-leaved plants of different colours, whilst the figures of the hours are formed of plants with pale-coloured leaves, the background being in sombre colours. In the centre of this circle a subterranean excavation contains the machinery of a clock, on a very large scale, and worked with the aid of a reservoir of water preserved at a constant level. The clock-work strikes the hours and half-hours. At last, two large hands, each of from 4 to 5 metres in length, and covered with flowers and ornamental-leaved plants, are put into motion by the mechanism in the centre, and the time of the day is thereby indicated, and, naturally, may be detected a long way off. It goes without saying that M. DEBERT proposes to erect examples of his floral horology in all sizes, from dimensions necessary for large parks to those for small villa gardens. The chronicler in the *Le Figaro* says that he will be very much surprised if in the course of a year the railway traveller does not see in the midst of the localities through which the train takes him the pleasing spectacle which these "horloges des Fleurs" will afford. It will certainly afford a much-needed variety to journeys which are so monotonous and tiresome. But the more sober-minded Englishman will not be so sanguine as his neighbour across the Channel. The idea is certainly ingenious, and to M. DEBERT is due the credit of having worked it out in a very clever manner. But the age is not given to fantastic displays in horticultural possibilities. Had the idea been formulated when the Dutch or other formal fashions in gardening had a vogue, no doubt the inventor would have made a big fortune. As it is, we fear all his ingenuity is wasted.

PROSPECTS OF THE SEED CROP IN HOLLAND.—It is well known that large breadths of agricultural and garden seeds are grown in the Netherlands. Advices from one of the most important seed producing districts—Enkhuizen—show that there, as in England, the harvest will depend largely on the prevalence of dry sunny weather during the next two months. Cauliflower is in full bloom and decidedly promising. Cabbage, Savoy, and winter greens look satisfactory on the whole, but the caterpillar has injured them in some parts. Swedes look well. Turnips and Mangels are by no means favourable. Beets promise well at present. Spinach and Peas are satisfactory; but Radish a poor crop, with the exception of the white Spanish. Onions are good. Beans and Cucumbers stand well; but want warm weather. Carrots look satisfactory; and Parsley, which promises to be a thin crop in this country, is represented as being very good. The next six weeks will be an anxious time for the seed grower at home and abroad.

TREAT TO EMPLOYÉS.—On Friday, the 12th inst., Messrs. J. LAING & SONS, with about eighty of their employés, spent a pleasant day in Folkestone.



FIG. 36.—URCEOCHARIS CLIBRANI, FLOWERS WHITE: EUCHARIS. (SEE P. 214)

A dinner was presided over by the senior member of the firm, Mr. JNO. LAING, whose health, and that of Mrs. LAING, was proposed and received with enthusiasm.

THE GREAT FRUIT SHOW AT EARL'S COURT.

—There is every promise, says the *Journal of Horticulture*, of a very fine show of fruit at Earl's Court on August 26 and 27. Intending exhibitors who have not sent in their entries should do so at once. The prizes are excellent. In the first of the forty-six classes, prizes of £12, £9, £6, and £4, are offered for a collection of fruit, not less than twenty dishes. In this collection four varieties of Grapes (two white, two black—two bunches of each variety), two Pines, two Melons, two dishes of Peaches, two of Nectarines, and two of Plums, are required; the remainder to be distinct. In the second, £8, £6, £4, and £3, are offered for twelve dishes, and prizes of equal value are offered for ten varieties of Grapes, two bunches of each. There are eleven classes for Grapes altogether, two for Pine-apples, two for Figs, six for Peaches and Nectarines (grown and ripened out-of-doors), five for Plums, nine for Apples (the first five for outdoor fruit), four for Pears (two for outdoor fruit), and four for Tomatos. In connection with the show a social gathering of the gardeners of the United Kingdom will be held on the afternoon of the 26th, followed by a dinner in the exhibition building, which, with liquid refreshments included, will be provided at 4s. a head. As only a limited number can be accommodated, the tickets will be issued according to priority of application. Dinner at 5 P.M.

VARIATION OF SEED.—M. SCHREIBAU, by his observations, establishes a relation between the date of unfolding of the flowers and the weight of the seed. Those seeds which are produced from the earliest flowers are, he says, the heaviest, and ripen the soonest. M. SCHREIBAU's observations and experiments were made on Clover, Sainfoin, Hemp, Colza, Buckwheat, Sunflower, Wheat, Barley, and Oats, the results being uniform. The practical inference is, select the biggest seeds from the finest ears or spikes or pods, as the case may be. M. SCHREIBAU's paper may be read in the *Comptes Rendus*, July 25, 1892, p. 267.

MEAT-SOFTENING CUCUMBERS.—A cucurbitaceous plant, having the faculty of digesting nitrogenous substances, like the Papaw, is the subject of a paper by Professor GREEN, in the *Annals of Botany*, July, 1892. Certain ferments, or, as they are now called, enzymes, convert starch into sugar. Of this, diastase is the most generally known. Other ferments soften fibrin and albumen, and it is to their presence that the so-called meat-eating tendencies of *Drosera*, *Nepenthes*, *Sarracenia*, and of the Papaw are due. In the germinating seed of Lupin and of the Castor-oil plant, Professor GREEN has found a similar ferment, and now adds another in the case of *Cucumis utilisissimus*, the fruits of which Dr. BONAVIA had noted as having the property of softening muscular fibre like the Papaw. An accident showed that this property is not shared by all the cucurbits, else we should not hear of the indigestibility of the cucumber!

"FERNS AND FERN CULTURE, ETC.," by J. BIRKENHEAD. (HEYWOOD, Manchester.)—This is a little book which ought to have been mentioned before, but it is not too late to commend it to the notice of Fern-growers. The book only contains some 120 pages, but within these limits Mr. BIRKENHEAD manages to give a great deal of sound information on Ferns and their cultivation, the necessary soils and composts, the various methods of cultivation in pots or otherwise, the light, heat, and moisture to be afforded them, the methods of propagation, and other points which justify the title of the book. Lists are given of those genera which require different descriptions of composts—a very useful piece of information for amateurs. Not less so are the instructions given as to potting. The illustrations are numerous, and mostly pretty, but one on p. 60 should be omitted in future as not worthy of

its fellows. It is a book that no amateur can well dispense with.

STOCK-TAKING: JULY.—The returns for the past month of the imports and exports exhibit the features which had been made the subject of not very difficult forecast—an increase in the value of imports, and a decline in that of exports. Last week the average price of Wheat is placed at 29s. 7d. per imperial quarter; the price in the corresponding week last year was 39s. 4d., or nearly 10s. more. Doubtless an increase in the manufacture of preserved fruits has induced the producers to place a larger supply of sugar than usual on the market. With these preliminary remarks, we give the accompanying extracts from the summary for July of the imports of Colonial and Foreign products:—

IMPORTS.	1891.	1892.	Difference.
Total value for month	£32,824,111	£33,497,585	+£673,474
§II.—(A.) Articles of food and drink — duty free	12,103,213	13,182,895	+1,079,682
(B.) — do., dutiable	2,183,195	2,133,056	—150,139
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)... ..	4,107,537	3,894,462	—213,075
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,967,914	4,283,371	+315,457
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	905,328	851,901	—53,427
(B.)—Parcel Post ...	45,938	49,726	+3,788

It may be as well here to note that the increase during the past seven months amounts to £1,038,907. The section relating to imports of fruits, &c., has this month its usual value for growers, salesmen, and consumers, as witness the following excerpts:—

IMPORTS.	1891.	1892.	Difference.
Fruits:—			
Apples, raw ... bush.	27,055	83,914	+56,859
Cherries ... ..	...	60,948	+60,948
Plums ... ..	...	70,721	+70,721
Pears ... ..	...	58,559	+58,559
Grapes ... ..	...	7,406	+7,406
Unenumerated, ...	495,787	205,873	—289,914
Onions	265,984	301,026	+35,042
Potatoes ... cwt.	900,319	769,406	—130,913
Vegetables, unenumerated, raw, ... value	£152,741	£149,116	—£3,625

Interesting as all of these figures undoubtedly are, they could be made much more valuable by the abolition of the words "unenumerated fruits" and "unenumerated vegetables." The reader may have noticed the recent arrival, per s.s. *Majestic*, from California, of 4000 cases of Pears, Pine-apples, Apricots, and Peaches. What the condition of the fruit on exposure was, we do not know of our own knowledge; but such a long passage, under often varying conditions as to temperature, must have been very trying for the fruit. A record of the temperatures experienced from orchard to refrigerator on board ship would be instructive.

THE EXPORTS

for the month again show a reduction amounting to £2,481,515, or over 11 per cent.; but as there was a working day less than in the corresponding period in 1891, the deficit may be reduced by some 3 per cent. This does not alter the fact that there is a falling off in the value of the exports (as well as in the quantity)—or the doing of more work for less money. The decrease in the seven months amounts to £14,686,765. There is some comfort in the fact that invention is being stimulated in this country, and in the production of textile manufactures some triumphs may soon have to be recorded. Of course, our

greatest drop is in the trade with America; but they are learning their lesson there. A high judicial authority has just reported that the recent terrible strikes are the result of the McKinley Tariff, which certainly does not appear to benefit the masses, whose good ought to be sought after by all sound statesmen. It is a great pity that experience has to be purchased at so high a figure as nations have to pay.

SUCCESSFUL PUPILS.—Among the successful candidates at the Science and Art examination held at York in May, we notice the names of Mr. A. SUTTON, Castle Howard Gardens, who passed in botany; in addition to Mr. KEMP, the Gardens, Kirkham Abbey, Messrs. JOHN BANNERMAN, JAMES KIRSS, JAMES MACKIE, J. T. HAYTON, and E. HAYTON, who have been equally successful in agriculture. All the pupils have been under the instruction of Mr. J. RIDDELL, head gardener to the Earl of CARLISLE, who, since he went to Castle Howard four years ago, has done everything in his power, by individual instruction in the sciences connected with horticulture, combined with a dissemination of practical knowledge in gardening, to assist the young men in acquiring a scientific knowledge of their profession.

THE WHITE LADY.—It is not often that the horticultural press has occasion to notice stage-plays, but there is, we learn, at the present moment an excellent *lever de rideau* at the Prince of Wales Theatre, which has a distinct interest to our fraternity. The scene is a cleverly-painted conservatory, and one of the chief actors is BLAKE, the gardener, who has succeeded in raising a new white Geranium, which he calls "The White Lady," in which he is confident there is a fortune. With the breaking up of the mansion to which BLAKE is attached as gardener, all the effects were to be sold, and, foreseeing the inevitable, he has saved up his odd sixpences and shillings until his collection has reached a sovereign. Not liking, as he expresses it, to have so much money about his person, he conceals the coin in the pot in which "The White Lady" flourishes, determining at all costs to purchase the apple of his eye, or rather the plant after his own heart. As is so generally the case with stage catastrophes, the "inevitable" is at the last moment warded off, and the sale does not take place. BLAKE, therefore, is twenty shillings to the good, and "The White Lady" is not put up for sale, and so we may assume that he lives happy ever after. The little "curtain-raiser" is decidedly clever, and a real living white Pelargonium is one of the silent actors in the piece; whether its name is really "The White Lady" or not, we cannot say, but the plant is a well-grown specimen.

CO-OPERATIVE PRODUCTION.—The labour association for promoting co-operative production, based on the co-partnership of the workers, will again organise an exhibition of co-operative productions at the Crystal Palace, in conjunction with the National Co-operative Festival. The exhibition will be opened on Saturday, August 20, and promises to be of a large and more representative character than any that have been held. Particulars of the exhibition will be forwarded on application to the Secretary, 9, John Street, Adelphi, London, W.C.

EMPLOYÉS PICNIC.—The employés of Messrs. LAIRD & SINCLAIR, nursery seedsmen, Dundee, held their annual picnic on the 10th inst. The place chosen was the Den of Airrie, and between fifty and sixty left Dundee in brakes. Mr. DAVID SMITH proposed a hearty vote of thanks to Messrs. LAIRD & SINCLAIR, who had contributed handsomely to the expenses of the excursion. Mr. J. W. LAIRD, in replying, said it afforded the firm much pleasure to assist in making the holiday a pleasant one.

GREEN PEAS.—Probably owing to the lack of favourable weather during the time the crops of early Peas were in bloom, and a failure on the part of many of the blossoms to set, causing a scarcity of crop, green Peas have fetched an unusually high price in some parts of the country, and especially in Lincolnshire, prices having advanced to far beyond their normal level. In consequence, many fields of

Peas intended for seed purposes have been picked over, consequently the usual harvest of seed Peas will be considerably curtailed. Much, therefore, depends upon the character of the weather during the next three weeks. Should it turn to wet the Pea harvest will be unfavourable, and some sorts scarce indeed.

A BOOK ABOUT THE GARDEN.—Dean HOLE, encouraged by the phenomenal success of his book about Roses has now issued through Mr. EDWARD ARNOLD, 37, Bedford Street, what is practically a reprint of various articles, published in the gardening journals, especially in the *Garden*, as well as in the *Guardian*. For instance, we have the "Six of Spades" now in a complete form, and other old friends, which lose none of their freshness on re-perusal. We may recommend those who have not read them before to avail themselves of the opportunity now, for they will find the Dean's pages sound in principle and amusing in form.

ODONTOGLOSSUM EXCELLENS \times .—When this Orchid was first introduced by Messrs. Low it was considered to be a natural hybrid between *O. Pescatorei* and *O. tripudians* or *O. triumphans*. This was, of course, a matter of inference only, but Messrs. VEITCH have demonstrated its correctness by raising *O. excellens* out of *O. Pescatorei* by pollen of *O. triumphans*. *O. Wilckeanum* \times in like manner was proved to originate from the crossing of *O. crispum* and *O. luteo-purpureum*, as had previously been supposed. *O. excellens* var. *dellense* is figured in the July number of the *Lindenia*.

GARDEN DESIGNS AND ARCHITECTS' GARDENS.—Mr. W. ROBINSON has published, through Mr. MURRAY, an elegant booklet, in which he attacks with force and vigour the antique heresies that have been of late put forth in certain books, written by architects and reviewed in these columns. As we shall probably have occasion to allude at greater length to Mr. ROBINSON's theories, we defer any further notice now, merely commending the beauty of the illustrations.

TURTLE SEEDS.—Under the name *Chelonospermum*, Mr. HEMSLEY describes and figures in the *Annals of Botany* some highly-curious seeds of various Sapotaceous plants from the Solomon Islands and Fiji. The seeds, which measure about $1\frac{1}{2}$ inch in their longest diameter, are in form and colour very like turtle shells, being convex on one side and flattish on the other, and in some cases marked with projecting wart-like processes.

HOOKE'S "ICONES PLANTARUM."—The last issued part (July) is entirely occupied with illustrations and descriptions of Indian Orchids. Most of them, are unimportant, horticulturally speaking, but some such as *Arundina Cantleyi*, t. 2112, *Eulophia holochelia*, t. 2116, and some others, will interest gardeners as well as botanists. We trust we may soon see them in the Kew collection.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY: FLORAL COMMITTEE.—Meeting of July 27, 1892.—The following certificates were awarded:—First-class Certificates. To Messrs. E. H. Krelage & Son, at Haarlem, for *Tigridia violacea* (imported new plant); to Messrs. De Graaff Bros., at Leiden, for *Tigridia violacea* (imported new plant); to Mr. Jac. Smits, at Naarden, for *Begonia tuberosa erecta* fl.-pl., with indented petals; to Mr. C. G. Van Tubergen, Junr., at Haarlem, for *Gla-diolus Saundersii* \times *gandavensis*, *Andromeda* (new plant), *Dora*, *Lydia*, *Philomela*, *Vesta*; *Hymenocallis macrostephana*, Baker. Second-class Certificates.—To Mr. W. Koелеmeijer, at Wormer, for *Phlox* hybr. fol. var. (new plant); to Messrs. E. H. Krelage & Son, at Haarlem, for *Begonia tuberosa* fl.-pl.; to Mr. H. J. Lemkes, at Alfen aan den Rijn, for *Poa trivialis foliis albo-vittatis*; to Mr. C. G. Van Tubergen, Junr., at Haarlem, for *Calochortus venustus Vesta* (new plant), *Hymenocallis tubiflora* (insufficiently known plant). Votes of Thanks.—To Mr. H. J. Lemkes, at Alfen aan den Rijn, for *Dianthus caryophyllus* fl.-pl. Germania; to Mr. J. H.

Schober, at Putten, for a collection *Dianthus caryophyllus* fl.-pl.; to Mr. H. J. Van Heijst, at Wijk bij Duurstede, for *Ornithogalum revolutum*.

EXHIBITION AND CONFERENCE ON BEGONIAS, BRITISH FERNS, APRICOTS, AND PLUMS.—On Tuesday and Wednesday next, August 23 and 24, the historic gardens of the Royal Horticultural Society at Chiswick, will be enlivened by a great exhibition of Begonias, Apricots, and Plums, in addition to which growers of British Ferns will contribute specimens of our native Ferns, by way of showing what beautiful forms and varieties may be obtained by patient cultivation and careful hybridisation. All the committees will meet in the gardens at 11 A.M. precisely, on Tuesday, August 23, and



FIG. 37.—*CYPRIPEDIUM MORGANII* A.C. 3: SHOWING DISPLACEMENT OF PETAL, ETC. (SEE P. 215.)

there is no doubt but that two of them, viz., the Floral and Fruit, will have a busy time of it, while exhibitors of Orchids will receive the attention of the Orchid Committee at the same time. Every amateur grower of Begonias, Apricots, Plums, and British Ferns should endeavour to take part in this exhibition, and should at once, if it has not already been done, communicate the nature of their exhibit to the Garden Superintendent, so that due provision for space, &c., may be made in good time. In accordance with the practice inaugurated a few years ago, the Society will hold a Conference in the Great Vinery on each of the above-mentioned days at 2 P.M. The subject of the first day's Conference will be "Begonias." Mr. HARRY J. VEITCH, F.L.S., has consented to take the chair, and open the Conference, after which papers will be read by Messrs. W. WATSON, J. LAING, and H. CAN-NELL, on the "Cultivated Species of Begonia," "Tuberous Begonias," and "Winter-flowering Tuberous Begonias," respectively. On the second day (August 24) the Conference on Apricots and

Plums will be presided over by Dr. ROBERT HOGG, F.L.S.; and Messrs. T. FRANCIS RIVERS and J. SMITH will read papers on "Dessert Plums" and "Cooking and Market Plums," respectively; while Mons. F. JAMAIN of Paris will contribute a paper on "Apricots." Besides the exhibition of flowers and fruits which will be brought together on this occasion, it may be stated that the gardens themselves look extremely beautiful at present, and will well repay a visit not only from gardeners, but also from ladies and gentlemen interested in the promotion of horticulture. The Conference on Begonias, August 23, will be highly interesting, as showing what progress has been made during the last twenty-five years in the raising of new varieties. Curiously enough, however, the progenitors of the present types seem to have almost disappeared except from botanic gardens, and it would add great interest to the Exhibition if anyone who has specimens of them—*B. roseiflora*, *B. Veitchii*, *B. Pearcei*, *B. Davisii*, *B. boliviensis*, and *B. Clarkei*—would send them to the Exhibition, addressed to the Superintendent, Chiswick Gardens.

NEW SEASON HOPS.—The first pocket of this year's Worcester Hops passed the public scales on Friday, the 12th inst. They were grown by Mr. H. T. TAYLOR, of Showle Court, Ledbury, and purchased by Messrs. EDWARD WEBB & SONS, Hop and Seed Merchants, Wordsley, Stourbridge, who sold them to Mr. BENJAMIN ELWELL, of the Delph Brewery, Brierley Hill, at £10 per cwt.

THE AUGUST HORTICULTURAL MEETING AT GHENT.—A Certificate of Merit was awarded for an excellent lot of single tuberous Begonias from the Société Louis Van Houtte père, and another, to the same, for a collection of double tuberous Begonias. Certificates were also awarded for *Odontoglossum mulus odoratum*, to M. Jules Hye, very fine, with large brown spots upon it, and having a vanilla-like scent. Certificates of Merit for *Tropæolum Lindeni*, to M. Alf. Van Imschoot, with decorative foliage resembling that of certain coloured-leaved *Aristolochias*; *Cattleya gigas imperialis*, a distinct variety, but paler than the type; *Gongora atro-purpurea*, flowers in clusters, reddish-purple, a shy bloomer; *Cypripedium Curtisii* atro-purpureum, flowers large, and deeper in colour than usual; *Cattleya gigas Warscewiczii*, a fine example, with fifteen brightly-coloured flowers; and to *Cypripedium Rothschildianum*—all from the same exhibitor; also to *Phajus Humbloti*, from M. Aug. Van Geert; *Lælia elegans Vervaeti*, from MM. Ed. Vervæet et Cie., a good specimen of an excellent variety; *Cypripedium elegans*, from M. Jules Hye, an excellent hybrid from *C. Harrisianum*. *Nephrolepis cordata compacta nana* from M. L. Desmid-Duvivier; a new Fern of great promise, fronds short, bright green, habit compact. *Lilium longiflorum floribundum*, from M. H. Schmitz; a free-blooming variety, each stem bearing from eight to ten white flowers. *Cypripedium laevigatum platytænium*, from M. J. Hye; with flowers remarkable for breadth of petal. *Odontoglossum tentaculatum*, from same exhibitor; a well-spotted and distinctive variety. *Sobralia xantholeuca*, from M. Moens; flowers yellow—a shy bloomer. *Cliveia minata*, fol. var., from M. Jules de Cock, with fine panicle of bloom. Botanical Certificates were awarded for *Ceropegia Saundersii*, to Van Imschoot; a curious *Stapeliad* with greenish flowers. *Cypripedium Lawrencianum bilabellum*, to M. L. Spaë-Vandermeulen, an interesting plant; the flowers borne on two stems and each with a double lip. Certificates for culture and blooming:—1st, *Dracæna australis auro-lineata*, to M. Bernard Spaë; 2nd, *Adiantum Weigandi*, to MM. Duriez Frères. Honorable mention for *Odontoglossum Uro-Skinnerii* to M. Van Imschoot; *Aërides quinquevulnerum* to MM. Vervæet et Cie.; *Adiantum grandiceps* to M. L. Desmid-Duvivier; *Miltonia virginalis*, to M. Aug. Van Geert, and *Pteris Victoræ* to the same exhibitor.

THE ROYAL SCOTTISH ARBORICULTURAL ASSOCIATION.—The members seem to have had what our American cousins call a good time on the

occasion of their annual outing. Leaving Edinburgh on the 10th, the party first visited the veteran, Dr. Cleghorn, near St. Andrews, then passed on to Balbirnie, to which they had been invited by Colonel BALFOUR. Falkland Palace, the seat of the Marquis of BUTE, next attracted the attention of the foresters, then Nuthill, and finally the party came to rest for the night at Perth. Next morning a visit was paid to Tayside, Scone, and Murthley, where the Conifers attracted special attention. Perth was regained in the evening, where the annual dinner was held; Prof. BAYLEY BALFOUR in the chair. On the third day the party visited Methven Castle, Lyndoch woods, and the Cairnies, returning to Perth in time to catch the evening trains in various directions. We publish an instalment of a report of the proceedings in our present issue, and hope to insert further portions on another occasion. In the meantime, we are asked to give expression to the cordial feelings of gratitude experienced by the members for the courtesy and hospitality everywhere shown them.

IRIS LORTETI.—We have received the following from Prof. FOSTER.—I have received two letters which make me wish to add a few lines to the note on *Iris Lorteti* (see p. 152). Mr. VAN TUBERGEN writes, "You say you take the rhizomes out of the ground when the foliage is dying off. Do they really lose their leaves with you? With me, where the subsoil is continually moist, the plants remain fresh and green, and I am obliged to take them up when still quite full of life." Mr. EWBANK writes, "Mr. VAN TUBERGEN advised me to take the rhizomes up three or four weeks after flowering, while the leaves are still green, and put them in the greenhouse, the object being to move the plants before growth had begun. In following his advice, I found that growth had already begun, and some shoots of *I. Lorteti* were in a very uncomfortable state for moving at all. It seemed to be murder to take them up." These last words of Mr. EWBANK make it easy to understand why I am in general opposed to the "taking up method" of treating these *Irises*. It is undoubtedly a barbarous method, and should only be resorted to under compulsion; but it seems to me necessary for these special Palestine *Oncocyclus Irises*, until at least they have become acclimatised. To answer the above two questions, we must go back to first principles. Under their natural conditions, the leaves of these *Irises* die completely down soon after flowering, the "goodness" of the leaves descends into the rhizome, and this forms buds or shoots for next year's growth. Since, in the native country the drought which has withered the leaves, continues for a long time, the new-formed buds remain for a long time dormant; they do not start into active growth until the next season comes. They begin to be formed quite early, at flowering time, or even before; but the dry weather, which, after flowering, withers the leaves and ripens the seeds, so governs the changes in the plants, that the buds are not developed into leaves, but increase and fatten as mere buds. It is not until long afterwards, when the rain, "the early and the latter rain," comes, that the buds develop into tufts of leaves. In our climate the changes are different, and that in proportion to the moisture of the soil. On my dry hill, the growth of the plant does slacken, and the leaves do begin to die down, especially if aided with top lights; and when I take the rhizomes up, three or four weeks or so after flowering, the buds on the rhizome are white, fat, and dormant. But I can quite understand that at Haarlem, growth goes on more continuously, and the tokens which are useful to me are wanting to Mr. VAN TUBERGEN. Each of us must act according to his climate and conditions, checking and connecting our scientific deductions by careful experiences; and this, I take it, is the true art of gardening. Each of us has to strike a proper mean between two extremes. If the plants are taken up too soon, say immediately after flowering, there is too little opportunity for the foliage to enrich the rhizome; for the ripening, which goes on in a greenhouse, in a plant torn from its surroundings,

is but a sorry substitute for natural ripening in the ground. If, on the other hand, the plants are allowed, in a Mid or North-European climate, to remain too long in the ground, the newly-formed buds start prematurely into active growth, and the store of goodness gathered since flowering is wastefully expended. Each of us must be guided by experience to snatch the moment at which we may expect to do least harm, and gain most good. "There ain't no busses running from the Bank to Mandalay;" there are no rules in this bit of gardening which will suit all gardens and all seasons. I recommend for myself the taking up of these Palestine *Oncocyclus Irises*, because they with me make active growth in the late autumn to a much greater extent than do other *Oncocyclus Irises*; and when I do not take them up winter plays havoc with their well-grown foliage. The other *Oncocyclus Irises* with me, for the most part, make very little growth in autumn after the first spurt, which follows the late September rains, and I can much more safely leave them in the ground; for remaining in the ground is undoubtedly the most natural condition, and it is with great reluctance that I am driven to interference.

THE LATE DR. JAMESON.—The following letter has been sent us for publication:—

"British Legation, Quito, June 24, 1892.

"Sir,—You are probably familiar with the name of Dr. JAMESON, a botanist who was, I believe, in constant correspondence from this place with your predecessors at Kew, and who rendered great service to science. He died some years back, absolutely penniless, leaving two daughters, one of whom became a nun, and is thus provided for; the other, a most worthy and respectable lady, of past middle age, has supported herself, God knows how. On my arrival here, I found her in a penniless condition, and have made her a small allowance. She is, however, now suffering from some dreadful internal complaint, which is greatly exaggerated by the privations to which she has been exposed, and the want of proper food and medical comforts which she experiences. The calls on me are large, so I have ventured to think that [English botanists] might possibly be able and willing to help this poor lady, the daughter of a man to whom botany owes much, to pass her few remaining days—which must in any case be days of suffering—without at least the additional misery of want and privation. Should my application be successful, would you kindly place any sum that may be subscribed to my account at my bankers, Messrs. GOSLING & SHARPE, 19, Fleet Street, London, E.C., and advise me of having done so. I will undertake that she gets it, probably the best form would be in that of a weekly allowance. I venture to suggest this mode of payment, as apart from other reasons connected with the difficulty of postal and financial arrangements, the exchange here is much in favour of the resident (at this moment 50 per cent.), so that Miss JAMESON would be the gainer to that extent. (Signed) W. H. D. HAGGARD, H. B. M. Minister Resident. P.S.—There is only one other English resident here besides myself." Dr. JAMESON was for many years Professor of Natural History in the University of Quito, not a very lucrative post; and he was the author of various publications on the flora of the country.

THE LATE MR. EDWARD COOPER.—We have received the following note:—"The sudden death of Mr. COOPER (for seventeen years gardener to the Rt. Hon. JOSEPH CHAMBERLAIN, M.P.) created amongst a large circle of friends sincere grief for his loss, and of earnest sympathy with Mrs. COOPER, whose health has long been in a shattered state. Several of her late husband's personal friends feel a desire that this sympathy should take tangible form by the raising of a sum of money to be at Mrs. COOPER's disposal in the hour of need. Mr. COOPER's generous nature, coupled with the drain upon his income in various ways appertaining to Mrs. COOPER's ill-health, left but little at his death for future wants, and as Mrs. COOPER has also her aged mother to support, it is thought that by forming a small

committee of friends, and raising a sum of money to be at her disposal, much will be done to materially lessen her grief, as well as show the practical sympathy of friends. Treasurer: Mr. H. J. CLIFFORD, King's Heath. Secretaries: Mr. H. A. BURBERRY, Ethel House, King's Heath; Mr. G. JOHNS, Moseley," Birmingham.

PETER LAWSON & SON, LIMITED, EDINBURGH.—At the annual general meeting of the shareholders of this Company, held on the 17th inst., the report as issued to the shareholders was adopted, and a dividend of 10 per cent. per ann. was declared; £1500 was added to the reserve fund, and the balance of £2974 12s. 9d. carried forward to next year. The retiring Directors, Mr. EASTES and Mr. PATERSON, were re-elected, and Mr. DAVID SYME, the present manager of the Company, was elected a member of the Board.

DISPLACEMENT AND SIMULATION.

As these are rather long words, shall we say, change of place and of form? After all, there is not much to choose between a multiplicity of syllables and an abundance of words. The reader shall take his choice; meanwhile, we put on record the appearances presented to us by a *Cypripedium* sent to us by Mr. Bull. As will be seen by the illustration, fig. 37, the two lower sepals (*s s*) are present in their usual place, and of their customary form. One of the lateral petals, the lip, and the column are all normal. The peculiarity, then, rests in the upper segment of the flower. We say "segment," because that is a safe expression, and it would be rather a risk to assert either that it is a sepal or that it is a petal. In position, it is certainly a sepal; in appearance, it is partly a sepal, partly a petal. It is not prudent to make a positive assertion, because we are unable to see how it all came about. Could we have traced its erratic course from the beginning, there would have been no difficulty at all about the matter. On the whole, we incline to the belief that the upper segment is in reality a lateral petal displaced, and assuming, in a measure, the guise of a sepal. We may assume that, for some reason or other unknown, the upper sepal was not developed, and that the petal gradually took its place, and partly its appearance. The flower is that of *C. Morganæ*, a hybrid between *C. Stonei* and *C. superbiens*, and its hybrid origin may possibly have something to do with the perturbation of the floral organs.

The flower is shown in fig. 37 of the natural size. At the lower part is shown the column detached, with the two anthers, *A A*; at the upper part are two diagrams showing the relative position of the parts of the flower. The upper one shows the arrangement of the parts of the flower in their normal condition; in the lower one is a ground plan of the malformed flower. In each case, *s* represents a sepal, *p* a petal, *c* the column, *l* the lip, and *o* the ovary.

In the second illustration, taken from a flower of a *Cattleya* [*? C. guttata*], sent us by Mr. Smee, we have a similar transposition, fig. 38. In it there are two lateral sepals, two petals, lip-like in their character, crossing them at right angles, and a straight erect column, with an anther at the top. This arrangement of the parts of the flower in two's instead of in three's is of a common occurrence in *Orchids*. The lip-like character of the petals is an instance of "peloria," or that change in which an habitually irregular flower is made regular by the increase in number of its irregular portions.

HOME CORRESPONDENCE.

ABIES GRANDIS.—I send you cones of *Abies grandis*. Here it is a fast-growing tree, well furnished with branches to the ground, but, like most of the Silver Firs, the cones are borne near the top of the tree; with us, there is not a cone nearer than 35 feet from the ground. *W. Osborne, Fota, co. Cork.* [A fine specimen of a noble tree. The cones were figured in these columns from a native specimen in 1885 B, p. 561, fig. 128; they are of a greenish colour. Ed.]

DEW, AND ITS ACTION ON PLANTS.—In looking through a work upon Physics that was published in the latter part of last year, I noticed that some experiments were described that had been carried out upon this very subject by a Mr. J. Aitken, and the conclusions which that gentleman arrived at were the following:—"That the greater part of true dew is formed from the vapour that rises from the heated ground and has been trapped by grass and other cold objects; and also the drops seen on grass and leaves are not dew at all, but moisture exuded from the living plant. These drops are only found at the extremities of leaf veins, i.e., at the points where the veins of the leaves cut the outer edges. The true dew is distributed all over the blade as a moist film." I may here state that the results obtained from these experiments are perfectly in accord with those of Professor Wollny. With regard to its beneficial action on plants, I should like to say a few words upon Mr. Henslow's experiments. If these experiments were carried out, as I presume they were, that the leaves were taken from their respective trees or plants, and placed for a certain period in direct sun, they then lose a portion of the water they contain, and are more or less flaccid; they are then weighed. After this process they are placed on the lawn for a period of twelve hours and then weighed again; and according to these experiments the leaves regained their normal conditions, and also show a gain. These experiments do not furnish sufficient evidence to justify Mr. Henslow in coming to the conclusion that these leaves gained their normal turgidity from moisture that has been absorbed through their epidermal surfaces; but, on the other hand, I contend that, as there was a heavy dew on at the time, it is very probable that the moisture was absorbed by the stalk of the leaf, and not through the cuticularised surfaces of many of the leaves, as it is a well-known fact that these surfaces are well-nigh impervious to water; and further, the amount of moisture that would be required to enable any of the leaves (in the list he supplies) to regain their normal condition, would be very small indeed. It is scarcely necessary to add, that when experiments of this kind are to be made, the utmost care is necessary, for if some of the minor details are overlooked or neglected, we cannot expect to arrive at true and correct results. *T. H.*

PEAS.—These have been good with us this season, perhaps, excepting the very early varieties, which came up rather thin. Our earliest crop was Chelsea Gem, following which was Cannell's English Wonder, a most valuable Pea, either for pot culture, early or mid-season work, it having pods of larger size than any other early Pea, and a wonderful cropper. Sutton's Bountiful is another very fine early Pea, bearing large well-filled pods of most delicious flavour. I have had two varieties of mid-season Peas from Messrs. Sutton of excellent qualities, very dwarf, and of great stamina, and profuse bearers of large pods. I find these Peas of dwarf stature most useful, as other crops growing between have greater advantage of sun and air, which is so essential to proper development; and I find all Peas do much better when several yards apart and other crops grown between. This season has also proved the advantages gained by growing in trenches, as with us it has been very dry, and consequently much water has been required. William I., Telephone, Duke of Albany, Duchess, Triumph, Jubilee, Autocrat, Sir F. A. Milbank, Matchless Marrow, Sturdy, have all been satisfactory, and at the present time we have as good Peas as one could wish to see. I consider Sturdy and Ne Plus Ultra the two best late varieties, which may be had even in October if the weather is in any ways kind. *W. A. Cook.*

THE HORSE-PLUM.—In reply to the inquiry of "Prunus" p. 193, there is a Plum called by that name, and I well remember my grandfather having several large trees that bore annually fine crops of fruits of the richest purple, and equally good for dessert or kitchen use. I cannot say if it is an American or English variety; I have at various times consulted works on horticulture, but could never find it described. I concluded the above name was only used locally. *W. J. Grace, Bickton, Fordingbridge.*

OBJECT LESSONS IN HORTICULTURE.—In reference to what was said by the *Agricultural Economist* with respect to the more practical employment of flower shows as object lessons, with oral explanation and instruction, I should like just to sketch a real picture of a scene at one of those flower shows

in Surrey. The district is essentially rural, and thinly populated. The scene a beautiful private garden. In the background a handsome house, and beside it a broad terrace. Grouped on this terrace are numerous visitors of the upper class, in the foreground a large body of the general public, seated and standing, among more remote beautiful lawns, trees shrubs, flowers, and the declining sun glinting through the tops of the trees, throws charming shadows. In the distance are the various tents containing the exhibits, their white coverings toned by frequent exposure, finding in the mass of woodland just beyond an admirable setting. Altogether it is a picture of loveliness, peacefulness, happiness, and contentment. The sound of a strong trained voice is now heard, and all eyes are turned to the terrace, where, behind the low balustrade, stands one of the horticultural experts of the County Council, sent first to judge the exhibits, then to talk to those interested in them as to their merits and demerits. On the top of the balustrade are selected examples, especially of vegetables, and after dilating upon the plant and flower exhibits sent by all classes, the expert refers to and utilises these selected exhibits as object lessons, showing what is good, what is otherwise, and thus imparting knowledge under the most advantageous conditions. The talk lasts for forty to forty-five minutes, and everybody is pleased and benefited. Sometimes the scene is a good



FIG. 38.—DIMEROUS FLOWER OF CATTLEYA. (SEE P. 218.)

private garden, where the public are invited to attend and hear an expert's opinions on the cropping and culture shown, as also to receive lessons in pruning or such other work as may be found desirable. That is better employment of such opportunities than in discussing market returns. *A. D.*

THE WHITE WATSONIA.—The paragraph respecting this lovely Cape plant, on p. 305 of the *Gardeners' Chronicle* for March 5, is obviously derived from a local correspondent, although its origin is not stated. I do not suppose that the present incumbent of the Port Elizabeth Park had any intention of misleading the readers of his note, but his want of information about the plant's origin, and the unlucky statement that "it was raised here," may lead to the inference that it is a seedling "raised" at Port Elizabeth. The plant was first found by Mr. Robert Templeman, formerly assistant at the Capetown Botanic Gardens, and within a day's journey from the city. It will not do to be too specific as to the exact locality, now that there are so many reckless amateurs scalping the mountains every holiday. The finder grew the corms among his stock for a season or two, and ultimately sent a few to the late Mr. John Wilson, then superintendent of the St. George's Park at Port Elizabeth. I cannot fix the date precisely, but this is something towards it. When Lord Brassey was round at Algoa Bay in the "Sunbeam," he saw and greatly admired Wilson's little clump of Watsonias, regretting that they were not for sale,

but destined as stock for reproduction. However, Wilson gave him Templeman's address in Cape Town, as the original finder, and when the "Sunbeam" came round to Table Bay, her owner bought a potful of the white Watsonia from Templeman for a sovereign. So you see it is a Cape-Western species, and not at all suited to be called the Port Elizabeth Pearl, the Pride of Algoa Bay, or St. George's Beauty. St. George will have to find a flower for himself, poor fellow, and keep better count of those which come to him by presentation from the Cape Peninsula. *P. MacOwan, Capetown.*

CAMPANULA PYRAMIDALIS AND PYRAMIDALIS COMPACTA.—The mention of this on p. 190 reminds me to ask what has become of a Campanula which was cultivated about fifteen years ago, and answered to the description given of this novelty? Seed was collected by Mr. Charles Lacaita near Tarento, in Southern Italy, and distributed under the synonyms of Campanula Rosani (Tenore), C. Tenorei (Muret), and C. versicolor (Gussone). I raised many plants, some of which lived two or three years, and flowered exactly in the form of a dwarf and compact C. pyramidalis. It proved too tender for my bad Cheshire climate, and I have lost sight of it, but I dare say it survives in some gardens. *C. W. Dod.*

SHORTIA GALACIFOLIA.—On p. 189 I observe a note, saying that this plant presents "few, if any difficulties to the cultivator." I can only say that, though I have had some experience in the cultivation of hardy plants, I have never been able to make this thrive. I know that plenty of gardeners will express great surprise, as they did when I announced my want of success with the common Christmas Rose, and with Gentianella. One will advise me to try a raised mound, another a depression in the soil, and so on; but all these plants will thrive anywhere, if atmospheric conditions are favourable; but if not, no treatment will overcome the difficulty. I find atmosphere a far more important factor in the welfare of hardy plants than either soil or aspect. *C. Wolley Dod, Edge Hall, Malpas.*

ANEMONE JAPONICA.—I send a crimped leaf from a plant of Anemone japonica. Five years ago three or four tufts appeared as a sport along one stolon from the ordinary form. I moved them, but only one lived, and produces all its leaves of this character year after year. It belongs to the pink-flowered form known in nurseries as "var. elegans," but has quite lost all stoloniferous habit, and I dare not try to divide it. The top-heaviness of the leaves, which makes them tumble about on the soil, would prevent its being ornamental, even if I could make a stock from it. The soil of the border in which it came is stony and poor, compared with most of my borders. *C. Wolley Dod.* [The leaves were extraordinarily lacinate, and crimped like Parsley or some forms of Scolopendrium. *Ed.*]

HYBRID CURRANTS.—I herewith beg to enclose a branch of black Currant crossed and produced by the red Currant, and (scentsless) the fruit being a jet black tint and very shy bearer. I also send you a red Currant nearly black. This was crossed with the black Hamburg Grape, which has not improved its flavour. Again, a white Currant crossed with the Muscat of Alexandria Grape, which is equally unpleasant to the palate, but readily taken by the birds. I may just say that the flowering of these hybrids in the spring is very interesting in a botanical point. *P. Fry, Addington, Kent.* [The red Currants were certainly much darker than usual, but we could see no other trace of hybridisation. Our correspondent must excuse us if we maintain an open mind on the subject. *Ed.*]

ASSESSMENT ENQUIRY.—If your correspondent "G. D." is a *bonâ fide* florist or nurseryman, the greenhouse forms part of his stock-in-trade, and being personal property cannot be assessed at all (*vide* 3 & 4 Vict. c. 89, clause II., being repealed by a later Act). *James Young.*

FRUIT CROPS.—The fruit crop in Banffshire is only a moderate one, although Gooseberries are a heavy crop. Strawberries were only fair. Apples and Pears, with a few exceptions, are a complete failure, especially the latter. The early part of the season was very wet, and when fine weather was experienced, it was only to be accompanied by frosts at night. In some of the low-lying places, the trees present a very scorched appearance. *Robert G. Marshall, Banff.*

FRUIT CROPS.—Sorry I am late in sending report. Cherries good; Apples under; Pears good; Plums, Damsons, Peaches, and Apricots abundant. Small fruits all round are excellent; Nuts good. Vegetables are good, and Potatoes excellent and free from disease. *T. H. Rabone, Alton Towers, Staffordshire.*

—Taken as a whole this season, the fruit crops may be put down as an average crop. Currants, red, black, and white, are most plentiful, but have been interfered with by the caterpillar. Gooseberries also have been a good crop. Strawberries a good crop, and where plants were liberally watered fruit has been extra good. Raspberries have been an excellent crop, and fruit good. Apples are a medium crop upon standards; espaliers are heavy, especially early varieties. Pears are a medium crop, frost in the middle of June destroying good prospects. Jargonelle good, Beurré Giffard bad, Williams on west wall good, south wall bad; Louise Bonne average, Marie Louise average, Doyenné du Comice under average; Pitmaston Duchess, Catillac, and sundry other mid-season and late varieties, average. Plums, all varieties, a good crop; Damsons under average; Quinces a fair crop; Nuts a better crop than for four years; Medlars a shy crop; Apricots bad; Peaches and Nectarines average crop. Potatoes are grand, turning out very liberally, and if the disease can be kept at bay we shall have a very heavy crop. *W. A. Cook, Compton Bassett, Wilts.*

—In reference to the fruit crops in North Dorset, I might truthfully say I have never known them worse. We have a few Apples, and a sprinkling of Morello Cherries. Raspberries are almost a failure. Currants and Gooseberries fairly plentiful. Strawberries were very good, but a short season. Of these we only grow three varieties, viz., King of the Earlies, President, and Oxonian. Our mode of treatment is to make new plantations every two or three years. The Early variety I make a new plantation of every year. I find it gives us earlier and finer fruit. My practice for the last thirty years has been to lay the runners in small pieces of turf. Those who have not yet tried this plan will do well to do so. *W. G. Pragnell, Sherborne Castle Gardens.*

SCOTLAND.

LAW NOTES.

MESSRS. JAMES COCKER & SONS v. ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

An action, which has caused not a little sensation in horticultural circles in the North of Scotland, came before Sheriff Robertson, in the Aberdeen Sheriff's Court, on Monday, the 15th inst. Messrs. Cocker & Son, nurserymen and seedmen, Aberdeen, sought to have the Acting Directors of the Royal Horticultural Society of Aberdeen compelled to receive certain exhibits belonging to pursuers which defenders had declined to enter for the forthcoming annual show of the Society. Mr. Cocker, senior, was formerly a director of the Society, but he withdrew consequent on the resolution to hold a grand military tournament in connection with the show. The defenders contended that as Messrs. Cocker's usual yearly donation was withheld when asked for, and was not paid before August 1, pursuers were no longer members of the Society. For the pursuers it was held that the condition as to payment of subscriptions before August 1 applied only to new members, and that in the case of members other than the Messrs. Cocker, subscriptions had been readily enough accepted after August 1. The Sheriff reserved his decision until Tuesday afternoon, when he issued the following interlocutor:—"Aberdeen, August 15, 1892.—The sheriff-substitute, having heard parties' procurators, and considered the case, dismisses the action and decerns. Finds the defenders entitled to expenses, allows them to lodge an account thereof, and remits the same, when lodged, to the auditor of the court to tax and report. (Signed) Duncan Robertson. The sheriff, in a long note, remarked that whether defenders are acting wisely for the interests of their society, or altogether fairly in view of their past practice as to subscriptions, is another matter altogether, and one with which, it seemed to him,

he had nothing to do. The rule is explicit, and the fact that apparently in some instances in the past the officials have not strictly enforced it would not justify him in holding that they had thereby waived their right to enforce the rule, if, in their discretion, they think it fit to do so now. *W. Kelly, Aberdeen.*

ROYAL SCOTTISH ARBORICULTURAL ASSOCIATION. (From Our Special Correspondent.)

On Wednesday, August 10, the departure of the members of the Royal Scottish Arboricultural Association was made, under most favourable circumstances, for a three days' outing to the eastern and central woodlands of Fife and South Perthshire. The "Foresters" were most kindly received, at Stravithie near St. Andrew's, by Dr. Cleghorn (an ex-President of the Association). The whole party, which was considerably augmented on the way, was entertained at breakfast by the veteran Doctor. Mr. J. Methven (Methven & Sons, Edinburgh), one of the Vice-Presidents, thanked Dr. Cleghorn for his hospitality, and applied to him the not improper designation of "Grand Old Forester," as to one who had done so much abroad and at home to promote the cause they had at heart, presenting the entertainer at the same time with a walking-stick, well crooked to pull down branches, and from which a saw opened to cut offenders off. Hearty cheers were given to Dr. Cleghorn, who then led the party to view the most picturesque portions of the grounds and gardens, where there are many Beeches, which thrive so well in the district; and on the top of the sloping grass declivities are represented choice collections of the more recently-introduced Coniferae. In a favourable position was planted by Mr. Milne (Dickson & Sons) a specimen of the Golden Cupressus Lawsoniana, commemorative of the visit. Some fine Cupressus, planted in 1866, which are about 30 feet high, and as much round the tips of lower branches were inspected. A large spreading Larch, loaded with cones, was close to this spot; Wellingtonias and fine Ashes; an Araucaria imbricata of 40 feet was in thriving condition.

Leaving Stravithie, after a lengthened railway journey *via* Thornton to Mar Kinch, the party arrived at the beautiful park of Balbirnie, to which they were invited by Colonel Balfour. The party was met by the veteran Colonel and Mr. Edward Balfour in the most cordial manner. The party passed by the front of the stately mansion, admiring as they went the beautifully-clothed flower garden, and inspected a Beech avenue, in which are some remarkable specimens of this tree, which has found such a congenial home at Balbirnie. The Den was reached, in which are yet some fine trees; but this charming retreat was severely thinned by the terrible winds which were experienced on the night in which the Tay bridge was blown down. Along the banks of the burn in this den, Boxes grow freely, and in many parts the ground is densely covered by Periwinkle. A return by a drive was made to a spacious tent, in which was served an excellent luncheon, partaken of by over ninety gentlemen. Mr. E. Balfour (younger), presided.

Two hours were then most profitably spent in the park inspecting trees and shrubs of great size and beauty. Many fine Beeches are to be seen on the high grounds, as well as singly in the park; also Oaks and Larches. A tall stem of an Ash, which had been grafted with a Weeping Ash, is an object of much interest from its pendulous branches having such space to droop before the ground can be reached. The planting of this park evidently has been done by those who have had a clear knowledge of landscape gardening. The whole surface being undulating—the valleys have been kept clear—and beautiful views may be had in all directions. The drives, four in number, all leading to points of direct communication with the main roads outside the park. They run with sweeping curves, north, south, east, and west, passing by interesting trees or shrubs which have never been crowded, and exhibit all the best characteristics of a well-appointed English park. Some fine purple Beeches are telling objects, and the general keep of roads and grounds reflect much credit on the head gardener (Mr. Henderson). Con-

siderable time was spent round the hills and dells measuring and admiring trees, where some fine Conifers are growing of the newer species. A Beech 15 feet 10 inches in circumference was measured 5 feet above ground. Round the roots this tree measured 50 feet. A Larch, over 100 feet high, girthed 9 feet 4 inches. A Scots Fir, 90 feet high, girthed 9 feet. Some beautiful Albert Firs were passed. One, over 45 feet high, measured (5 feet from the ground) 3 feet 1½ inch in girth. A fine row of Araucarias was passed, and Abies grandis growing vigorously—a grand specimen of Rhododendron catawbiense was measured round its branches (which rise from one stem, afterwards parting into two), 50 feet, and is 20 feet in height. The policies throughout (though only a limited portion could be visited by the party), is managed with consummate care—nothing overdone and nothing neglected, the walks through shrubberies, under trees, and across green sward are said to be (by one who measured them) over 13 miles in length. There was not time left to visit the commercial timber on the estate, though views of it could be had from some of the heights, forming a beautiful landscape. A hurried run to the gardens was made, which are in admirable condition. Herbaceous plants are numerous, and in vigorous growth. Roses are a great feature, and in great numbers. The glass, which is represented by a range for forcing of fruits, along the northern wall, facing the south, and stretches from one end to the other; other structures are at the back for plants, all of which are well filled with healthy and useful species. The finest glass structures are at the south end of the garden, where small structures have been removed, and a fine length of span-roofed glass erected, in which are well-grown Palms, foliaged plants in general, and Orchids. Among other good things were a pair of Cattleya gigas, in flower; Dendrobium nobile, in fine form; Allamanda, Gloriosa superba, were among other creepers ornamenting the roof; but a few minutes only could be spent in these gardens, where Mr. Henderson's skill is everywhere favourably indicated in all departments. The whole party was photographed, and then a stampede had to be made to the conveyances *en route* for Falkland, after ringing cheers for the "House of Balfour." The party departed with sunny memories of a delightful visit to a most beautiful domain.

(To be continued.)

SOCIETIES.

WILTS HORTICULTURAL.

AUGUST 10.—The Wilts Horticultural Society held its annual exhibition in the charming and well-kept grounds of the Lord Bishop of the Diocese which surround the Episcopal Palace, Salisbury, on the above date. The weather was favourable, and there was a good number of visitors. The space at our command will only admit of the most notable exhibits being mentioned. They are as follows:—

Plants.—Twelve stove and greenhouse plants, distinct, consisting of six foliage and six in flower, were staged by Mr. James Cypher, Cheltenham; Mr. Wills, Winchester Road, Shirley, Southampton; and Mr. Curry, Wilton Road, Salisbury. The prizes (£15, £10, and £5) were awarded in the above order. Mr. Cypher's collection included large and well-coloured Crotons, finely-flowered Allamandas and Ericas, a grand specimen of Latania borbonica, some 14 feet in diameter; and a fine plant of Anthurium Scherzerianum, having about thirty large and finely formed spathes.

Mr. T. Wilkins, gr. to Lady Theodora Guest, Inwood House, Henstridge, was a good 1st in the class for nine stove and greenhouse plants (five foliage and four flowering), staging among others, fine examples of Allamandas nobilis and Hendersonii, Cycas revoluta, and Alocasia Thibautiana; Mr. Wills being 2nd, and Mr. Peel, gr. to Miss Todd, Sidford Lodge, Shirley, was 3rd. Mr. Wilkins was again to the front with six Exotic Ferns, showing fine specimens of Adiantum Farleyense, A. cuneatum, Cyathea medullaris, Davallia Mooreana, Thamnopteris nidus avis, and Microlepia hirta cristata; Mr. Peel was

2nd, and Mr. Evans, gr. to Lady Ashburton, Melchet Court, Romsey, 3rd, both showing well. Mr. Roby, gr. to Captain Greenwood, Harnham Cliff, Salisbury, was 1st in both classes for Begonias, defeating Messrs. Wilkins and Wills, who also staged good exhibits.

Groups of miscellaneous plants, arranged for effect in semi-circles, ranging from 12 to 8 feet in diameter, filled the centre of one large tent, and viewed either separately or collectively, made a fine show. Mr. Wilkins secured premier position in the two principal classes with light and very effectively-arranged groups, having a nice Palm, with arching fronds, occupying a central position in the background, and "dot" plants of *Tuberose*, *Aralias*, *Cocos Weddeliana*, *Cattleyas*, *Oncidium*, *Celosia plumosa aurea*, *Dactylis glomerata variegata*, and *Bridal Wreath* (*Francoa ramosa*), the whole being set in a ground-work of Maidenhair Fern, and edged with *Isolepis gracilis*, and the prettily-marked *Caladium argyrites*. Mr. Carr, gr. to W. E. Gilbert, Esq., Oak Lodge, Bishopstoke, were 2nd and 3rd respectively in one class; and Messrs. Wills & Roby occupied like positions in the other, all with good arrangements. Mr. Bath, gr. to Colonel Pepper, Milford Hill, Salisbury, and Mr. Hinxman, The Island, Salisbury, were each 1st in two other classes for good groups.

Fruit.—In view of the approaching fruit show at Earl's Court, one local gardener was, for the first time, during the last sixteen or seventeen years a non-competitor in the fruit classes at this show, nevertheless, there was a good all-round display of choice fruit. There were four good collections of eight kinds (Pine, excluded), staged. Mr. Evans securing first position with *Gros Maroc* and *Muscato* of *Alexandria* Grapes, the latter good in bunch and berry, but not quite ripe, grand Brunswick Figs, Prince of Wales Peach, Elruge Nectarine, Moor Park Apricots, Melon, and Plums. Mr. M. McFarlane, gr. to William Baring, Esq., Norman Court, Salisbury, was 2nd, and Mr. Inglesfield, gr. to Sir John Kelk, Bart., Tedworth House, Marlborough, was 3rd, both staging good exhibits. Mr. Inglesfield had the best dish of Peaches, showing extra fine Walburton Admirable. Mr. W. G. Carr, gr. to W. R. Neave, Esq., Fordingbridge, had the best dish of Nectarines in Pine-apple; and Mr. Wilkins had the best flavoured Melon out of eight staged in Lockinge Hero. Mr. Budd had the best Apricots, showing large, clean, even fruits of Moor Park; and Mr. Smith, Palace Gardens, was 1st for Plums.

Grapes.—Mr. Davidson, gr. to Lord Wolverton, Iwerne House, Shaftesbury, obtained 1st prize for both Black Hamburg and Muscat of *Alexandria*, staging good-sized, well-coloured bunches of each; Mr. Charles Warden, Clarendon Park, Salisbury, securing 1st honours in the "any other" black and "any other" white Grape classes, with fine examples of Madresfield Court and Buckland Sweetwater, the bunches in each case being large and fine in berry and finish.

Apples.—These were well shown. Mr. Wilkins secured 1st position for three dishes of dessert varieties, Beauty of Bath, White Astrachan, and Red Astrachan; Mr. Smith being 1st for a like number of culinary varieties, staging large, clean, even fruits of the Queen, Lord Suffield, and Ecklinville Seedling; Dr. W. D. Wilkes, the Canal, Salisbury, securing premier award for a like number of dishes in another class with remarkably fine fruits of Catshead Codlin, Lord Suffield, and Dutch Codlin.

Vegetables.—Three collections of twelve kinds of vegetables were staged by Messrs. Inglesfield, Wilkins, and R. West, Northlands, Salisbury, and the awards were made to the exhibitors in the above order. The Onions, Autumn Giant Cauliflowers, Sutton's Perfection Tomatos, Satisfaction Potatos, Duke of Albany and Prodigy Peas, and Runner Beans being exceptionally good.

The cut flower classes were well represented, Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester; Dr. D. Seaton, Bitterne; and Mr. Browning, gr. to the Rev. Canon Sir Talbot Baker, Bart., Blandford, being the most successful in the Rose and Dahlia classes; Mr. Budd being successful with eighteen bunches of hothouse flowers, distinct; and Mr. J. R. Chard, Stoke Newington, London, had the best bridal and ball-room bouquets, composed of choice flowers.

Non-competing exhibits from Messrs. Keynes, Williams & Co. covered large lengths of staging, consisting of floral gems in the way of Roses, Gladioli, Carnations, and novel table decorations in the form of arches, admirably dressed with common garden flowers and grasses, high double arches clothed with green moss, and then thickly studded with Roses

perfect in form and colour; new Cactus Dahlias, including Marchioness of Bath, soft crimson-lake, delicate pink towards edge of petals; Lady Skelmersdale, chrome yellow—a striking variety; Countess of Radnor, a beautifully-shaded rose-cerise; and Countess of Gosford, amber shaded soft vermillion—one of the most striking varieties yet raised.

Messrs. Robert Veitch & Son, of Exeter, also contributed large and varied assortments of cut flowers, including a grand lot of new Carnations and alpine plants in pots, which together made a very attractive and interesting display.

Mr. Davis, Yeovil, exhibited grand stands of the double and single flowered varieties of the Begonia. Mr. Pritchard, Riverslea Nursery, Christchurch, and B. Ladkams, Shirley Nursery, Southampton, also contributed numerous kinds and varieties of herbaceous flowers, which went to show what a fine and varied floral display can be obtained from hardy flowers—flowers which come within the reach of rich and poor alike.

SUTTON BRIDGE HORTICULTURAL.

AUGUST 10.—The annual exhibition was held on this date, in the picturesque grounds of Mr. M. R. Thorold, President of the Society. Favoured with lovely weather, the show this year was held under most favourable circumstances. The general merit of the exhibits was extremely high, and the competition so keen that the judges had much difficulty in awarding the prizes in many of the classes.

The Ferns shown by Mr. Jas. Rather and the Rev. W. H. James, Fleet Rectory, created much interest; and the collections of ornamental plants shown by the same exhibitor, were of great merit.

Fruit and vegetables were well represented, and the show of Potatos was as good as could be got together anywhere. Special prizes were offered by Messrs. Webb & Son, Stourbridge; Daniells Bros., Norwich; Chas. Sharpe & Co., Sleaford; Messrs. Sutton & Sons, Reading; Jas. Carter & Co., High Holborn; by Mr. J. R. Clarke, and Mr. C. Goss.

TAUNTON DEANE HORTICULTURAL.

AUGUST 11.—The twenty-fifth exhibition of this Society proved one of the best ever held, and the weather being very fine, and the attendance enormous, the financial results were very gratifying. The tents, five in number, two of them of great size, were pitched in Vivary Park, which is immediately contiguous to the town, and therefore easy of access. It is undoubtedly one of the finest exhibitions held in the West of England, and attracts exhibitors from many parts. As the competition is always good, it is matter for regret that 3rd prizes are offered in so few classes. The Society having greatly improved its financial position since 1890, the committee may perhaps see their way next year to restore the 3rd prizes to the schedule.

Stove and greenhouse plants are always a fine feature, and in the open class Mr. James Cypher, Cheltenham, held the premier position once more with twelve specimens in flower. He had *Allamandas nobilis* and *Hendersoni*, *Ericas* Thompsoni, *Austiniana*, *McNabiana*, and *Aitoniana*, *Franciscea calycina* major, a fine piece; *Anthurium Scherzerianum*, *Bougainvillea glabra*, *Clerodendron Balfourianum*, *Ixora Pilgrimi*, and *Phenocoma prolifera* Barnesi. 2nd, Mr. J. F. Mould, nurseryman, Pewsey, with excellent specimens, though a few of them were getting a little stale; he had *Statice Gilberti*, very fine—a striking dark variety, said to have been raised on the south coast; *Tremandra verticillata*, large, well grown and bloomed; *Allamandas Hendersoni*, *Wardleiana*, and *nobilis*; a fine piece of *Erica tricolor* Wilsoni, &c. 3rd, Mr. W. Rowland, gr. to Mr. Brock, Exeter, with capital fresh plants.

Mr. Cypher was also 1st with six, having another fine *Phenocoma*, *Allamanda nobilis*, *Erica Austiniana* and *oblate purpurea*, *Statice profusa*, and *Ixora Williamsii*—a very good collection; Mr. Rowland was 2nd, and Mr. Mould 3rd.

In the amateurs' division for twelve plants, not necessarily in flower, Mr. Rowland was 1st, with very good examples of *Ixora Dixiana*, *Dipladenia amabilis*, *Croton Andreanus*, *Cycas revoluta*, *Latania borbonica*, &c.

With six plants, Mr. S. Ridley, gr. to W. E. Hall, Esq., Yeovil, was 1st, with a seedling *Bougainvillea* of the type of *glabra*, but smaller in the flowers and much deeper in colour, extremely free flowering;

Kalosanthes coccinea, *Clerodendron Balfourianum*, &c. 2nd, Mr. Rowland.

Mr. J. Currey, Salisbury, had the best four plants; and M. W. Peel, gr. to Miss Todd, Shirley, 2nd.

Tuberous Begonias were a very fine feature indeed, and the progress made with these as exhibition plants at Taunton during the last few years is something remarkable. The best eight in the open class came from W. Herbert Fowler, Esq., Claremont, Taunton, who is a great lover and a most successful cultivator of these plants; Mr. H. Godding, nurseryman, Taunton, was 2nd. There were several competitors, and all the plants were good. In the amateurs' class for six singles, there was a good competition also. Mr. Cavill, gr. to H. T. Manley, Esq., Bishops Hall, was 1st; and Mr. S. Tottle, Taunton, 2nd. With six doubles, Mr. G. Chapman, gr. to C. H. Samson, Esq., Taunton, was 1st. Zonal Pelargoniums, both single and double, were very good, the 1st prizes in each class being taken by Mr. C. Way, gr. to G. E. Colthurst, Esq., Taunton; Mr. C. Totterdell, gr. to A. J. Spiller, Esq., Taunton, was 2nd also in both classes. *Fuchsias* were fairly good, and *Cockscombs* decidedly so.

Orchids were represented only by four good specimens from Mr. J. Cypher. The best newly-introduced foliage plant was *Croton Madame D'Haene*, distinct in habit and brilliant in colour, from Mr. Cypher. The best newly-introduced flowering plant was *Dendrobium Phalaenopsis Schroderii*, a fine form of it, from Mr. J. Cypher; and Mr. Rowland was 2nd with a delicately-tinted seedling *Dipladenia*, named Miss Sophie Brocke.

In the amateurs' division, Japan Lilies consisting of finely grown examples of *L. speciosum* and *L. auratum* were shown; also good zonal Pelargoniums, *Gloxinias*, *Achimenes*, *Petunias*, *Balsams*, &c.

Foliage plants were a commanding feature. In the open division, Mr. Cypher was 1st; Mr. J. Currey was 2nd; and Mr. Mould, 3rd. In the amateurs' division, Mr. Rowland was 1st; Mr. J. Currey taking the 2nd prize. Mr. Rowland also had the best eight exotic Ferns; 2nd, Mr. J. Lloyd, gr. to V. Stuckey, Esq., Langport.

Hardy Ferns and exotic mosses were admirably shown by Mr. R. Huxtable, gr. to F. W. Newton, Esq., Taunton.

Groups arranged for effect make a good feature also, but the narrowness of the tents necessitates a kind of kidney shape, which prevents the plants from being seen to the best advantage. In the open class, Mr. Rowland was 1st, and Mr. Currey 2nd, both with very good arrangements. In the amateurs' class, Mr. Peel was 1st, and Mr. Rowland 2nd.

Cut flowers were represented by Roses, Messrs. Perkins & Sons, Coventry, taking the 1st prizes in the open classes, with thirty-six and twenty-four varieties; Dr. Budd, of Bath, being 2nd in both cases.

In the amateurs' classes, Dr. Budd won in both classes for hybrid perpetuals. With twelve Teas, Mr. W. H. Fowler took the 1st prize with some very fine flowers.

Dahlias fell behind their usual quality at this show, owing to the late season. Gladioli were superb. Mr. W. H. Fowler took all the 1st prizes with very fine spikes. Asters were scarcely up to the mark.

The 1st prize for a stand of twelve varieties of stove and greenhouse cut flowers went to Mr. W. Iggulden, gr. to the Earl of Cork, Marston, Frome. Bunches of hardy herbaceous perennials, &c., were finely shown by Mr. A. A. Walters, Bath, and Mr. G. Garraway.

A remarkably fine lot of fruit was staged, Mr. Iggulden was placed 1st with ten dishes, having Muscat of *Alexandria* and Madresfield Court Grapes, Sea Eagle Peaches, Stanwick Elruge Nectarine, Hemscker Apricots, Oullin's Greengage Plum, brown Turkey Figs, Pine, Cherries, &c.; 2nd, Mr. J. Lloyd, with a remarkably good collection; and Mr. J. Brutton, Yeovil, was 3rd. Mr. Iggulden was also 1st with four dishes, having black Hamburg Grapes, Sea Eagle Peaches, Downton Nectarine, and Melon; 2nd, Mr. J. Lloyd. Mr. F. Crossman, gr. to Earl Poulett, Hurton, St. George, was 1st with black Hamburg Grapes, very fine in berry and bunch; Mr. Iggulden was 2nd. In the class for any other blacks, Mr. C. Warden, gr. to W. C. Watson, Esq., Salisbury, was 1st with excellent Madresfield Court, and Mr. Iggulden 2nd with the same. Mr. W. Connelley, gr. to J. R. C. Talbot, Esq., Lyme Regis, was 1st with very fine white Muscats, and Mr. Iggulden 2nd. Mr. C. Warden had the best three bunches of any other white, having excellent Buckland Sweetwater; Mr. G. F. Luttrell, Dunster Castle,

was 2nd. Melons were numerous, Hero of Lockinge being the best. The best Peaches were Dymond and Bellegarde. Nectarines, Pine-apple and Elruge. Apricots, Moor Park; Pears, Jargonelle, very fine; light Plums, Green Gage, dark, Prince of Wales (?), and Duke of Wellington; dessert Apples, Beauty of Bath, and Astrachan; cooking Apples, the Queen, and Lord Suffield. Bush fruits were very good.

Vegetables were numerous and wonderfully fine throughout. Mr. G. Garraway, Bath, had the best collection of ten dishes; Mr. W. Perryman, gr. to W. Ricks, Esq., Bridgwater, was 2nd. Messrs. Sutton & Sons' special prizes for six dishes were taken by Messrs. J. Brutton and W. E. Hall; Messrs. Carter & Co.'s by Major Birton and Mr. W. Perryman; Messrs. Webb & Sons' by Messrs. G. Garraway and H. F. Manley. Major Birton had the best six dishes of Potatoes, staging remarkably fine examples of Prizetaker, Windsor Castle, Reading Russet, Reading Giant, The Dean, and Cosmopolitan; Mr. W. M. Bryant was 2nd with a very fine collection also. All other vegetables were very good. The cottagers' tent made a show in itself, and everything was admirable.

Table Decorations filled a tent, and Mr. J. R. Chard, Stoke Newington, took the 1st prize with a remarkably elegant arrangement of the arcadian design. In the classes for vases, bouquets, baskets, sprays, &c., Messrs. Perkins & Sons, Chard, and Messrs. M. Jones, Taunton, were the principal prize winners.

Miscellaneous collections included a remarkably fine collection of double and single Begonias (cut) from Mr. B. R. Davis, nurseryman, Yeovil; a collection of very fine spikes of Gladioli and hardy flowers from Messrs. Kelway and Son, Langport; a collection of plants, cut flowers, &c., making an extremely valuable feature, from Messrs. R. J. Veitch & Son, Exeter; and hardy cut flowers, &c., from Messrs. Jarman & Co., seedsmen, Chard.

Certificates of Merit were awarded to Messrs. Kelway & Son, for Gladiolus Orme, Sir A. A. Elton, and Sir Hugo; and to W. H. Fowler, Esq., for Madame Aubert, a charming light variety.

THE PAST WEEK.

The following summary record of the weather for the week ending August 13, is furnished from the Meteorological Office:—

"The weather during the earlier part of the period was generally cloudy, cold, and dull, with heavy falls of rain—especially in the west and north; as the week progressed, however, it became fine and dry over England, although it still continued unsettled, with frequent rain, in most parts of Ireland and Scotland. By the end of the period disturbed conditions again extended to the English districts, and rain occurred very generally, accompanied in many places by thunder and lightning.

"The temperature just equalled the mean in the Channel Islands, but in all other districts it was low. The highest of the maxima were recorded as a rule, on the 12th, but occurred at some few stations on the 8th. They ranged from 78° in 'England, E.' and the 'Midland Counties,' to 69° in 'Ireland, N.,' 68° in 'Scotland, N.,' and 66° in 'Scotland, W.' The absolute minima, which were registered on the 11th, were exceedingly low for the time of year. In 'Scotland, E.' the thermometer fell to 33°; in 'Scotland, W.' and 'England, N.W.' to 34°; and in 'England, N.E.' and the 'Midland Counties' to 35°; in most other districts it fell to between 37° and 39°, but in the Channel Islands it did not descend below 49°. In many of the more inland stations frost was experienced on the Grass.

"The rainfall exceeded the mean in Ireland, Scotland, and the northern parts of England, but again showed a deficit in all the southern, central, and eastern parts of England, as well as in the Channel Islands. Over the south of Ireland, the west of Scotland, and the north of England the excess was very considerable.

"The bright sunshine was less than the mean in all districts, except the 'Channel Islands.' The percentage of the possible duration ranged from 23 in 'England, N.E.,' and 'Ireland, S.,' to 40 in 'England, S.,' and to 59 in the 'Channel Islands.'"

MARKETS.

COVENT GARDEN, August 18.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.]

BUSINESS steady, with prices firm. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, p. half-sieve	1 0-4 6	Melons, each	1 0-2 0
Currents, Red, ½-sieve	2 9-3 6	Peaches, per doz.	2 0-8 0
— Black, ½-sieve	4 6	Pine-apples, St. Michael	4 0-6 0
Grapes, per lb.	1 0-2 0	Plums, p. half-sieve	5 0-7 0
Lemons, per case	15 0-30 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Ficus elastica, each	1 7-6
Aspidistra, per doz.	15 0-30 0	Fuchsia, per doz.	3 0-6 0
— specimen, each	7 6-20 0	Heliotrope, per doz.	3 0-6 0
Asters, per doz.	4 0-6 0	Hydrangea, per doz.	9 0-18 0
Balsams, per doz.	3 0-6 0	Lilium Harrisii, doz.	18 0-30 0
Begonia, per doz.	8 0-12 0	Lobelia, per doz.	2 6-4 0
Campanula, per doz.	6 0-9 0	Marguerite, per doz.	6 0-12 0
Coleus, per doz.	3 0-6 0	Mignonette, doz. pots	4 0-6 0
Cyperus, per dozen	4 0-10 0	Palms, various, each	2 0-10 0
Dracena, each	1 0-5 0	— specimens, each	10 6-14 0
Ferns, various, doz.	4 0-9 0	Pelargonium, p. doz.	6 0-12 0
— per 100	8 0-12 0	— scarlet, p. doz.	2 0-4 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	2 0-4 0	Mignonette, 12 bun.	1 0-4 0
Asters, p. doz. bun.	1 6-4 0	Myosotis, or Forget-me-not, 12 bunches	1 6-4 0
— French, p. bun.	0 6-1 0	Pansies	1 0-2 0
Carnations, 12 blms.	0 9-1 6	Pelargonium, scarlet, per 12 bun.	3 0-4 0
— 12 bunches	3 0-6 0	— 12 sprays	0 6-1 0
Cornflower, 12 bun.	1 6-3 0	Poppies, 12 bunches	2 0-6 0
Eucharis, per dozen	2 6-4 0	Primula, double	4 0-6 0
Gardenia, per dozen	1 6-3 0	Pyrethrum	2 0-4 0
Gladiolus, doz. blms.	8 0-12 0	Roses, Tea, per dozen	0 9-2 0
— p. doz. spikes	1 0-2 0	— coloured, dozen	1 0-1 6
Heliotrope, per doz.	3 0-6 0	— yellow (Mare-chals), per doz.	2 0-5 0
Lilium Harrisii, doz.	2 0-4 0	— red, per dozen	1 0-2 0
— various, doz.	1 0-3 0	— outdoor, 12 bun.	2 0-6 0
Maiden Hair Fern, 12 bunches	4 0-6 0	Stephanotis, 12 sprays	1 6-3 0
Marguerite, per doz.	3 0-4 0	Stocks, doz. bunches	3 0-6 0
Orchids:—		Sunflower, doz. bun.	3 0-6 0
Cattleya, 12 blms.	4 6-8 0	Sweet Peas, doz. bun.	2 0-4 0
Odontoglossum crispum, 12 blms.	2 0-6 0	— Sultan, 12 bun.	2 0-4 0
— crispum, 12 blms.	2 0-6 0	Tuberose, 12 blms.	0 3-0 6

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes Globe, ea.	0 4-0 6	Mushrooms, punnet	2 0-...
Beans, French, lb.	2 6-3 0	Mustard and Cress,	...
Beet, red, per dozen	2 0-3 0	— punnet	0 4-...
Carrots, per bunch	0 4-0 6	Parsley per bunch	0 3-0 6
Cauliflowers, each	0 3-0 6	Shallots, per lb.	0 6-...
Cucumbers, each	0 4-0 8	Spinach, per bushel	3 6-...
Endive, per dozen	2 0-3 0	Tomatoes, per lb.	0 4-0 9
Herbs, per bunch	0 9-1 0	Turnips, per bunch	0 4-0 6
Lettuces, per doz.	1 6-2 0		

POTATOS.

MARKETS very dull, with lower prices for all samples. J. B. Thomas.

FRUITS AND VEGETABLES.

SPITALFIELDS: Aug. 16.—Quotations:—English Apples, 2s. 6d. to 5s. per bushel; Pears, 2s. to 3s.; Gooseberries, 3s. to 3s. 6d.; black Currants, 4s. 6d. to 5s. 6d.; Victoria Plums, 4s. to 5s.; Orleans do., 6s. to 7s. per half-sieve; foreign Tomatoes, 8d. to 10d. per box; Raspberries, 4d. to 8d. per 1 lb. punnet; Green Gages, 4s. to 6s. per flat; Seakale, 9d. to 1s. per punnet; Cabbages, 2s. to 3s. per tally; Spinach, 1s. to 1s. 6d.; French Beans, 1s. 6d. to 2s.; Scarlet do., 1s. 6d. to 4s.; Broad do., 1s. to 1s. 3d.; Peas, 1s. 9d. to 2s. per bushel; Cauliflowers, 1s. 6d. to 2s.; Cabbage Lettuce, 2d. to 3d.; Leeks, 2s. to 2s. 6d.; frame Cucumbers, 1s. 6d. to 2s.; natural do., 4d. to 8d. per dozen; Turnips, 1s. 6d. to 2s.; Carrots, 1s. 6d. to 3s.; Spring Onions, 3s. to 4s.; Parsley, 1s. to 2s. per dozen bunches; Cos Lettuce, 3d. to 6d. per score; Mustard and Cress, 1s. 6d. to 1s. 9d. per dozen baskets; Dutch Onions, 3s. 9d. to 4s. 3d. per bag of 110 lb.; Spanish do., 5s. to 5s. 6d. per case; Horseradish, 1s. to 1s. 1d. per bundle.

BOROUGH: Aug. 16.—Quotations:—Cabbages, 3s. to 4s. Marrows, 3s. to 4s. per tally; Scarlet Beans, 1s. 6d.; Peas, 2s. per bushel, and 3s. 6d. to 5s. per bag; Carrots, 3s. 6d. to 4s.; Turnips, 3s. to 4s.; Parsley, 2s.; English Onions, 2s. 6d. per dozen bunches; Egyptian do., 5s. 6d. to 6s. per cwt.; English Apples, 2s. 6d. per bushel.

STRATFORD: Aug. 16.—There has been a good supply of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 2s. to 5s. per tally; Cauliflowers, 1s. to 2s. per dozen; Mangels, 30s. to 32s. per ton; Onions, English, 60s. to 70s. do.; Dutch, 3s. 3d. to 3s. 9d. per bag; Oporto, 5s. 6d. to 6s. 6d. per case; Onions, 1s. 6d. to 2s. 6d. per dozen bunches; Apples, English, 4s. to 6s. per bushel; Bordeaux, 3s. to 6s. per case; Turnips, 1s. 6d. to 2s. 6d. per dozen bunches; Carrots, 2s. to 2s. 6d. do.; Cucumbers, frame, 1s. 6d. to 3s. per dozen; Dutch do., 1s. to 1s. 6d. per dozen. French Beans, 1s. to 2s. per sieve; scarlet do., 1s. 6d. to 2s. 6d. per sieve; do., 2s. 6d. to 4s. 6d. per bag; broad do., 2s. to 3s. per bag. Peas, 2s. 9d. to 4s. 6d. per bag. Plums, 3s. 6d. to 5s. per half sieve.

FARRINGTON: Aug. 18.—Quotations:—Turnips, 2s. per dozen bunches; English Onions, 4s. to 5s. per cwt.; Plums, Orleans, 7s. per half bushel; do., white Gisbourns, 3s. do.; Orleans, 7s. do.; Apples, cooking, 4s. per bushel; Pears, Duchess, 3s. per box of 70; Tomatoes, foreign, 2s. 6d. per box of 18 lb.

NOTICES TO CORRESPONDENTS.

** PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

BEECH: Hemwick. We should suspect that drought at the roots is the cause of the mischief. Perhaps there is an old-forgotten drain beneath the surface.

BOTANICAL GARDEN: H. C. Swanley. Write to the Secretary of the Royal Botanical Society, Regent's Park.

CARNATIONS: J. P. Evidently a good strain, worth growing on.

ERICA WILMOREI X: Correspondent. This was raised in the garden of John Wilmore, Esq., by his gardener Mr. John Williams, and is figured in Knowles and Westcott's Floral Cabinet, ii., 1838, t. 73. As a hybrid it should have the X attached, or if you prefer it, the word hybrid. Strictly the name, as it is only a complimentary designation, should have been Wilmoreana X. It would have been better still to have called it E. Williamsi X, as Williams was the actual raiser.

GLOXINIAS: S. G. Your specimens have been carefully examined, but no trace of fungus has been found. We conclude, therefore, as has happened in other establishments, there has been some faulty management, probably over-watering, so that water has lodged in the crown and rotted the leaves.

GRAPES: Packer. All the packing in the world is useless, unless you can guarantee proper treatment on the journey, which is rarely accorded to light packages on board ship. Your usual packing

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					10ths Inch.	Ins.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
	Above (+) or below (—) the Mean for the week ending August 13.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.	More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	
	Day-deg.	Day-deg.	Day-deg.	Day-deg.					
0	1 — 81	0	— 18	+ 212	3	+ 148	25.8	24	29
1	2 — 87	0	— 160	+ 241	2	+ 118	14.8	25	33
2	3 — 98	0	— 129	+ 186	7	+ 117	14.5	23	31
3	2 — 114	0	— 118	+ 210	4	+ 108	12.9	38	37
4	2 — 106	0	— 88	+ 250	1	+ 100	13.0	29	35
5	2 — 123	0	— 97	+ 138	1	+ 86	10.2	40	42
6	3 — 86	0	— 90	+ 193	10	+ 113	23.3	27	35
7	3 — 98	0	— 82	+ 165	12	+ 116	18.7	26	35
8	1 — 112	0	— 32	+ 117	1	+ 102	14.2	35	42
9	2 — 97	0	— 73	+ 122	5	+ 123	19.5	26	32
10	1 — 116	0	— 25	+ 132	9	+ 110	20.3	23	35
* 0 aver	141	0	+ 37	+ 42	2	+ 101	13.5	59	50

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.

Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

is the safest that can be adopted, and if you could get it placed under someone's special charge, all might be well. Madresfield Court is not one of the best varieties to travel, the skin being liable to crack.

HOPS IN TENERIFE.—Procure some "sets" in spring, pack them in moss, not too damp, or in soil. No Phylloxera attacks Hops, so far as we know. It is quite likely, nevertheless, that the Customs would object to the introduction of Hops for the reason you mention. We have heard of Potatos and bouquets being stopped. As to the pamphlet you mention, apply to the Royal Agricultural Society for a copy of their prize essay.

LAPAGERIA: J. C. A mottled flower, of no particular merit.

MUSHROOMS: G. H. The field Mushroom; useful for catsup, and not unwholesome. — S. M. *British Edible Fungi*, by M. C. Cooke, published by Kegan Paul & Co., Charing Cross Road.

NAMES OF FRUITS: C. W. H. Peach Noblesse.

NAMES OF PLANTS: H. K. 1, *Stanhopea insignis*; 2, *Oncidium longipes*. — F. S. M. *Hedychium Gardnerianum*. — L. R. *Conoclinium ianthinum*. — *Turnford*. *Campanula carpatia*, white-flowered form. — W. B. 1, *Aconitum variegatum*; 2, *Spiraea Douglasi*; 3, *Campanula Medium*, double-flowered; 4, *Tradescantia virginica*; 5, next week. — *Lost*. We do not undertake to name varieties; send them to some nurseryman who grows them largely. — R. L. M. 1, *Phytolacca decandra*; 2, *Reineckia carnea variegata*; 3, *Panicum plicatum*. — J. N. D. The plant that has grown up among your Onions, is *Asphodelus fistulosus*, a native of France, Portugal, and Southern Europe. It was, no doubt, introduced with foreign seed. — *Correspondent, Cadburybox*. 1, *Lychnis diurna alba*; 2, *Achillea aurea*; 3, *Malva moschata alba*; 4, *Achillea ptarmica*; 5, *Potentilla* sp.; 6, *Solidago canadensis*; 7, *Betonica carnea*; 8, *Serratula tinctoria*. — H. A. M. H. 1, *Pteris tremula*; 2, *Asplenium flaccidum*; 3, *Aspidium falcatum*; 4, *Nephrolepis tuberosa*; 5, *Blechnum polypodioides*; 6, *Lastrea glabella*. — C. L. 1, *Passiflora laurifolia*; 2, *Hæmanthus natalensis*. — J. F. F. H. 1 and 2 next week; 3, *Spiraea ariæfolia*. — J. W., *Sheffield*. A new species of *Stapelia*, of which we hope shortly to publish a description.

PTERIDOLOGICAL SOCIETY: Chas. T. Drury. Will appear shortly.

RUST ON LETTUCES: J. P. In the absence of any specimen, we expect your Lettuces are affected with the Lettuce mildew (*Peronospora ganglioniformis*). This is a fungus, and generally is most observed on plants grown in frames, &c., or on plants that have been transplanted. The thinner the seed is sown the less chance will the fungus have. Pull up all affected plants, and remove all decayed leaves, &c. Keep the plants clean, and do not sow on same piece of ground another year.

VARIETIES OF VEGETABLES: *Doubtful*. This is the old difficulty arising from the schedule—framers not defining the sense in which they intend their words to be taken—Cabbage and Cauliflower belong to one genus (plural genera); Peas to another, and so forth. Hence in the list you send—A. has eleven varieties belonging to six genera; B. has eight varieties belonging to seven genera. A Cucumber is in reality a fruit used as a salad; Beet is certainly used as a vegetable.

VINE DISEASE: *Subscriber, and others*. It is the same disease that has been rather inaptly called Diphtherites. Similar specimens have now been examined at various times by different observers, but neither fungus nor insect has yet been met with. The appearances are consistent with defective root-action, but how induced there is no evidence to show.

WEEVILS ON GRAPES: J. T. L. The beetles seem to have perforated the berries, which have consequently rotted. Trap the insects with slices of Carrot or Potato, and visit the vineries at night.

COMMUNICATIONS RECEIVED.—R. D.—J. O'B.—J. R. J.—R. M.—A. D.—J. S.—G. F. Wilson.—R. A. R.—W. D.—*Doubtful*.—G. S.—J. D. S., Baltimore.—J. V. & Sons.—F. V. D.—F. MacO., Cape Town.—J. M.—R. A. R.—W. T. T. D.—W. H.—S. G.—V. K.—H. C. & Sons.—The Board of Agriculture.—H. Correvon, Geneva.—E. W. B.—G. M.—M. C. C.—M. T.—E. W. B.

PHOTOGRAPHS RECEIVED WITH THANKS.—D. M. (2).—W. L., Stockport.—Palace, Gloucester.

SPECIMENS RECEIVED.—P. & Sons, Birmingham.—J. W.—J. P.—C. Wolley Dod.—W. B.

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TRADE MARK
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DIE IN THE HOUSE

—USED—
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OF THE EARTH.

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LONDON, W.C.

1892.

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G. C.,
Aug. 20, 1892.

THE GARDENERS' CHRONICLE

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Births, Deaths and Marriages, 5s. each insertion.

POSITION.—Advertisers are specially requested to note, that under no circumstances whatever can any particular position be guaranteed for advertisements occupying less space than an entire column.

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N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

Advertisements for the current week MUST reach the Office not later than Thursday noon.

All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements, 41, WELLINGTON ST., STRAND, W.C.

SUBSCRIPTIONS.

All Subscriptions payable in advance. The United Kingdom, 12 months, 15s.; 6 months, 7s. 6d., 3 months, 3s. 9d. All Foreign Subscriptions, including Postage, 17s. 6d. for 12 months; Post-office Orders to be made payable at the Post-Office, 42, Drury Lane, W.C., to A. G. MARTIN.

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THE ORIGINAL AND ONLY MAKERS OF THE GENUINE RIVETED TRENTHAM BOILERS



WITH SOLID ENDS. Also—
SILVESTER'S PATENT TRENTHAM, With Special Provision for Cleaning the Inside thoroughly (a Most Important Point). These Boilers, after long experience, have proved themselves the Most Efficient, Economical, and Lasting Boilers extant. Every other kind of Boilers, Sockets, Flanges, and Expansion-Joint Pipes and Fittings, for all kinds of High and Low-Pressure Heating.

FRED SILVESTER & CO.,

General Engineers, Founders, and Boiler Makers, CASTLE HILL WORKS, NEWCASTLE, STAFFORDSHIRE.

CHAS. FRAZER'S EXORS.—Conservatories, Orchid-houses, Vineries, Greenhouses, Plant and Forcing houses. Best Materials and Workmanship guaranteed, at Moderate Prices. Intending Purchasers waited upon by appointment.

HOT-WATER BOILERS AND HEATING APPARATUS, for large or small Greenhouses. Great variety of Garden Frames and Handlights kept in stock. All kinds of Garden Requisites, Poultry Appliances, Portable Summer-houses, Tool-houses, Pigeon Cotes, Dog Kennels, and Rabbit Hutches. Profusely illustrated CATALOGUE, post-free, for six stamps.

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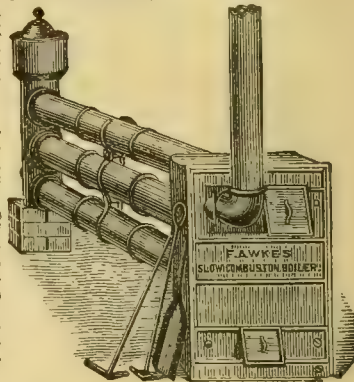
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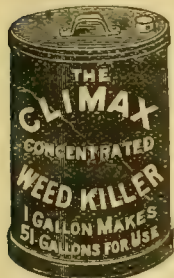
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ORCHID PEAT.

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Have the Largest Sale of any Musical Instrument in the World.

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Highest Awards, Grand Diploma, and Gold Medal, 1891.

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Money returned if not satisfied. SUMMER MUSIC. Gardeners' Chronicle.] THE "GEM" MELODEON, 6s. 8d. THE "MINIATURE" MELODEON, 10s. THE "PARAGON" MELODEON, 14s. THE "FAVOURITE" MELODEON, 16s. 6d. Sent, Carriage Paid, in Great Britain, on receipt of Post Office Order, as above. CAMPBELL'S, 116, TRONGATE, GLASGOW.

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Now ready, crown 8vo, price 3s. 6d.

THE CARNATION MANUAL.

Edited and issued by the NATIONAL CARNATION and PICOTEE SOCIETY (Southern Section).

With contributions by the Rev. F. D. Horner, M.A., J. Douglas, R. Dean, W. Robinson, F.L.S., A. Herrington, Martin R. Smith, Martin Rowan, J. J. Keen, R. Sydenham, Benj. Simonite, M. Campbell, Robert P. Brotherton, F.W. Burbridge, M.A., F.L.S., Harry Turner, J. Jennings, and the Rev. H. H. D'Ombraim. CASSELL AND COMPANY (Limited), Ludgate Hill, London.

CATALOGUES RECEIVED.

W. H. GUNN & Co., Sunderland—Garden Tools, &c.
ELLWANGER & BARRY, Mount Hope Nurseries, Rochester, N. Y.—Strawberries.
JNO. T. GILBERT, Anemone Nurseries, Bourne, Lincoln—Bulbs and Flower Roots.
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DICKSON & ROBINSON, Old Millgate, Manchester—Dutch Flower Roots.
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JNO. LAING & SONS, Forest Hill, London—Bulbs and Flowering Roots.
FLETCHER, DOUGLAS, & JOHNSON, Chesterfield—Bulbs, &c.

GARDENING APPOINTMENTS.

MR. HENRY ADAMS, for the last eight years with R. B. LEMON, Esq., Longshore, Chipstead, has been engaged as Gardener to GEO. C. RAPHAEL, Esq., Castle Hill, Englefield Green, near Staines.
MR. THOS. BROOKER, late of Newberry House, Coleford, Bath, as Head Gardener to Sir CHARLES RUSSELL, Tadworth Court, Epton.
MR. JAS. THOMPSON, late of Fern Bank Nurseries, Woore, near Newcastle, as Gardener to E. W. TURNER, Esq., The Hollies, Bloxwich, near Walsall.
MR. R. DAY, for six years Gardener at Sunnyside, Bedford, and latterly appointed Gardener at Endwood Court, Handsworth, Birmingham, is appointed Gardener to Captain BROWNING, Clapham Park, Bedford.
MR. WALTER DRAFER, of the Crystal Palace Gardens, late of the Royal Gardens, Kew, has been appointed Head Gardener to C. M. SALVAGE, Esq., of Alexandria, Egypt.
MR. THOMAS SIMPSON, for over five years Head Gardener to H. BRAMWELL, Esq., Crown East Court, Worcester, has been engaged as Head Gardener to F. S. H. DYER, Esq., Stourton Court, Stourbridge.

WANTED, a HEAD GARDENER.—Must have a thorough knowledge of Orchids, and be quite competent to take charge of a good collection—Apply, by letter, stating wages required and full particulars of experience, to W., Mr. Cole, 24, Southwark Street, S.E.

WANTED, a HEAD GARDENER and LAND STEWARD, for property of 1250 acres. Large Garden and considerable amount of Glass. No one need apply unless thoroughly experienced in all departments. Copy of testimonials, references, and statement of wages expected, which will be high for a high class man, to J. MARTIN WHITE, Balrudey, Dundee.

WANTED, a GARDENER.—A Lady requires a respectable, trustworthy man, as Working Gardener, for North of Ireland; total ab-tainer preferred. Wife to take charge of House.—Address, MISS NICHOLSON, Pit House, Bembridge, Isle of Wight.

WANTED, a MAN and WIFE, in September.—Man as good SINGLE-HANDED GARDENER; Wife good LAUNDRESS (no children preferred). Address—Mrs. C. WILKIN, Glanmawddach, Barmouth, North Wales.

WANTED, a steady young Man, as FOREMAN in the Houses; age not under 25. Wages, 21s. per week; no bothy.—J. SIMMONS, De Walden House Gardens, Eastbourne.

WANTED, AT ONCE, a WORKING OUT-DOOR FOREMAN for a General Nursery. Wages, and full particulars, to LANTON BROTHERS, Bedford.

WANTED, IMMEDIATELY, a SINGLE-HANDED GARDENER. Board and Lodging found. English servants kept.—Apply, stating wages, to D., Roche Fontaine, Dinard, France.

WANTED, a good HAND at BUDDING and GRAFTING, or would let 20,000 Plums to be done by piece work.—W. HORNE, Perry Hill, Cliffe, near Rochester.

WANTED, a strong active young MAN, for the Kitchen Garden. Age not under 24. Wages 17s. per week.—Apply, W. WENMAN, Hickleton Gardens, Doncaster.

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WANTED, at ONCE, a JUNIOR SHOPMAN, accustomed to smart Counter Trade. State experience and wages expected.—Apply, ARMITAGE BROS., High Street, Nottingham.

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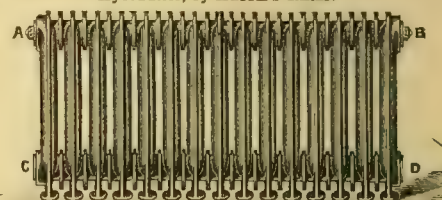
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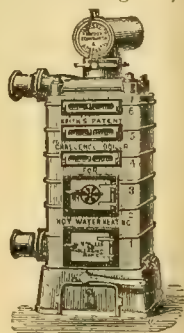
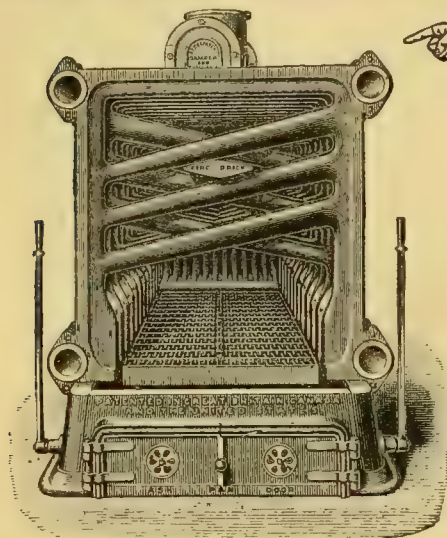
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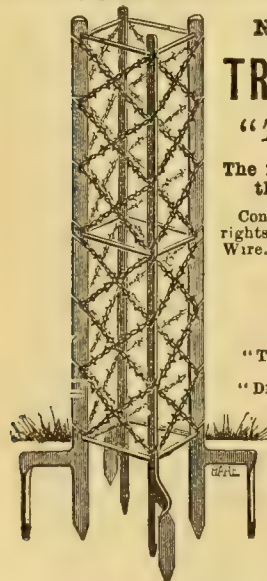
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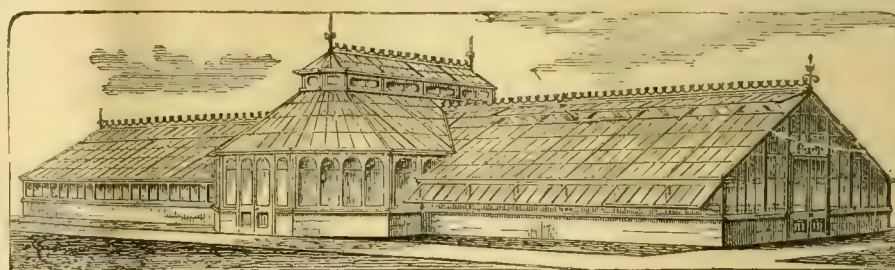
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CARNATION GERMANIA.—Strong plants, in 60's, ready for shifting on. Cash price per dozen, 100, or 1000.—D. ANDERSON, Teddington, S.W.

LARGE CAMELLIAS.—A quantity of very fine Plants in Pots and Tubs, well set with bloom. Will be sold at half the usual prices, on account of room being wanted. May be seen any time, or particulars by post, from WM. PAUL AND SON, Waltham Cross, Herts.

SUTTON'S BULB CATALOGUE for 1892. NOW READY.

Beautifully illustrated with numerous engravings and a handsome coloured plate of various Lilies, and containing accurate descriptions of the choicest varieties of bulbous flowering roots, with clear hints on their successful cultivation, the whole being bound in exquisitely illuminated covers, bearing coloured illustrations of Hyacinths, Tulips, Narcissus, Anemone, Lily of the Valley, &c.

SUTTON'S BULBS GENUINE ONLY
DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

EURYCLES AUSTRALASICA.

Strong flowering bulbs of this charming white flower can now be supplied, 5s. each.
B. S. WILLIAMS AND SON,
Victoria and Paradise Nurseries, Upper Holloway, N.

GENISTAS, in 3-inch pots, 18s. per 100, 500 for £4, cash with order.
C. WOODROFFE, Sudbury, Harrow, N.W.

Fruit Trees a Specialty.
STRAWBERRIES, one of the largest and best collections in the Trade, including all the best of the New and Old Varieties. Full Descriptive Catalogue on application.

FRUIT TREES of all kinds, a very large stock.
JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

DAFFODILS.—DAFFODILS.
"Ye Original Little Book" of same for the Millions. Now ready, and post-free, (Bulbs magnificent), from WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

NARCISSUS, Double White, splendid strain, 20s. per 1000, on rail. Sample 100 free by post for 3s. Cash with orders.—J. J. CLARK, Goldstone, Brighton.

GRAND MONARQUE NARCISSUS, and CAMPANELLE JONQUIL, in large or small quantities. Prices on application to T. GELL, Bulb Grower, St. Lawrence, Ventnor, Isle of Wight.

JOHN COLLINGRIDGE is open to receive Consignments of Choice CUT FLOWERS for SALE, on COMMISSION. Highest references. New Flower Market, and 5, Russell Court, Strand, W.C.

MESSRS. SQUELCH AND WOOD, FRUIT SALESMEN, North Row, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS OF GRAPES, TOMATOS, CUCUMBERS, and all kinds of HOT-HOUSE PRODUCE.

Our business connections being amongst the best houses in London, we are in a position to secure the highest prices for all choice goods. Account Sales forwarded daily and cheques weekly, or daily if required. Empties and labels supplied. Reference, London and County Bank, Covent Garden Branch.

GRAPE VINES of the leading kinds, fine planting and fruiting canes. STRAWBERRIES for present planting. FRUIT TREES of all kinds, wholesale and retail.—WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

WANTED, GERANIUM CUTTINGS.—600 Maid of Kent and 50 Amy Hogg. State the price per 100, to H. APPELBY, Nurseryman, Dorking.

WANTED, GERANIUM CUTTINGS.—Vesuvius, H. Jacoby, John Gibbons, or any other good sorts. Price per 100 or 1000 to—T. SMITH, Florist, Princess Street, Folkestone, Kent.

WANTED, CUTTINGS of Jacoby, Vesuvius, John Gibbons, West Brighton Gem, Queen of Belgians; also good Pinks, Salmon, and Tricolors. Lowest price per 100 or 1000, and when ready for delivery to LAXTON BROTHERS, Bedford.

WANTED, true to name, 500 each, strong, well-rooted RUNNERS of STRAWBERRIES: British Queen, Noble, President, Napier, and James Veitch; also, 1000 of Paxton. Lowest price to WHITE, Pinnbrook Gardens, Whipton, Exeter.

CYCLAMEN SEED.—World-renowned strain, Highest Awards and Certificates. Mont Blanc, Baroness Burdett-Coutts, Grandiflora, Excelsior, Sunray, Crimson King, Duke of Fife, Princess May, Mauve Queen, Brilliant, and other varieties. See page 340, March 12, of this paper. Trade packets, from 5s.; special prices per ounce.—The ST. GEORGE'S NURSERY CO., Cyclamen Specialists, Hanwell, W.

The Best Present for a Gardener.
VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
Third Edition, just out.
Price 5s., post-free, 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

STEPHANOTIS FLORIBUNDA.—Four large Plants, trained on Stakes; also Four HOYA CARNOSA for Sale, or exchange for Palms, Tuberous Begonias, Ferns, &c.—Apply, GARDENER, Lindum Holme, Woodhouse, Sheffield.

LOVEL'S YORKSHIRE STRAWBERRIES.
Well-rooted runners of Thury, Paxton, President, and others. 25, 1s.; 100, 4s. 6d.; 1000, 35s.; all carriage paid.
LIST free.
W. LOVEL AND SON, Strawberry Growers, Driffield.

DAFFODIL, "Countess of Annesley," splendid large, cultivated bulbs, to produce two and three flowers each, free by post, at 6s. 6d. per dozen, remittance with order. Also LIST of surplus stock of NEW and RARE SHRUBS on application to Mr. RYAN, Castlewellan, co. Down.

Kindly Note.
CACTUS AND DECORATIVE DAHLIAS.
GEORGE PHIPPEN would be pleased to give information to those having New Varieties or Seedlings of the above. If a few specimen flowers (packed in damp Moss), were sent him he would gladly compare them with his collection of over 120 varieties, and report to the sender free of any charge whatever.
The Nurseries, Reading, Berks.

In Chancery.
FRUIT TREES.—80,000 very choicest kinds. Apples, Pears, Cherries, Peaches, Filberts, and Plums; 20,000 noble, tall, standard Victoria Plums and Damsons, 4 and 5-yr. old; and 2000 Rhododendrons and pretty Shrubs, Roses, and Hardy Flowers. In small or large quantities. Purchasers' selection. See CATALOGUES.—LAND STEWARD, Hon. GERTRUDE JONES, Churchfield, Cradley, near Malvern.

STRAWBERRIES.—Descriptive priced LIST of new and select Strawberries for the coming season, for cultivation in the open ground, and in pots for forcing, now ready, including "LAXTON'S SENSATION," new, very large, second early variety, wonderfully prolific, and of good flavour, "LAXTON'S SCARLET QUEEN," the best-flavoured and brightest-coloured first early; White Knight, Competitor, Cardinal, Latest of All, and Commander, all distinct and reliable new varieties; Noble, A. Nicaise, La Grosse Sucrée, J. Ruskin, and all the best Standard English and Foreign sorts, true to name. THOMAS LAXTON, Seed Grower, Bedford.

Boulton & Paul's Outdoor Requisites.
BOULTON AND PAUL
MANUFACTURERS, NORWICH.
Every Requisite for the Kennel and Poultry Yard, Aviaries Pigeon Cotes, Pheasants, Requisites for the Garden, Park, Pleasure Grounds. Wire Netting for Game and Sheep. Iron and Wire Fencing, Gates, &c.
Send for Illustrated CATALOGUES, post-free, on application.

J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 10, Victoria Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

SALES BY AUCTION.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY, at 12 o'clock, large consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland.

Lotted to suit the Trade and Private Buyers.
On view morning of Sale, and Catalogues had.

Friday Next, September 2.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 2, at half-past 12 o'clock, by order of Mr. F. Sander St. Albans:—A marvellous importation of a gigantic CYPRIPEDIUM from Amboyna; the plant is of noble growth, quite Titanic; flower-spikes immense, having sometimes seven of its big white-striped, long-tailed flowers on a stem; the sabot, or shoe, is very peculiar, and of a beautiful pinky-mauve colour; the ribbon-tails are long, and in some cases broad, in others narrow, white, with hairy black-like cushions or burrs; the natives call this the "holy urn flower," and we are sure that no species of Cypripedium has ever been imported from the country and habitat of this noble and princely Lady's-slipper. It is the flower above all others in Native estimation the sacred holy urn flower, from its great loveliness and purity. Plants are simply magnificent, having been brought home by Collector, and we invite our numerous patrons to purchase, and we offer the plants without any reserve, relying on their support.

CYPRIPEDIUM WHITE may be a form of *C. niveum*. If this is the case, it will probably be a very free-growing plant, as geographically the habitat of the plant now offered is apart many hundreds of miles, coming really from Chinese territory, and our collector assures us it is a really superb white Cypripedium, and a free grower, flowering with the greatest profusion, and lasting an immense time in bloom.

THE WHITE-LIPPED CYP. GODEFROYE.
THE BEAUTIFUL CYP. BELLATULUM.

These three plants are all perfectly lovely, and we most strongly recommend them.

DENDROBIUM SP., way of ANOSMUM, from Chinese territory, large purple blossoms.

30 plants of beautiful and rare MASDEVALLIAS.

50 HYBRID CYPRIPEDIUMS from magnificent kinds.
Also 20 plants of CATTLEYA AUREA TYPE, specially marked by Santoyachia's pæons. We cannot, however, guarantee these, not having seen them ourselves.

Many other fine and useful ORCHIDS will also be included.
On view morning of Sale, and Catalogues had.

Friday Next.

DENDROBIUM TETRAGONUM.—A very remarkable and fragrant species, with flowers 2 to 3 inches across, white, yellow, and purple. The variety offered is exceedingly floriferous.

LÆLIOPSIS or BROUGHTONIA SP.—Grand masses of a fine-looking plant collected for Salopsis domingensis in a new district. All are in grand health. Flowers varying from rose to crimson.

BROUGHTONIA SANGUINEA.—Noble masses of this finest of crimson Orchids.

SCHOMBURGKIA LYONSII, true.—With grand heads of rich purple and white flowers. The handsomest and rarest of the Lælia-like Schomburgkias.

ONCIDIUM SPRUCEI.—The finest of the terete-leaved species, with short heads of large golden, yellow, and red flowers.
And other rare species.

MESSRS. PROTHEROE AND MORRIS will include the above in their sale on September 2.

Upper Edmonton.

About 5 minutes' walk from Angel Road, and 8 minutes from Silver Street Railway Stations.

SEVENTH GREAT ANNUAL TRADE SALE of about 80,000 GREENHOUSE AND OTHER PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. MAY to SELL BY AUCTION, on the Premises, The Dyson's Lane Nurseries, Upper Edmonton, on MONDAY, September 12, at 11 o'clock punctually, owing to the large number of lots,

80,000 STOVE and GREENHOUSE PLANTS, remarkably well grown, and in the best possible condition, including 30,000 FERNS,

all the most useful market sorts, and many novelties.
10,000 TREE CARNATIONS, including Mrs. Moore, Duke of Fife, Florain, Winter Cheer, Mrs. A. Hemaley (new), M. Carle A. Alegatierre, a fine lot of old Crimson Clove.

2,000 TEA ROSES in POTS, extra strong, Maréchal Niel, Gloire de Dijon, W. A. Richardson, and climbing Niphetos, with well-ripened growths 12 to 15 feet long, and others.

10,000 BOUVARDIAS, including Purity (pure white), President Cleveland, Mrs. Robt. Green, Candidissima, and all the best double and single varieties.

CROTONS, LAPAGERIA ALBA, KENTIAS, AMPELOPSIS VEITCHII, CLEMATIS, IVIES.

VINES (strong canes) GROES COLMAR and ALICANTE.

1,000 FICUS ELASTICA VARIEGATA, well-grown plants.

5,000 young PALMS.

3,000 GENISTAS, fine bushy stuff.

1,000 do., smaller, for growing on.

3,000 well-berried SOLANUMS.

CYCLAMENS, double white PRIMULAS, CAMELLIAS.

AZALEAS, forward in bud for early forcing; and a great variety of other PLANTS.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Balham, S.W.

SHORT NOTICE.—CLEARANCE SALE OF GREENHOUSE PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises at the back of Leigham Cottage, Balham High Road (entrance from Verran Road), on TUESDAY NEXT, Aug. 30, at 11 for 12 o'clock precisely, without the slightest reserve, by order of Mr. J. G. Waite, who has sold the land for building purposes, the whole of the STOCK of GREENHOUSE PLANTS, consisting of specimen white CAMELLIAS and AZALEAS, 400 ASPIDISTRAS VARIEGATA, specimen STEPHANOTIS, and other plants in pots; and sundries.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Richmond.

UNRESERVED SALE OF HORSES, VANS, CARTS, and UTENSILS, in consequence of the Nursery Business having been disposed of.

MESSRS. PROTHEROE AND MORRIS (having sold the Business) will Sell by Auction, on the premises, Steel's Nurseries, Kew Road, Richmond, Surrey, five minutes walk from the Richmond Railway Station, on TUESDAY, September 6, at 2 o'clock, three Cart-Horses, Harness, capital Phaeton, two Spring Market Vans, three Tumbril Carts, Light Spring Cart in good condition, Hay-making Machines, Ploughs, Harrows, Horse-Roller, and a few Farm Implements, Chaff-Cutters, Wheelbarrows, Stable Utensils, Garden Tools, 40 Bushel and Half-bushel Baske s. Oak Fencing, two Iron Garden Rollers, Ladder, White Lead, Oil, Glass, and other effects.

May be viewed day prior and morning of Sale. Catalogues had on the premises and of the Auctioneers, 67 & 68, Cheapside, London, E.C.

Lee Kent, S.E.

GREAT ANNUAL TRADE SALE to commence at 11 o'clock, there being upwards of 1300 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Muller & Son, to SELL BY AUCTION, on the premises, the Burnt Ash Lane Nurseries, Lee, Kent, S.E., adjoining the Lee Railway Station, on TUESDAY, September 13, 1892, at 11 o'clock precisely, without reserve, a remarkably well-grown stock of WINTER BLOOMING HEATHS, and other STOVE and GREENHOUSE PLANTS, consisting of:—

20,000 Erica Hyemalis	5,000 Genistas
5,000 " Graebis	5,000 Solanum capsicastrum
2,000 " Cavendishii	(well berried)
500 " Cocconea minor	1,000 Adiantum cuneatum
600 " Caffra	500 Lomaria g bba
All well-set with Bloom Buds.	800 Tea Roses (in pots)
1,000 Ampelopsis Veitchii	2,000 Bouvardias (of sorts)
1,500 Epacris (to name)	1,000 Palms (of sorts)
1,000 Boronia megastigma and others	1,000 Cyclamen Persicum
1,000 Grevillea robusta	500 Crotons
	500 Clematis Jackmannii

with a large quantity of Young ERICA HYEMALIS, E. CAVENDISHII, E. GRACILIS, and others; also GENISTAS, EPACRIS, of sorts, all in 60-pots, for growing on.

The stock may now be viewed. Catalogues may be had on the premises; at the Seed Warehouse, 51, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Sidcup.

GREAT ANNUAL TRADE SALE, by order of Messrs. Gregory & Evans.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises, the Longlands' Park Nursery, Sidcup, Kent, about 1 mile from New Eltham Station, on FRIDAY, September 16, 1892, at 11 o'clock precisely, in consequence of the large number of lots, 20,000 HEATHS, including Hyemalis gracilis, Venticosa of sorts, Cavendishii, and Hyemalis alba.

1500 Solanums, well berried	1000 W. A. Richardson in
1000 Double Primulas	24 pots
1500 Maréchal Niel Roses, in	1000 Niphetos
24's, fine plants	500 Souvenir d'un Ami
1000 Perle du Jardin, in 32pots	1000 Bouvardia, of sorts
500 Saffraro	1500 Latanias and Kentias
500 Catherine Mermet	

Large quantity of other mixed plants. The whole will be found in first-class condition.

May be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Lea Bridge Road Nurseries, Leyton, E.

GREAT ANNUAL TRADE SALE OF WINTER-BLOOMING HEATHS and GREENHOUSE PLANTS, by order of Mr. J. Fraser.

MESSRS. PROTHEROE AND MORRIS respectfully give notice that the above ANNUAL SALE will take place on WEDNESDAY, September 14.

The Brimsdown Nurseries, Enfield Highway.

ANNUAL TRADE SALE OF WINTER-BLOOMING HEATHS and GREENHOUSE PLANTS, by order of Mr. J. Maller.

MESSRS. PROTHEROE AND MORRIS beg to announce that the above ANNUAL SALE will take place on THURSDAY, September 15.

Moat Nursery, East Grinstead.

ANNUAL TRADE SALE OF GREENHOUSE PLANTS, by order of Messrs. Roberts Brothers.

MESSRS. PROTHEROE AND MORRIS desire to notify that the above ANNUAL TRADE SALE will take place on TUESDAY, September 20.

Wednesday Next.

EXTENSIVE IMPORTATION OF BULBS FROM HOLLAND.

MR. J. C. STEVENS will SELL BY AUCTION at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY NEXT, August 31, at half-past 12 o'clock precisely, a splendid importation of BULBS FROM HOLLAND, including the usual choice assortment from some of the most renowned growers. Early White ROMAN HYACINTHS, Forcing NARCISSUS, consignment of BULBS from CONSTANTINOPLE.

On view morning of Sale, and Catalogues had.
N.B.—None but good and reliable Bulbs will be offered.

Thursday Next.

A COLLECTION of ESTABLISHED ORCHIDS, some in Flower and Bud; a consignment of CATTLEYA ACKLANDII, just to hand; IMPORTED ORCHIDS, from Madagascar; COLLECTION of STOVE and GREENHOUSE PLANTS, &c. Also an extensive importation of BULBS from HOLLAND.

MR. J. C. STEVENS will SELL the above BY AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 1, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

WANTED, HOT - WATER PIPING.—1000 feet of 4 and 2-inch.—Particulars to—TURNER BROS., Nurserymen, Garston, Liverpool.

WANTED, to HIRE, with option of purchase, GLASSHOUSES suitable for Early and Late Forcing. Near station and good market town.—Address, F. NEVILLE, Old Catton, Norwich.

FOR SALE, a MARKET NURSERY, comprising 4000 square feet of glass in 8 Houses, well heated. For particulars, apply to G. LEE, Ainsdale, near Southport.

FREEHOLD LAND, 18 acres, suitable for Poultry or Market Garden, 1½ miles from Whitchurch Station, Hants. Lovely part. Price, £20 an acre. B. DOWNS, 52, Cheapside, London, E.C.

FOR DISPOSAL, a SMALL NURSERY—about 3 acres. For particulars, apply to—E. B., The Limes, Fordham, Cambs.

FOR SALE.—About 160 feet run of First-class VINERY, in full Working Order, with matured Vines; and SITE FOR SHOP, in a good business part of the Town of Reading; suitable for Working Gardener. Apply to—W. G. MILLAR, 10, High Street, Reading.

TO BE LET, or SOLD, a compact, attractive, old-established NURSERY and FLORISTS' BUSINESS, Freehold. Same hands over twenty-three years. Ill health cause of retiring. Capital six-roomed house, gas and water laid on; two large greenhouses, 22 feet by 18; two smaller do., one span-roof, 21 feet by 9, and seven ranges of brick pits, and every convenience. A good chance for an energetic man. Only 1½ mile from centre of city.

For full particulars send stamped envelope to WM. TOMKINS, Nurseryman, Northwick Road, Worcester.

To Lovers of Gardens.

TO BE LET, a charming old MANOR HOUSE, recently restored, added to, and decorated, with very good walled Gardens, fully stocked with a fine Collection of Herbaceous Flowering Plants and Shrubs, and in perfect order; large Lawn Tennis Ground, Conservatory, Greenhouse, and Range of Heated Pits. The House contains ten Bed-rooms, five Sitting-rooms, and usual offices; Stabling for four or six Horses, Dog Kennels, Poultry Sheds, Mushroom House, and Paddock. Two miles from Lewes, Sussex; close to Church and Post; one hour and a quarter from London. Unfurnished; rent, £120. For further particulars, apply to J. HORSLEY PALMER, The Lawn, Bournemouth.

TO BE SOLD, as a thorough going concern, the LEASE, over 19 years, and 7 Greenhouses, over 700 feet run, all heavily cropped with Peaches, Tomatoes, and Cucumbers. Situate in a town of 12,000 inhabitants, within 20 miles of Covent Garden, and close to station. Room for another 600 feet run of Glass. Would suit two young men excellently, and altogether is an opening seldom occurring. The best of reasons will be given for leaving.—X. Y., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR DISPOSAL, the JOURNALS of the ROYAL AGRICULTURAL SOCIETY OF ENGLAND, from 1839 to 1888, 110 vols., complete and in good order. Also GARDENERS' CHRONICLE, from 1883 to 1891. AGRICULTURAL GAZETTE, 1883 to 1891. Offers invited.—Address, G. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

CHAR (WOOD) for SALE.—Apply to WILLIAM SHANKS and SONS, Airdrie Saw Mills, Airdrie, N.B.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

HAVE AN

IMMENSE STOCK of ORCHIDS,

All in the finest health and condition,
And they are constantly receiving importations from various parts of the world.

The Company earnestly request the inspection of their Stock by intending Purchasers.

New, Descriptive, and Priced CATALOGUES post-free on application to the Company.

THE VINEYARD AND NURSERIES,
CARSTON, NEAR LIVERPOOL.

L'HORTICULTURE INTERNATIONALE (LINDEN), LEOPOLD PARK, BRUSSELS, BELGIUM.

Just to hand, in SPLENDID CONDITION, an extraordinary fine importation of well-leaved plants of

LÆLIA GRANDIS TENEBROSA.

Good plants, 5 to 8 bulbs, 21s.; fine plants, 8 to 12 bulbs, 42s.; extra fine plants, 10 to 15 bulbs, 63s.

A few extra large and superb specimens, prices on application.

A VISIT TO OUR ESTABLISHMENT AT THIS SEASON WILL PROVE MOST INTERESTING AND INSTRUCTIVE.

WE OFFER TO EACH VISITOR to our Establishment, who purchases to the amount of £50, a discount of £5, which will cover the expenses of the journey to Brussels. N.B.—The most convenient trains are at 10.15 A.M. and 8.15 P.M. from Charing Cross or Victoria. The journey from London to Brussels, either *via* Dover-Calais, or Dover-Ostend, takes only eight hours.

Messrs. LINDEN, L'Horticulture Internationale, BRUSSELS.

FOR ORCHIDS and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

VERY CHOICE LILIUM HARRISII, 7 to 9 inches round, 6s. per doz.; 9 to 11 inches round, 10s. per doz. Chionodoxa Lucillae, 3s. per 100; extra fine, 4s. 6d. per 100. Elwes' Giant Snowdrop, 4s. per 100; 35s. per 1000. Full List on application.

ROBERT SYDENHAM, Roseleigh, Birmingham.

150,000.—Special Offer of Kentias.

W. ICETON has a large quantity of the above to offer, very reasonable, at from £7 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well established, at £30 per 1000.

W. ICETON, Putney, S.W.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year-old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

CHARLES VUYLSTEKE, NURSERYMAN, Lochristy, Ghent, Belgium, offers VERY BEST PLANTS, at LOW PRICES, of Azalea indica, Azalea mollis, and Azalea mollis flore pleno, Hardy Ghent Azaleas, Camellias, Rhododendrons, Palms, best sorts for Table and Room Decoration; Dracaenas Australis, Brauntii, rubra, &c., Ficus elastica, Orchids, &c., &c. New CATALOGUE now ready, and may be had free from—

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

SCARLET VAN THOL TULIPS, 2s. 6d. per 100; 23s. per 1000.

EARLY WHITE ROMAN HYACINTHS, average bulbs, 1s. 4d. per dozen; 10s. per 100. The pick of the market, nearly 6 inches round, 2s. per dozen; 15s. per 100.

NARCISSUS ORNATUS, 9d. per dozen; 5s. 6d. per 100. **GOLDEN SPUR,** the finest yellow for forcing, 3s. 6d. per dozen; 25s. per 100; **FREESIA REFRACATA ALBA,** 1s. per dozen; 5s. 6d. per 100; extra fine, 1s. 3d. per dozen; 9s. per 100.

ROBERT SYDENHAM, Roseleigh, Birmingham.

BULBS FOR AUTUMN FLOWERING, &c.

Descriptive LIST on application.

Beautiful and rare species of CROCUSES, as yet almost unknown. Beautiful autumn-flowering MEADOW SAFFRON, producing a beautiful effect in September. FLOWER OF THE WEST WIND, white; LILY OF THE FIELD, yellow. Autumn-flowering SCILLAS and SNOWFLAKES, GUERNSEY and BELLADONNA LILIES. For early planting, ELWES' GIANT SNOWDROPS, CHIONODOXAS (Glory of the Snow), ANEMONE PULGENS (Scarlet Wind-flower of the Riviera), ROMAN HYACINTHS, &c.

BARR AND SON, King Street, Covent Garden, London, W.C.

CARTERS' BULBS for FORCING.

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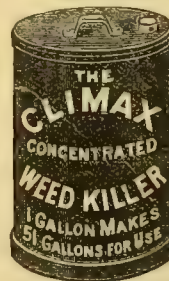
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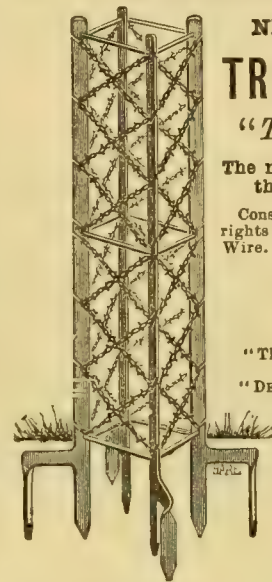
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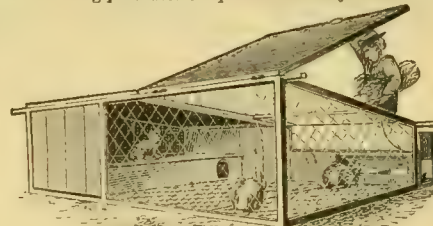
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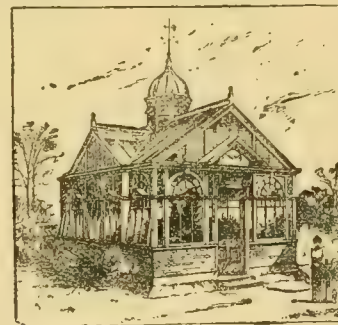
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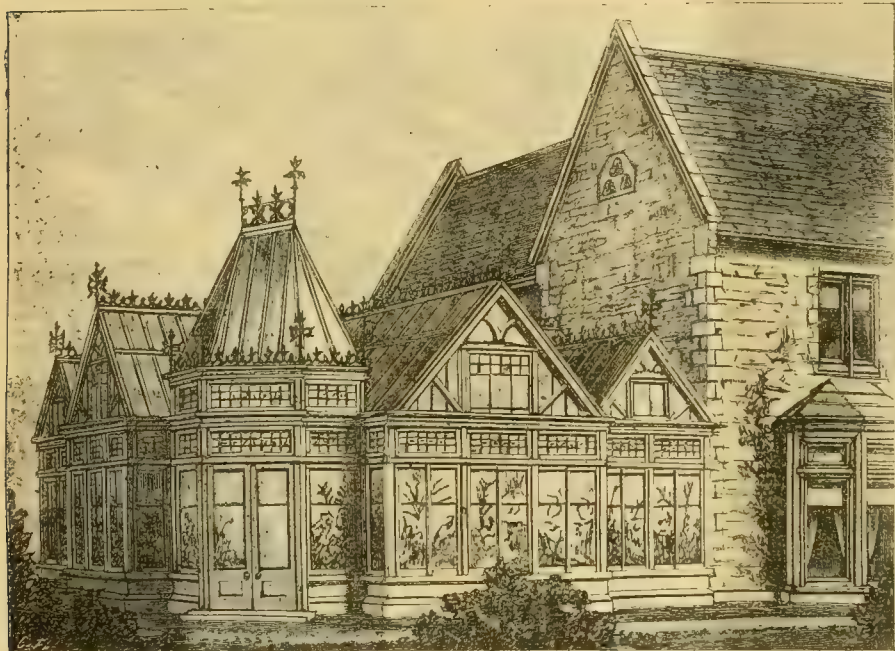
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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 27, 1892.

A SURREY HEATH.

IN spite of its ominous name, Blackheath,
near Guildford, is a lovely spot, worthy of
the beautiful Surrey scenery which surrounds it.
It is a gem set with brilliants. The charming
villages of Albury and Womersley lie to the north
and south, and the heath is a jewel which the
two parishes share between them. It lies high
amidst hills of such note and beauty as St
Martha, the North Downs, the ridge above
Ewhurst, Chinthurst Hill, and, in the further
distance, Leith Hill, and Black Down. Its chief
glory at the present date (August 8) is its bril-
liant carpet of blossoming Heath, covering many
acres. The two earlier species found here are
fading, while the later common Heath, or Ling,
Erica vulgaris, is still at its best. Three weeks
ago the small pointed flower-buds of this species,
borne on their leafy racemes, were white. The
unfolded corollas are now of an exquisite pale
pink.

There are about 400 genuine species of the
much-branched and usually low shrub called
Heath, and three of these, including *Erica vul-*
garis, now generally classed as a distinct genus,
and named *Calluna*, have made Blackheath,
Surrey, gay with blossom since about July 20,
and the latest of them is yet in its rosy glory.
In speaking to a handsome wild flower, as one
may do on a solitary heath, where there are none
to mark you but the whinchat by day, and the
nightjar at eve, one naturally says to it, "You
beauty! How far does your species wander?
How many other countries do you frequent and
charm?"

There is a pleasant story told of Linnaeus, that
he had never seen the common Furze (*Ulex*
europæus) till he came to England, and this is
quite possible. Neither American, Asiatic, nor
African can behold the golden glory of this
plant in his native land—at least, as a wild
plant; and in Europe it is limited in its range,
and does not reach the Mediterranean nor
Sweden. It is most abundant in the United
Kingdom, blossoming on Blackheath and
throughout England from early spring till late
autumn, and sometimes in winter; in fact, so
persistently does it blossom all the year round,
that the kindly Sussex people have a quaint
saying, "When Hawth's in bloom, kissing's in
tune." It is said that when Linnaeus came upon
a common where he first beheld the prickly
shrub in bloom, he fell upon his knees regard-
less of his companions, and thanked God that he
had lived to see so beautiful a plant. I can
quite believe this of the great naturalist.
Honour be to all genuine enthusiasm, and to
those who love a golden flower more than gold!

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Wordsworth was in this mood when he made the shrub with the nutty-perfumed blossom say—

"On me such beauties summer pours,
That I am covered o'er with flowers;
And when the frost is in the sky,
My branches are so fresh and gay
That you might look at me and say,
This plant can never die!
The butterfly, all green and gold,
To me hath often flown,
Herein my blossoms to behold,
Wings lovely as his own."

Returning to the Heaths, Bentham (*British Flora*) describes the genus as eminently Atlantic. Many species are found in South Western Africa, but they hug the Atlantic, and extend but a very little way eastward. In Europe, too, the Heaths are western, except two or three species, which visit the sandy waste of northern Europe, or extend around the Mediterranean. None are found in Asia, America, or Australia, so in questioning the Heaths we learn that they as well as some other inestimable blessings (moral and religious), are only enjoyed by ourselves and a handful of other people; while the greater part of the world, including six or seven hundred millions of Asiatics, cannot claim their acquaintance. One might be sure that the fair sex—and the fairest of the fair are found in these islands—would love flowers; and several ladies have, in fact, written books about them. Among the volumes on wild flowers compiled by female hands there is one, nicely illustrated, in which we read that *Erica Tetralix* is the most widely distributed and best known of all our native Heaths, that it often grows with the Heather (*sic*), or *Calluna vulgaris*, and that its flowers were adopted as the badges of the Highland clans. The *Calluna vulgaris* the authoress describes as the Heather of Scotland, plant of the Highlander, associated with his country in all its legends and poetry, forming the couch of which Sir Walter Scott wrote—

"Before the Heath had lost the dew,
This morn a couch was pull'd for you,
On yonder mountain's purple head."

I have no doubt the lady is right, but she differs in all points from Bentham, who describes the common Heath, or Ling—*Erica* (*Calluna*) *vulgaris*—as the most widely distributed of all the Heaths, extending over the whole of Central and Northern Europe, and in Britain very abundant. He names *Erica cinerea* as Scotch Heath, or Heather, ranging over nearly the whole of Britain, and covering immense tracts of country on the Scotch, Irish, Welsh, and some of the western English moors; while the Cross-leaved Heath (*Erica Tetralix*) is not so universal in Europe, and is not so gregarious as the Scotch Heather. It is curious that it preserves this latter characteristic on Blackheath, where it grows in a few patches only, extending in one case over about an acre. The flowers form little terminal clusters or close umbels, and are of a delicate rose colour. They began to fade at the end of July, when the flowers of the common Heath—which are far more durable—began to open, and those of the Heather were still in their glory. Scott could not err on his own mountains, and his "purple head" exactly describes the colour of the blossoms of *Erica cinerea*. They are reddish-purple, arranged in dense terminal racemes, handsome and showy in the last degree. The Heaths do not blossom all the year, like Gorse, but when they are in flower, I think the dwellers in Blackheath may fairly claim them as the handsomest of all blossoming

shrubs, taking them, that is, in masses as they are usually found.

The Heaths of our wastes may be described as soil-winning plants, since they flourish in raw ground in which delicate subjects and most cultivated plants would refuse to grow. Blackheath is kept poor by the custom of paring thin slices from the surface for the sake of fuel, and thus removing the mass of roots and vegetable matter which the Heaths had accumulated in their growth. The removal of the turf destroys at one stroke the adventitious fertility which had been collected. It removes a soil, poor it is true, but full of vegetable matter, like the prairies of the West—just such a soil as a gardener would be glad to acquire, and it exposes the white sand below. It is a fraud upon the heath which the surrounding cottagers perpetrate at intervals of a few years, and as soon as the act has been committed, the several Heaths—seedlings or otherwise—again strike their roots into the sand, and win more soil for

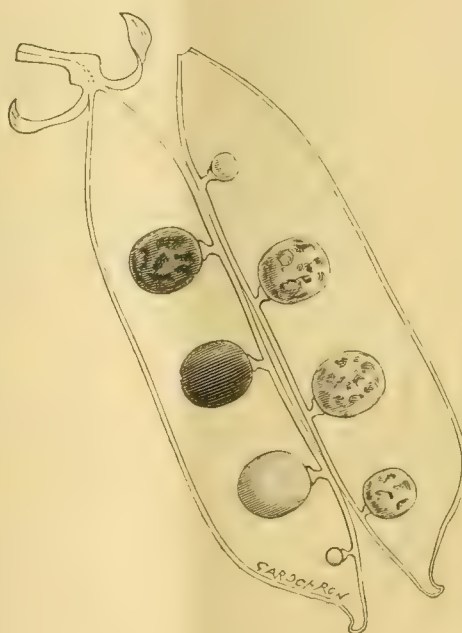


FIG. 39.—A HAPPY FAMILY: AS LIKE AS PEAS IN A POD!

the next paring of the surface. The Heaths, therefore, are as useful as they are beautiful, serving as important agents in the subduing of the earth for the use of man.

The flora of this poor but pretty spot, where the soil has to be won by the agency of a few sturdy plants appointed for the purpose, can hardly be a rich one. A few weeks ago, however, the Willow Epilobe, called sometimes French Willow or Rose-bay, *Epilobium angustifolium*, one of the handsomest of wild flowers, grew here in several moist places. These spots are wet in winter, and in summer dry, and they have now dried up, and the French Willow has followed suit, and has withered, I believe, rather prematurely. Its height was nearly 3 feet, the plant consisting of a single stem, with large purplish-red flowers, in long terminal racemes. Bentham says, "Widely spread over Britain, but not common, and in many places introduced." It is a plant likely to be introduced on account of its very handsome and conspicuous flowers, and for that reason several

cottagers on the margin of the heath, and in the growing hamlet in one of its hollows, have transferred it to their gardens. Possibly this may be partly due to the Rose-bay being a plant of good repute among herbalists, the leaves stopping bleeding and healing wounds; but cottagers admire beauty. A very smart and pleasing girl, the daughter of a wealthy farmer, tripped by, and I noticed that my companion, an honest fellow of the above class, looked after her with a very pleased expression—"Aint she now as handsome as a goldfinch," he remarked. As the goldfinch, dressed in its smart jacket, is one of the neatest and handsomest of British birds, he could hardly have used a more appropriate comparison.

At the head of one of the numerous little gorges cut by water in primeval times, from the high-lying heath to the country below, is a clump of Gorse. A path runs up this hollow, whose sides are thinly planted with Scotch Firs, young and vigorous, and clothed with Scotch Heath, which was blossoming gorgeously a short time back. An ant's nest, an immense heap of *débris* collected by the industrious insects, adds to the interest of this pleasant approach to the heath above, and so, higher up, does a rather uncommon plant which covers many yards of surface beneath the Gorse. It is obvious that this is a member of the graceful family of Fumitories. It is the climbing Corydal, *Corydalis claviculata*, an annual with small white flowers and slender stems 2 feet long, as unable from their weakness to stand upright as a gorgeously-attired Chinese lady whom I noticed the other day trying to "do" the Crystal Palace on her crippled feet. The poor thing—gaudy as any insect of the Amazon—was supported by her attendants, and the climbing Corydal by the stems of the Gorse, to which it clings by means of delicate tendrils at the ends of the leaves. The plant is so entwined with the Gorse, that it was difficult to secure a specimen without tearing it away by force. It is, says the authority already quoted, widely distributed over Britain, but not common, except in some parts of western and northern England, Ireland and southern Scotland. I believe it likes a moist place to grow in, and it is reported as growing not far from this spot, in a damp copse, where it spreads itself over the roots of trees. *H. E.*

AS LIKE AS PEAS IN A POD!

SOME weeks since we formed part of a party invited by Messrs. James Carter & Co., to see a field of Peas in growth. Many have seen illustrations of rows of Pea-haulms propped up and supported by the ripening pods, and many have smiled sceptically at what they considered the playful imagination of the artist. A visit to Messrs. Carter's field of Daisy Peas sufficed to show that had the artist been present at Bromley he would not have had to tax his imagination much. There were about 3 acres under growth in rows 3 feet apart, and throughout the crop was uniformly large. The Daisy Pea is a dwarf wrinkled marrow coming in after the early varieties. Its haulm is about 18 inches in height, or a little less, copiously furnished with symmetrical, well-filled pods, about 4 inches in length, each with nine or ten Peas.

The history of the Daisy Pea is as follows:—With the object of filling the somewhat bladder-formed pod of Culverwell's Giant Marrow, Messrs. Carter crossed that variety with Stratagem, the result giving them a distinct-looking Pea. In the following year they again crossed the produce of the first cross with Stratagem, the result, after another year or two of careful selection, being the present Daisy Pea.

The flavour of the Pea is excellent, and from

its great productiveness it is likely to attract the attention of market growers. As seen at Bromley, it was grown without support of any kind, but we think it would pay to stretch a wire along the rows, and insure the exposure to light and air of all the pods, many of which, as we saw them, were buried beneath the others, and calculated to invite the attentions of mildew, had such been present as was happily not the case.

the greater height that the cross-bred Pea produced when compared with that of the other parents, as the Daisy may be measured at 18 inches in the garden, and 9 inches in the field; whilst the Lightning may be measured at 2½ feet in the garden, and say 18 inches to 2 feet in the field. There is no advantage in this length of straw; in fact, Messrs. Carter should have preferred it if the straw had not been so long.

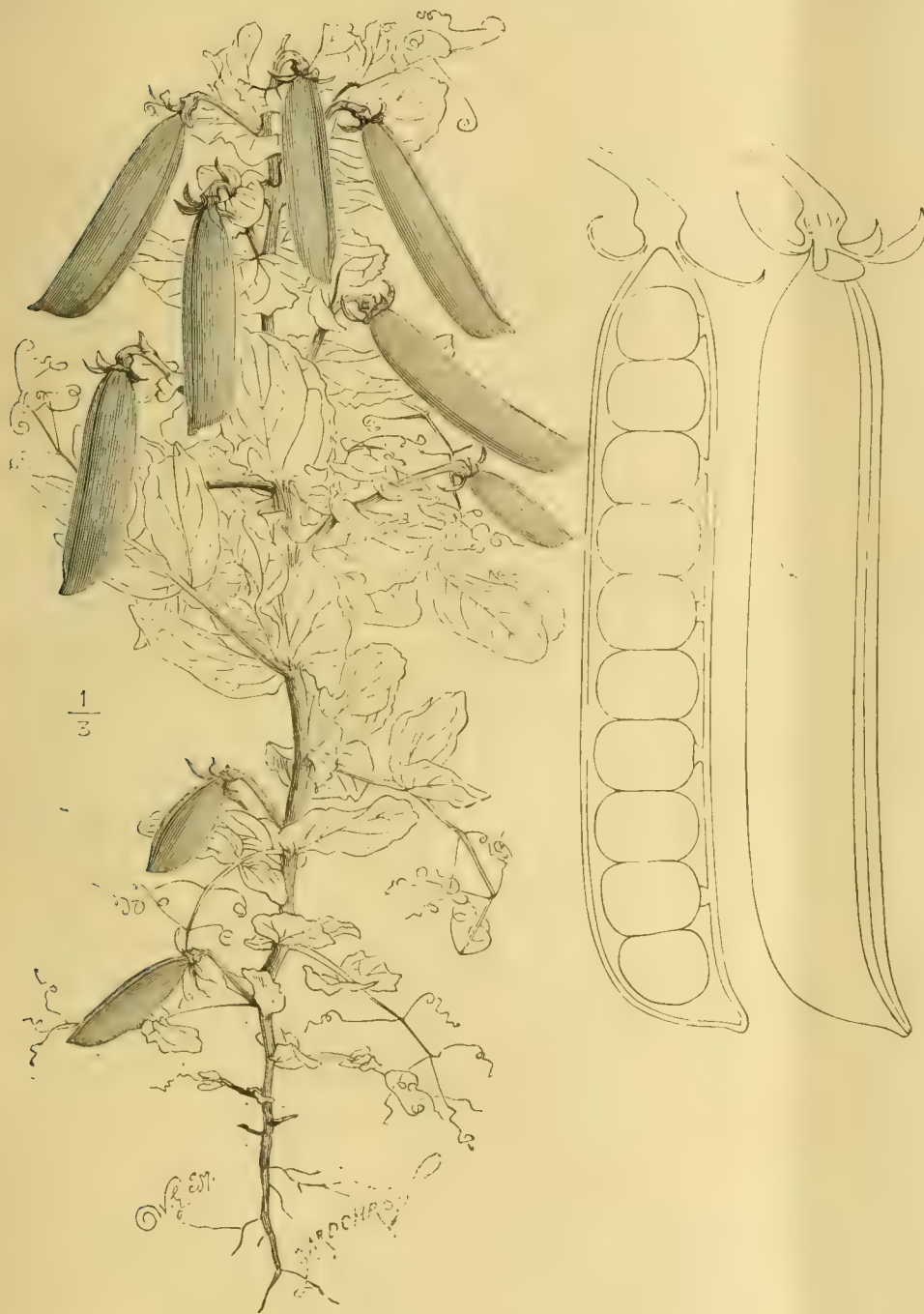


FIG. 40.—THE DAISY PEA: REDUCED TWO-THIRDS; PODS REAL SIZE.

The Daisy Pea has received an award at the hands of the Fruit Committee, and our representation of the plant at fig. 40 gives a good idea of its appearance.

Messrs. Carter showed us on the same occasion various other crosses among Peas, one of which was raised between Daisy and Lightning, supposed to be the earliest white Pea at present in cultivation. The object in this case was to get a better flavour in the early Pea; but one interesting and peculiar feature in this case was

As illustrating the variety produced by this process of crossing, and the consequent time, care, and labour required in selecting and "fixing" any particular characteristic that may be required, and, of eliminating others that are undesirable, we give an extract from our notebook relating to nine pods of one cross, taken at random. It shows, what, indeed, every gardener knew before, that the adage, as like as peas in a pod, is one which is much less true than the unobservant imagine. In one pod contain-

ing eight seeds, we found five blue and three white seeds, all wrinkled. In one case there were two pods on one stalk, of which one had one blue and five white seeds, all wrinkled; the other had one blue and four white seeds, also all wrinkled. In other pods there were respectively eight Peas, all white, five round, three wrinkled; seven Peas, six round white, one round blue; eight seeds, all blue, seven round and one wrinkled; this was growing on the same stalk as the preceding; eight seeds, all blue, four round and four wrinkled, intermixed; seven seeds, of which two were white wrinkled, one blue smooth, one white smooth, and three abortive; five seeds, of which four were smooth white, one smooth blue; three seeds, two wrinkled white, one wrinkled blue; and lastly, a pod with five seeds, of which four were wrinkled white, one wrinkled blue. Thus, out of eleven pods of the same variety, sixty-seven Peas were taken, of which thirty were smooth and thirty-seven wrinkled, thirty-nine were white and twenty-eight blue. Plenty of work yet before anything like fixity of character can be obtained.

We give an illustration of one pod, fig. 39, in which Peas of all kinds were growing in the same pod, viz., three wrinkled white, one smooth white, one smooth blue, and one wrinkled blue—to say nothing of two abortive ones, one at each end of the pod, of undetermined character. We endeavoured to ascertain whether we could trace any definite relation between the exact position of any particular Pea in the pod, at the extremities, or in the centre, and its form or colour; but in this we were wholly unsuccessful. Perhaps if one had patience to investigate many thousands of such cases, some valid result might be attained to.

We have some recollection that Mr. Laxton several years ago showed specimens before the Scientific Committee, which went to show that the seed-coat, and not only the embryo within it, might be influenced by the pollen of a particular variety.

Verily the changes that may be produced by cross-breeding seem endless. It must be admitted, however, that only an infinitesimal proportion afford any practical advantage to the experimenter over what he had before. To an enthusiast, that circumstance only makes success more sweet when it does come.

THE GROVE, STANMORE.

MRS. BRIGHTWEN'S pretty garden, situated on the edge of Stanmore Common, has a natural beauty in the undulating character of its extensive grounds, and its beauty has been considerably enhanced by the clever planting of rare shrubs and Conifers a good many years ago. Many of the specimens are now of gigantic proportions, although they still retain that perfect form which is characteristic of younger trees. A view from one side of the mansion reveals a fine picture, in which a 50-feet high *Cryptomeria japonica*, a grand specimen of *Araucaria imbricata*, some noble *Sequoia gigantea*, 30 or 40 feet in height; some tall columnar *Libocedrus decurrens*, and Junipers, and a huge *Liriodendron tulipiferum* form prominent objects. On the right is the Dell in which the *Rhododendrons* have been very beautiful, and in which the different foliage of the specimens planted there make a good effect. One of the most stately and beautiful is *Dimorphanthus mandshuricus*, and among the most elegant are the *Bamboos*. On the higher ground is the display of bedding plants, and in the various arrangements in the flower garden the judicious mingling of herbaceous plants, annuals and other plants, obtained from seeds, and working them in with the *Pelargoniums* and other summer bedding-plants, has a most telling effect. Further on there is a hardy fernery, and in several parts of the gardens there are cool nooks and dells, which form comfortable retreats in the summer-time. The kitchen garden is rendered beautiful with herbaceous perennials, many of the main walks being bordered by them, and a

brilliant effect is created by the fine beds of Carnations, the Roses, Delphiniums, and the countless species of showy perennial flowers, among which the Stocks, Mignonette, Godetias, Sweet Peas, and other flowers, give variety and rich fragrance.

THE GLASS-HOUSES.

These contain many rare and curious specimens, and both in the plant and the fruit-houses the things cultivated have improved in every respect during the few years Mr. John W. Odell has been gardener at The Grove. In the conservatory, with its Ficus-clad sides, and the rockery bay at the back, we found the centre arranged with stately Palms, and the rest tastefully arranged with flowers, such as Tuberose, Carnations, Agapanthus umbellatus, Crinum Mooreanum, &c. One of the prettiest plants there was a plant of the new hybrid Streptocarpus, with a dense head of about fifty flowers.

Among the Orchids are a capital lot of *Cœlogyne cristata*, a fine batch of *Calanthes*, good *Odontoglossums*, *Masdevallias*, and other cool-house Orchids; and *Disa grandiflora*, *D. racemosa*, and *D. tripetaloides*, in a very thriving condition, the two last-named being among the freest and most satisfactory plants in the garden, and flowering profusely, and increasing rapidly. In the stove-houses there are some fine Ferns and ornamental plants, and on the roof some large specimens of *Allamandas*, *Bougainvilleas*, and *Gloriosa superba*; in the greenhouses, a good display of *Begonias* and other flowers; and the various Peach-houses, Fig-house, and vineries, are excellently well managed, and have given, or are giving, their fruits in abundance. Mr. Odell has calls on him with regard to other parts of the estate, and he holds, moreover, a First-class Special Teacher's Certificate in Agriculture from the Science and Art Department, and teaches and lectures on those subjects with considerable success; but the fine trim in which the gardens are kept, tell plainly that he allows nothing to interfere with the most minute details of their management.

JAPANESE IRISES.

THE flowers of *Iris Kämpferi* are now about over. Plants in full sun, the best situation for them, do not continue blooming for more than a month, and are, with us, in their greatest beauty at the end of June and beginning of July; but by planting in shady situations the blooming time may be extended to about two months. I wonder in gardens with water, or damp situations, that this *Iris* is not more generally grown. It is much admired, and so varied in form and colour, as to suit all tastes. When it was first introduced, we bought some of Messrs. Veitch's importations, with fine flowers, but as the plants and our experience were both small, the former did not live long. Our next trial was with a few larger clumps, bought at a sale; seeds of these were sown and seedlings, and seedlings of seedlings, planted round our four small ponds at Oakwood. Where the soil was good, they thrive, but in a few places, where it was at all poor, they dwindled, and did not bloom well. We planted from the water's edge upwards, and found that the plants did not suffer from being wet at the roots in winter. We also planted some in moist soil at some distance from the ponds.

In the *Flowers of Japan*, by Mr. J. Conder, at plate iv., the *Iris* flowers seem to be about the same size as ours; but there are some colours which we have not yet got.

Mr. F. T. Piggott, in the *Garden of Japan*, an interesting book, recently published, at p. 40, gives a drawing of *Iris Kämpferi*, and speaks of "thousands of every tint, from purest white, through the purples, down to pale crimson." When looking round our plants, with flowers nearly over, he told me of flowers he had seen in Japan larger than any I have known in this country. When I told him of the belief that up to the time of the Vienna exhibition *Iris Kämpferi* had been sacred to the Mikado's garden, and not allowed to be sent out of the country, but that the desire to make the most effective Japanese garden prevailed, and *Irises* were

sent, and sold at the end of the exhibition, and distributed over Europe, he had not heard of this, and said he had seen them in various parts of Japan.

We have lately had the chance of extending our cultivation of *Iris Kämpferi*. Having to drain a field annexed to the garden, we did so by means of wide ditches; one of them had easy slopes, and was planted on both sides with *Irises*, two deep, 700 clumps, and a part of the new field, seeming to be moist enough, between 3000 and 4000 clumps of seedlings were planted on level ground. These plants seem thriving; few bloomed this season, but I hope next year there will be a fine display, in addition to our getting the chance of especially good varieties for show situations. In some of our old clumps round the ponds four varieties bloom in the same clump, and the effect is rather pleasing than otherwise. I believe that many nurserymen can now supply the *Iris*. *George F. Wilson, Oakwood.*

TREES AND SHRUBS.

EUONYMUS JAPONICUS AUREO-MARGINATUS.

It is not generally known that the above is one of the best of evergreen wall climbers, and for any aspect. We have it growing in various places, and it thrives well in all; one plant is on a north-west wall that is 17 feet high, and the *Euonymus*, having other plants on each side, is much admired for the colours of its leaves, green and yellow, and its glossy look. Against a south wall the yellow comes out if anything fuller, but the growth is not so rapid as in less warm positions. *E. M.*

KALMIA GLAUCA.

The genus *Kalmia* comprises about half-a-dozen evergreen shrubs, which are in the month of May covered with a mass of beautiful flowers, the colour ranging from white to rose-purple. The profusion of flowers and the richness of colour, together with the length of time they remain in full beauty, render them a very important picture amongst American flowering plants. To Sir Joseph Banks belongs the honour of having introduced *K. glauca* into this country, he having found it while travelling in Newfoundland between 120 and 130 years ago. It is admirably adapted to serve as an edging to taller-growing subjects, as it rarely exceeds 1 foot to 18 inches high. Its flowers are borne freely, and are a rich pinky colour; it is the first of the genus to open its flowers. Its linear-lanceolate leaves measure about three-quarters of an inch; they are of a bright glossy-green above, and glaucous beneath. *K. latifolia*, introduced more than a century and a half ago, is one of the most popular of the genus. It is a stronger grower than the first-mentioned, having broad leaves of a shining green. Its flowers are carried in terminal corymbs of a light rose, changing to white. Both are thoroughly hardy, and delight in a peaty soil with an addition of leaf-mould; they must be fully exposed to the sun, so that they will thoroughly mature their wood. The value of both these American plants for pot work in the early part of the year is well known, when they light up the conservatory with a rich harvest of flowers, which is almost unequalled by any other flowering shrub at that dull season of the year. After blooming, they should be encouraged to make fresh growths by placing them in a warm temperature, and using the syringe freely; they must be hardened off gradually, and then planted on a warm border, where they can get as much sunlight as possible. *H.*

EXOCHORDA GRANDIFLORA.

Although by no means common, it is, nevertheless, one of the most beautiful of white-coloured blossoms produced in the month of May. It was first sent to this country by Mr. Fortune from North China. It is figured in the *Botanical Magazine*, t. 4795, under the name of *Spiræa grandiflora*, and in these columns in 1881, fig. 13. It forms a loose, straggling bush, growing to a height of 6 or 8 feet, but if trained on a wall grows much higher. The long pendulous

shoots are nicely clothed with soft green lanceolate leaves, which measure from 2 to 3½ inches long; the shoots are terminated by racemes of white flowers, each of which are about the size of a penny. Although perfectly hardy, it well merits a place on a warm wall, as it will then flower some time in advance of those in the open shrubbery. A little pruning is necessary, which is best carried out when it has finished blooming, for if pruned earlier, some of the flowering-shoots are liable to be taken away. It delights in moist soil, fully exposed to the sun. Water should by no means be allowed to get stagnant at its roots, or it will soon present a sickly appearance. There are two other species—*E. Alberti* and *E. Karolkowi*—both of which are but little known to English gardens. *H.*

GENISTA PRÆCOX.

Of the numerous hardy *Genistas*, none is more showy or more welcome in early spring than *G. præcox*. It is thoroughly hardy and well adapted to most garden soils. Single specimens dotted about the shrubbery make a very imposing sight in the months of April and May, with their long slender shoots [wreathed with small straw-coloured flowers hanging in a graceful manner. A capital show is obtained if a number of plants can be grouped by themselves in round beds on the grass, the strongest shoots fastened to the ground with pegs, so that they form a mass at the base, for if allowed to grow at will they are apt to lose their lower shoots, which, in a measure, detracts from their value. Plants treated as recommended above, and if seen from a distance when in full flower, have the appearance of a golden cloud. In common with several members of the same family, *Leguminosæ*, it cannot always be depended upon to reproduce itself from seed. I have endeavoured to raise it from seed many times, but it generally reverts to the White Broom, and to keep it true to name I find it is best to increase the stock by cuttings, which are best put under hand-lights on a sheltered border in September. The cuttings should be from 5 to 7 inches long, with a heel of old wood attached, and dibbled into soil of a sandy nature, taking care they are quite firm at the base. When completed, a watering with a fine-rosed can should be afforded them, and the lights put on. The lights may with advantage be taken off occasionally to allow of superfluous moisture to escape. Shading must be attended to on bright days. *H.*

RARE ALPINE CAMPANULACEÆ.

Campanula Allionii, Vill. (*C. alpestris*, All.), grows on the maritime Alps of Piedmont, at an altitude of between 3250 to 4875 feet. This species is peculiar to Mont Cenis, and is one of the rarest and most beautiful of alpine species. It is a bushy plant, with tufted, linear-lanceolate root-leaves; stem stoloniferous, and scarcely erect, 1½ to 2 inches above-ground. Flowers large, bell-shaped, pendent like those of *C. medium*, usually single, in colour violet-blue, opening in July—August. It requires full exposure to the sun, and a soil composed of peat, loam, and sand, well mixed together with some small pieces of flint. It thrives in the chinks of old walls or among the stones on a sunny rockery; it can be increased, like *C. Raineri*, by cuttings.

C. abietina, Gris.—From the Transylvanian Alps, is a curious and beautiful plant, resembling *C. patula* in the shape of the flower, colour of corolla, and form of inflorescence. Leaves narrow, the edges toothed, growing in rosettes, and forming a pretty tuft of verdure, from which rise the flower-stems, rather spreading, slender, creeping and then erect, in height from 8 to 10 inches at most, and bearing a comparatively large number of reddish-violet flowers, with a large white spot in the centre of each. The plant should be grown in sunshine, in light stony soil, and multiplied by seed or division of the tufts. The blossoms appear in succession all through the summer.

C. Barrelieri, Presl. (*C. fragilis hirsuta*, DC.), is a downy variety, in habit stiffer and more thick-set

than the type of *C. fragilis*, Cyril, growing on the mountains of southern Italy, and easily grown on our rockeries in sunny positions; it is increased by cuttings, division of the clumps, or by seed.

C. cenisia, L.—From the summits of the western and central heights, where it grows at elevations of from 6500 to 9750 feet. It is a small many-stemmed variety, with creeping rhizomes, the stems scarcely at all erect ($\frac{3}{4}$ to 2 inches at most), one-flowered, leaves entire, obovate-spatulate, bright green, the edges downy, growing in rosettes, whence rise the flowers, which have spreading corollas, comparatively large and bluish-lilac in colour. This is a pretty species, and peculiar to the rocks and moraines of glaciers. It is stoloniferous, and its branches often

position, especially in the English climate and the full sun. Increased by seeds or division.

C. excisa, Schleich.—Grows on the Simplon range, at an elevation of between 4875 to 8125 feet. This species, which I have before recommended to the readers of the *Gardeners' Chronicle*, is now in full flower with us, and it is quite a mistake to call it difficult of cultivation. The little pendulous bluish-violet bells open in succession for weeks in the alpine garden, where we grow this species in full sun and in light and stony soil. It is easily increased from seed.

C. garganica, Ten.—From the Apennines, is one of our prettiest and most free-flowering plants for walls. It forms charming tufts of bright and delicate leaves, around which rises a circlet of beautiful clear

C. Petrea, L.—From the maritime Alps, and Southern Tyrol, at altitudes of from 3250 to 5200 feet. A rare and curious species, related to the *C. thyrsoides* group, with yellowish flowers, nearly sessile, and growing, not in the form of a "thyrsus," as with the above-named species, but in clusters, as do those of *C. glomerata*. It is rarely seen in cultivation, although it always does well if set deeply in rich damp soil, and given a sunny position. Can be increased from seed. It blooms in July and August.

C. Raineri, Perp.—From the Alps of Italian Tyrol, Lombardy, and the neighbourhood of the Lake of Como, at a height of 3250 to 5200 feet. It is a rare and handsome plant, with very short stems, thick and leafy, and its roots are sent down into the chinks of rocks exposed to the full sun, where is spread its tuft of little downy leaves, which are orbicular, the edges crenulated. The plant is covered with flowers during the months of July and August. The flowers are exceedingly beautiful, sessile, and level with the plant, which they cover entirely. The corolla is wide and large, widely opened, of a fine bluish-violet colour. The flowers are successional for many months, and form a valuable ornament during a time of the year when flowers are scarce. We have long tried to obtain seeds of this beautiful species, but as they ripen late in the autumn found it impossible. It is difficult to transplant this species as, like *Phyteuma comosum*, it forces its roots and stolons into the hardest rock, which it is impossible to break up. We have recently tried cuttings, following the advice of a Milanese botanist, who knew how much I wished to grow *C. Raineri* at Geneva. In September I took thirty cuttings from sprays sent me by Mr. Arteria, the botanist before-mentioned, and these had been three days on the journey. The cuttings were put in sand under a glass in a cool place, and all have rooted. The greater number have already grown into pretty plants, which are blooming, and which we keep in full sun on a south wall.

C. Waldsteiniana, R. and S.—From the Southern and Eastern Alps of Austria and Transylvania. A pretty little species, slender and fine, with numerous small deep violet flowers, borne on very thin supple stems about $1\frac{1}{2}$ to 6 inches high, which bear also narrow, linear leaves. The plant blooms freely from July to September, and requires sunshine and stony soil. Is increased by division or seed-bud; at any rate, in Geneva it fruits rarely.

C. Zoysgii, Wulf.—From the Austrian Alps, at an elevation of from 6500 to 8775 feet. This is the gem of the genus, the sole representative of a type unlike the rest of the genus *Campanula*, and of which the flower, instead of being a more or less opened bell is contracted round the mouth like the alpine cattle-bells on our alpine pastures, or the blooms of *Dicentra* or *Clematis coccinea*, only quite small. The whole plant is but a few centimetres high, and blooms in July and August; is increased rarely by seeds, and with some difficulty by division; the culture recommended for *C. Allionii* will suit it.

There are many other excellent dwarf and rock-growing *Campanulas*, but their cultivation is understood in England, and need not be dwelt upon here. I would only remark further that *Campanulas* are valuable for the decoration of rockeries in summer, as these are almost the only species which bloom freely in August and September, and are moreover of a blue or violet colour, which is always rare on rock-works. We have succeeded in our Linnæa garden (which is 5850 feet above sea-level), admirably with many *Campanulas*, but we have derived most satisfaction from the *Edraianthus* and *Phyteuma comosum*, L. In a rockery on the summit of a mountainous peak which forms the garden, in full sun and exposed to all the winds, we have every known species of *Edraianthus*, thriving excellently, forming little hummocks from 10 to 12 inches across, and so covered with stemless flowers densely packed one against another, that the foliage is quite hidden. In early July, *Phyteuma comosum* was especially admirable, growing in a south aspect between the cracks



FIG. 41.—*BEGONIA SOCOTRANA*: ROSE-COLOURED FLOWERS. (SEE P. 244.)

extend far, spreading to a certain distance from the parent stem, and it forms sturdy clumps, which in July and August are quite covered with flowers, and look charming. In Geneva we grow it in stony well-drained soil, exposed to the full sun, although the plants are always kept moist. It is easily increased by seed or by dividing the clumps.

C. Elatines, L.—From the valleys of Piedmont and the mountainous regions of north Italy, a peculiar and charming little plant, which when wild, grows in the clefts of old moraines and on rocks, which it adorns all through the summer. The foliage is but little developed, and forms small tufts of pubescent and slightly greyish leaves, but the floral branches rising from between the rocks or the ground are from 4 to 8 inches long, slightly panicle, bearing numerous intensely blue flowers, which open in succession from August to November, and in that season are most valuable. It likes a rockery, an upright

blue flowers. It is a gem which should be in every rock garden. It requires sun, and an upright position; is increased by seed or division.

C. muralis, Portenschlag, alias *C. Portenschlagiana*, R. and S. This is a species often confused with the preceding, and which grows in the mountainous regions of Dalmatia. It differs considerably from *C. garganica*, and forms very large clumps, which is not the case with the Italian species. The stems are numerous, slender, forming a green tuft of dark glabrous green; the leaves are orbiculate, the edges crenulated, and quite covered during May, June, and July with bell-shaped pendent flowers (flat, and widely open in *C. garganica*), of dark violet-blue, and growing in long panicle clusters, diffuse; leaves quite different to those of *C. garganica*. As growers of alpine often confuse the two, it is well to insist on the details which distinguish them. The mode of culture is the same as for *C. garganica*.

of a dry rock, and blooming as freely as though it were in the Dolomite. Sun, fresh air, rather poor soil, in these lies the secret of success in the cultivation of rock-growing *Campanulas*. *H. Correvon, Directeur de Jardin Alpin d'Acclimatation, Geneva.*

COMPARATIVE VALUE OF ANIMAL MANURES.

THE application to the land of animal manure, either alone or mixed with vegetable substances, has from the earliest times been considered as the best means of producing fertility in the soil, or of restoring its productive powers when exhausted.

Of all what may be termed auxiliary manures at the command of the gardener, probably guano occupies the first and most important position. And although guano of the strength in nitrogen formerly obtained can scarcely be bought at the present time, yet the unshaken belief in this manurial agent entertained by many market gardeners may be explained by the fact that in certain cases they get as good a crop from it now as they did previously. The fact being, that in the majority of cases 8 to 10 per cent. of nitrogen is quite sufficient to apply in any manure at the ordinary rate, and the larger quantity formerly used was, in too many instances, wasted.

Guano, as is probably known, is composed of the excrements of sea-birds, which have accumulated in the course of time, in layers of greater or less depth, upon uninhabited islands and rocks. Good guano comes to us from those zones of the earth in which it never, or at least extremely seldom, rains, and from such islands as are sufficiently elevated to prevent the overflowing of sea-water; for if either happened, the best and most efficacious portions of the guano would be dissolved and washed away. If a dung-heap is suffered to lie without attention for only a few years with the sun shining upon it, the air driving through it, and the rain washing its goodness away, what will at last be left? Not much, beyond the carbonaceous and mineral substances which could not be dissolved or volatilised.

Such is the case with washed-out and bad guano, and this inferior article is now very frequently to be found in commerce, in the place of the rich guanos formerly to be purchased; therefore, gardeners should be on their guard when buying this fertiliser.

Enquiries are often made as to the value of poultry manure, and its comparison with other animal excrements. We have therefore given in the table below the quantities of four of the principal manurial constituents contained in cow-manure, pig-manure, and fowl-manure; each in its natural state and free from litter. The quantities are shown in pounds per ton of manure.

Selected Constituents in Three Animal Manures, in lbs. per Ton.

Constituents.	Cow Manure.	Pig Manure.	Fowl Manure.
	Lb.	Lb.	Lb.
Potash	7	2	24
Phosphoric acid	5	18	41
Lime	6	33	47
Nitrogen	9	13	87

The data thus given shows that of the three manures quoted, that produced by cows is by far the least valuable, except in the matter of potash; and it is generally so regarded. This may be explained by the large quantity of fertilising constituents withdrawn from the food by the milk yielded. It has been estimated that a milch cow will carry off from a meadow in the course of a year by the milk which she yields as much plant-food as is contained in $1\frac{1}{2}$ ton of farm-yard manure.

The excrements of cows contain the smallest quantity of nitrogen, and the largest quantity of water, amongst the manures of which we have spoken. On this account they pass but slowly into putrefaction, and become less heated when lying in heaps; for heating is exclusively a result of the putrefactive fermentation, and keeps pace with this process. In addition to this, the substance of these

excrements does not acquire a crumbling texture by lying or desiccation, but becomes saponaceous and compact; by which its distribution in the soil, as well as its decomposition and liquefaction are rendered more difficult. The slow but persistent action of this manure is thus explained at once.

Pig-manure varies in character probably more than that of any of our domestic animals, for pigs are of all creatures the most indiscriminate in their diet, and their excrements must, on that account, vary much, according to the kind of food they may happen in any particular case to obtain. Containing so much water and so little nitrogen, the dung, like that from cows, but slowly undergoes decomposition in the soil, and is, therefore, regarded as one of the "cold manures."

Fowl-manure, like that of guano from sea-birds, is a powerful fertilising agent; it contains as much or more nitrogen than many of the commercial manures in the market, besides 1 per cent of potash, and 1.83 per cent. of phosphoric acid. The dung of fowls contains not only the undigested food, but also in solid form the excretions of the kidneys, which in cattle are voided as urine, and are apt to be lost, both by drainage and by rapid fermentation. Thus the richer food, and the fact that the dung of fowls is comparatively dry, explains the higher percentage of nitrogen, phosphoric acid, and potash in it. Care in its use is necessary, as also with guano and other of the strong manurial agents, or mischief may be done to the plants for which it is employed. If dissolved in water, it may advantageously be applied to all fruit trees, especially during the period of fruiting; also for Tomatos, Onions, Chrysanthemums, Fuchsias, Geraniums, &c. If fowl-manure is used for Vine borders, for which purpose it is admirably adapted, it should be mixed with equal quantities of charcoal-dust or cinder siftings.

Farmyard manure is particularly liable to fluctuations in its chemical composition, according to its preparation, and the amount of food and litter supplied to the animals. The following may, however, be taken as about the average composition per ton:—

Selected Constituents in 1 ton of Farmyard Manure.

Potash	Lb.
Phosphoric acid	8
Lime... ..	16
Nitrogen	12

It has been found that by far the larger part of these ingredients in farmyard manure are in an insoluble condition—that is to say, in a state in which plants cannot feed upon them until they have undergone further change.

For example, a portion of the nitrogen in farmyard manure exists as ready-formed ammonia—our sense of smell readily detects this fact—but a large proportion becomes only very gradually converted into ammonia, as the nitrogenous organic matter decomposes in the soil.

Thus, owing to the slow decomposition of farmyard or stable-manure, and the tardiness with which a large proportion of its nitrogen becomes available for the use of the growing crop, three or four times, or even more nitrogen, than in active artificial manures or fowl-dung, must be applied to produce the same effect upon the immediately succeeding crop. Stable-dung, however, possesses two very important properties—one mechanical and the other chemical.

By reason of its bulk and the quantity of organic matter it contains, it serves to render the soil more open and porous, and so to enable it not only to retain more water in a favourable condition, but also to absorb and retain more of the valuable constituents of the manure, and thus to arrest the passage of them in solution below the root-range of the plants. Further, by the gradual decomposition of the organic matter of the dung the pores of the soil become filled with carbonic acid, which probably serves to retard the oxidation of the ammonia into the more soluble form of nitric acid, in which it would be more liable to be washed out of the soil, and lost by drainage. At the same time, the carbonic

acid evolved in the decomposition of the stable-dung will, with the aid of moisture, serve to render the mineral resources of the soil more soluble *J. J. Willis, Harpenden.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA HARDYANA VAR.

A MAGNIFICENT *Cattleya*, evidently of hybrid origin, between *C. aurea* and a fine form of *C. Warscewiczii* (gigas), has just flowered with G. W. Law-Schofield, Esq., New Hall, Hey, Rawtenstall, Manchester. It is a large and well-formed flower, the sepals and petals bright light purplish-rose, a cream-coloured marbling and veining showing in places. The broad-fringed labellum is of the richest dark purplish-crimson, with a yellow patch on each side of the tube, and a rich golden-yellow veining, after the manner of *C. aurea*, running from the base. This fine form is very near to *C. Hardyana* Laver-sinensis figured in the *Lindensia*, and it was a lucky purchase at Messrs. Protheroe & Morris' Rooms, out of an importation of Messrs. F. Sander & Co., St. Albans. From the same source came also a lighter but equally beautiful form of the same plant now in flower with A. H. Smee, Esq., at the Grange, Hackbridge, Surrey. Both are delightfully fragrant.

CATTLEYA GRANULOSA SCHOFIELDIANA.

A flower of a noble form of this out of an importation of Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, comes from the gardens of J. W. Temple, Esq., Leyswood, Groombridge. The falcate petals are $3\frac{1}{2}$ inches long, and 2 inches broad. The upper sepal is 4 inches long, and the lower ones 3 inches. Sepals and petals clear yellow, spotted with crimson. The large labellum is white, with raised crimson lines on the front lobe, and bright yellow inside, as far as the deeply-cleft side-lobes. Of late, there have been some very distinct varieties of *C. granulosa* noted, some of which have clear yellow unspotted sepals and petals, while others have been very richly spotted. *J. O'B.*

A BRITISH FERNERY.

IN support of my contention that our native British Ferns in their innumerable varietal forms are fully capable of competing with the *élite* of their exotic brethren as indoor decorative plants, I send herewith a photograph of my own collection as seen from the dining-room window of my house. (See Supplementary Illustration.)

All the Ferns embraced in the view, with two exceptions, in the background (*Woodwardia radicans*) are purely British, and have been grown without the least artificial warmth, so that they are regularly frozen quite hard in severe winter weather. In the somewhat dry and therefore uncongenial county of Essex, a glass structure is absolutely necessary to bring out the more delicate character of many of the finest forms; the dry winds and occasional droughts dwarfing and damaging such varieties when grown out of doors, unless exceptionally sheltered situations be chosen, and due care taken as regards the watering. Many dwelling-houses, however, whose backs have a northern aspect, would be greatly improved by the erection of similar ferneries under the shadow they afford from the noonday sun, and, as will be seen by the engraving, the windows opening into them will look out upon as pretty a prospect as could well be desired, at once refreshing to the eye by its pleasant verdancy, and at the same time replete with varied detail of foliage of the more interesting character.

It will give some slight idea of the variability of our native Ferns when it is stated that in the view given there are not half a dozen duplicate forms, nearly all being quite distinct, and several hundred varieties figuring in the area of vision. Immediately in the foreground, occupying a central position, is indubitably the finest frilled Hart's-tongue yet discovered, *Scolopendrium vulgare* var. *crispum grande*, Wills, its bold fronds measuring fully

5½ inches across—a wild find in Dorset; next it, to the left, is one of Mr. G. B. Wollaston's happy hits, *Polystichum angulare polydactylum* No. 10, again a hedgerow gem. Behind these, in the centre, is the wonderful plumose Shield Fern of Colonel Jones and Dr. Fox, *P. ang. d. pl. densum*, one of a trio of kings in that family. Behind this again, towering into the air, is the lovely superbum Lady Fern, densely plumose, and heavily tasselled, yet originating from a finely-cut *Athyrium* of purely normal outline. In the background are several

the Male Ferns, a thorough Tree Fern, with a well-developed trunk a foot in height; and bending over the right-hand path several of the curiously crossed and tasselled fronds are visible, springing from a division of the original *A. f.-f. Victoria*, these fronds by actual measurement being 3½ feet long, as against an average of 2 feet yielded by its adult seedlings. Another "reputed" division stands at the end of the left-hand path.

Several fine varieties of *Polypodium vulgare* may be seen growing on suspended blocks of peat, and

growth of a row of larger Ferns on the rockery below. This trough is filled with a rockery in miniature, and serves its purpose admirably. The opposite wall is partly masked by hanging pots, while the end one is built entirely of large burrs, to which are attached a number of cork receptacles for Ferns of decumbent habits, and small ones which find suitable lodgment in holes made in the cork for the purpose. As the fernery (18 by 14 feet) is too large to be entirely shaded by the house, a portion of the roof at the end is boarded over, which has the effect of throwing the Fern fronds forward towards the house. A movable blind of scrim is also suspended upon three stout strained copper wires, passing through a series of rings attached to the centre and edges of the blind. With the aid of a long bamboo this blind can be pushed to and fro exactly as required. Ventilation is secured by small windows in a lantern next the house. As coolness is a great desideratum in the culture of British Ferns, an ideal fernery would be a covered cutting, facing north. The nearer a regular temperature, not exceeding 65° or 70°, can be maintained in summer, the stronger and healthier the growth; but in winter no artificial heat whatever should be used, since, with the exception of the Maidenhair (*Ad. Cap.-veneris*) and the Sea Spleenwort (*Asp. marinum*), all are quite hardy, and are even benefited by exposure to the normal winter frosts. If these be excluded by artificial heat, the dormant period of the Ferns is shortened, premature growth begins, probably in January, and their vitality is greatly impaired during the ensuing season.

Side windows are not advisable in ferneries of this description, since the plants are apt to grow too much towards them, and thus the view from the house is impaired, while with high side walls, not only can more plants be accommodated, but the general top light coming more strongly from the south, fosters a growth and adjustment of the fronds which materially enhances the beauty of the prospect from indoors. Generally speaking, it is better to grow the larger Ferns in pots, rustic ones preferable, and mask these with rockwork, rather than to plant in the soil itself. This facilitates shifting when the Ferns outgrow their space, or a little change is desired. In winter, too, many of the species being deciduous, it is often found desirable to shift the evergreen ones, viz., the Shield Ferns, hard Male Ferns, Hart's-tongues, *Blechnums*, *Polypods*, &c., so as to distribute their verdure evenly over the house; which by judicious selection and arrangement may easily be rendered a "thing of beauty" all the year round. Next the house, but not shown in the illustration, are two plants of *Lapageria alba* and *rosea*, which while taking up practically no space as regards the Ferns, are entirely at home, and at the proper season afford—*L. rosea* especially—a splendid effect of complimentary colour, when the rich red bells are contrasted with the mass of varied greens beyond. A stray branch of *Ampelopsis Veitchii* made its way through the lantern some years back, and now forms a myriad graceful festoons of delicate leafage hanging pendent from the roof, a runner having been carried along each sash-bar of the lantern with fine effect. *Charles T. Druery, F.L.S., F.R.H.S., Fernholme, Forest Gate.*



FIG. 42.—MAZEL'S HYBRID BEGONIA. (SEE P. 241.)

sister plants of this, beautiful but of less merit; while quite in the foreground, to the right, standing on the path, we catch a glimpse of its really marvellous offspring, *A. f.-f. plumosum Drueryi*, for which, though we may be accused of ranking our geese as swans, we have no hesitation in claiming a foremost place among the loveliest Ferns in the world. On the left, half-way down the path, is seen a fine plant of *P. acul. pulcherrimum*, rising high in the air, and surrounded by a host of smaller-growing varieties of numerous species. In the central rockery, partly hidden by the front members of the group, may be seen the pendulous tasselled tips of the fronds of a grand plant of the King of

with these in the upper right-hand corner are associated some seedlings of *A. f.-f. Kalothrix*, with its fine silky fronds, like "beautiful hair," whence its name. Curiously enough, though in its native haunts the common *Polypody* is by no means tardy in rising in the spring, many of its varieties do not begin growth until July, the old fronds, however, persisting until the new ones start. Hence the specimens shown are by no means at their best.

On the wall to the left of the house, but scarcely shown in the view, there is erected a long slate trough which accommodates a considerable number of the small-growing varieties at a very convenient height for inspection, and without hindering the

FORESTRY.

TREES FOR MARSH AND MOUNTAIN.

MANY of the estates in Great Britain and Ireland are of such a size, that the plantations combine the useful and ornamental to a larger extent than such as contain a larger area, and where many of the woods are planted with the view of turning marsh and mountain land to better account. But we occasionally hear complaints that plantations do not pay, so that we shall briefly glance at a few salient points in explanation of the reason. In the first place, then, when plantations are formed for ornament and utility combined, they are planted with a mixture of useful and ornamental trees, at a cost of about £10 per imperial acre, and I need hardly say that

such plantations should be well handled in the way of thinning and pruning as it becomes necessary, and until such time as the trees become thoroughly established. For want of this precaution many plantations are all but ruined during the first twenty years of their growth. How can plantations pay where the trees are allowed to waste their energies in the formation of a plurality of leaders at the top, as well as a superfluous number of side branches, all of which should either have been cut back or removed during the early stages of their growth? The pruning of forest trees, when requisite, should be commenced during their nursery career, and when trees are well managed in this respect during the early stages of their growth, and until such time as they become well established in the forest, they seldom require further pruning, with the exception, perhaps, of removing a double leader at the top.

On large estates that contain marsh, moss, and mountain land capable of being utilised for tree culture, the block, or group system of planting should be adopted, so that the several kinds of tree can be planted in groups by themselves on the class of ground most suitable for their requirements. The advantages of this system of planting are both simple and rational. In the first place, the trees can be planted at a distance apart of about 6 feet, or at the rate of about 1210 plants per acre, and allowed to grow up like a crop of corn until such time as the trees attain a profitable size, when they may be cut down, turned into cash, and the ground replanted. Heather ground on exposed situations had better be planted with hardy Coniferous trees, but reclaimed marsh ground will give by far the best return when planted with blocks of Poplar, Willow, Alder, and Ash. When these trees are so planted, they neither require thinning nor pruning further than the removal of a double leader at the top when it occurs during the early stages of the tree's growth, so that the only expense incurred during the growth of the trees is to keep the fences and drains in a thorough state of repair. All kinds of trees grown on this principle present fine clean stems, almost cylindrical in shape, or, at any rate, with very little taper, and they are free of knots or blemish of any kind, which enhances their value.

In view of the vast stretches of barren ground to be found in Great Britain and Ireland capable of tree culture, it is a matter of much importance that the selection of the most suitable trees for the different classes of soils and situations should be as perfect as possible.

Although Ireland at the present time has a smaller area under wood than other parts of the British Islands, yet the climate and soil are exceptionally well suited for the growth of trees, and there can be little doubt but that at one time the country was nearly one unbroken forest. In a paper before me I see that the county of Tyrone covers an area of 806,658 statute acres, or 3.9 per cent. of the total area of the country. According to the agricultural statistics (Ireland) for the last year (1891) there were 173,252 acres under tillage, 75,258 under meadow and Clover, and 327,494 under pasture, making a total of 576,004 acres of arable land, or 74.3 per cent. of the total extent of land in the county; 9056 acres, or 1.2 per cent., under plantations; 48,056 acres, or 6.2 per cent., under turf bog; 9908 acres, or 1.3 per cent., under marsh; and 99,612 acres, or 12.8 per cent., under barren mountain land. The remaining 32,619 acres, or 4.2 per cent., were returned as under roads, fences, &c. It will be seen that the extent of land under plantations is but small, while the land under turf bog, marsh, and mountain, a great deal of which is capable of producing a profitable crop of timber, occupies a large area. The cost of planting this class of ground in Ireland varies considerably owing to local circumstances, such as the amount of draining required, and the rate of wages in the locality. When planting deep peat bog in that county, where it was necessary to mix a little soil or clay with the staple at the spots where the trees were planted, I found the cost per statute acre to average from £6 to £8, even in cases where I used a

light railway, capable of being wrought by manual labour, to bring the soil or clay to the bog. Marsh ground, however, varies very much in its composition, and seldom requires to be supplemented with clay or soil, so that the principal expense incurred in preparing the ground here, is the amount of draining which it requires to render it dry and firm. This class of ground is capable of producing fine trees (hardwood and coniferous), either mixed or in masses, and the expense of the formation, under ordinary circumstances, will average from £5 to £6 per acre. I should state that deep peat bog or moss should always be planted with coniferous trees, with the hardy Birch as a first crop, although, at the same time, I may state that I have occasionally sown the seeds of these trees on the spot where the trees are to remain, which is a much cheaper method than planting; but, of course, it takes a longer time to establish the plantations. With regard to barren mountain ground, coniferous trees, as a general rule, are the best; but in all cases where the soil is of a calcareous nature upon the mountain limestone rock, and contains some 20 per cent. of lime, the Larch should not be planted, although in most cases it is by far the best tree to give a quick and profitable return. *J. B. Webster.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

GESNERAS.—Winter-blooming kinds of the Zebra section, if not already occupying the pots in which it is intended they should bloom, may be shifted into the same as soon as possible. In cases where several are grown together, 8 or 9-inch pots may be used; but for single plants, 5 or 6-inch will be large enough. Keep the foliage free from all insect pests, such as mealy-bug, &c., for if these be allowed to infest the plants, the foliage, which is so effective when well grown, will speedily lose its attractiveness. When the pots are found to be well furnished with roots, after their final potting, apply clear manure-water once or twice each week. Grow the plants in an intermediate temperature during the summer and autumn months, and they will become more sturdy than if grown in a higher temperature. Summer-flowering kinds, such as *G. Cooperi*, *G. glloxiniæflora*, &c., will soon have finished flowering, and when such is the case, and the plants show signs of resting, water should be applied in less quantities as long as any of the leaves retain vitality, but as the tops die down, all watering must be discontinued. The tubers may then either be allowed to remain in the pots, or shaken out, and placed in dry sand, but in either case they should be wintered in an intermediate temperature.

GLOXINIAS.—Plants raised from seed this season, and which are intended to bloom during the autumn, should be encouraged as much as possible, and should the pots in which they are growing not be large enough, lose no time in moving them into larger ones. Grow them well up to the glass, and in a nice growing temperature, so as to encourage a sturdy habit of growth, and plenty of substance in the foliage, as this is very essential, especially in the case of late-blooming plants. Any which have been raised from leaf-cuttings this season should be encouraged to make growth as long as possible, so as to increase the size of the tubers, as the larger the latter become, the better they will bloom next season. Tubers which were started early in the season will ere this have finished blooming, and have completed their growth; afford no more water than is necessary to keep the leaves from becoming shrivelled, and when the foliage turns brown, withhold water altogether, leaving them either in the pots or in dry sand, keeping them during the winter months in an intermediate temperature.

DOUBLE PRIMULAS.—Plants that were propagated from lateral growths during the early part of the summer, will now be well rooted, and should be repotted in well-drained pots, letting the plants well down in the pots, so that the base of the leaf-stalks of the lower leaves will be in the soil. Afford the plants a rich and open compost, consisting of two parts rich loam, and one each of decayed manure and leaf-soil, with sand in quantity sufficient to keep the soil porous. Grow the plants well up to the

glass, and when the weather is favourable, give abundance of air, so as to encourage sturdiness of growth.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

POT-VINES.—These should be afforded all the light and air possible, in order that well-matured canes may be secured. A dry circulating atmosphere will also conduce to the same end, but the plant should on no account be allowed to suffer for lack of water at their roots. If natural or artificial manures have been employed in stimulating growth, these may now be discontinued, except in the case of canes for fruiting next year; these may be assisted with superphosphates. Stop all growths, and when the wood is fast ripening, allow the night temperature to fall to 50°, with a rise to 80° on sunny days.

FIGS in pots or borders that are forced early, should now be induced to ripen their wood, and, this obtained, allowed to rest by lowering the temperature of the house, and withholding moisture until the leaves have fallen. Pot-plants may be stood out-of-doors in a light, airy position, and supplied with water while their foliage remains green.

ORCHARD-HOUSE.—Continue pinching all shoots of Plums, Apples, Pears, and Apricots, and if growth be rather green, maintain a little warmth in the heating apparatus during the day, to assist its maturation. All syringing may now be dispensed with, provided the plants are clean; but where there is any red-spider, the garden-engine may be brought into play occasionally, using soapy water, which should be applied with considerable force. Turn those in pots out of the house when the fruits have been gathered, giving them a situation where the natural factors of growth-maturation can have full scope, standing them on boards, slates, coal-ashes, or gravel, but not on soil, and attending to their requirements in the way of water. Like fruiting-canines of pot-Vines, these, too, may have an occasional pinch of phosphate applied to each as a top-dressing to the soil, and be washed in by the watering. Where the trees are planted in borders, give them the same stimulants, if they appear to need it, and keep the air moving, and as dry as circumstances permit. Any plants which may have failed to carry a crop this year, and, in consequence, are making too succulent wood, should be root-pruned at once. By doing this now, the trees will get a check to their growth, and will be able to make fresh roots, and in all likelihood ripen their shoots before winter, when a crop for the coming year will be ensured. Look over the fruit every other day, and gather any that is ready. If fruits of Apples and Pears leave the trees when brought to the horizontal with the hand, it is a sure indication that they are fit for removal to the fruit-room.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

PEAR TREES.—These being very thinly cropped this season, the gardener should take care and lengthen out the supply of fruits as much as possible with the early ripening varieties by timely attention in gathering, taking a few at a time of the ripest fruits every few days, and laying them in the fruit room. Jargonelle is the first good Pear, and when well grown it is large in size and of good flavour. Williams' Bon Chrétien follows this one. These, as well as some others, should not be left on the trees till fully ripe, or the flavour will be spoiled. Water borders of Pear trees copiously, especially if the soil is of a light and dry nature, and the fruits will not only be large but juicy. All trees with heavy crops should be freely thinned, pulling off all small and deformed fruit, and those that are badly placed. Pears on dwarfing stock should receive a fresh mulch, and be assisted with manure water, &c., should the crop be a heavy one. If the summer pruning is not yet finished, no time should now be lost in pushing on with this kind of work, and the shoots being now firm they may be shortened back closer than is desirable earlier in the season without any risk of the bottom buds pushing into growth. This will be better for the trees than early and hard pruning and pinching, but where the trees grow too strongly, and from that cause remain unfruitful, root pruning at the proper time should be practised.

RASPBERRIES.—By this date the fruits of most summer varieties will be gathered, and the old canes, if not already removed, should be cut away, so that light and air may reach next year's fruiting

canes. Keep the plantations clear of weeds and useless suckers. The nets which have been in use should be tied up when perfectly dry, and ticketed, and temporary frame-work should be put aside for next year's use.

ORCHARDS.—The grower will do well to keep the hoe in constant use for the destruction of weeds before they seed. But this sort of work is often much neglected, and the fruit-bushes, where these exist, get choked with weeds; and, to make matters worse, with a view of burying this useless rubbish at the end of the season, digging is practised, and other rough-and-ready means employed, and the surface-roots of the trees and bushes get damaged. Such a practice, it is needless to say, cannot be too much condemned.

THE APIARY.

By EXPERT.

AUTUMN-FEEDING.—Where insufficient honey has been left in the body of the hive for stocks to winter on, slow-feeding should be the rule for the next three or four weeks. This is done to induce the bees to continue rearing brood as late as possible. If they were fed up quickly at once, egg-laying would cease, and the workers called upon to do all the extra labour of again storing food in place of that taken away by the beekeeper, would be worn out, and therefore unfit to carry on the work of the hive the following spring. Dry sugar (Porto Rica) is very convenient for slow-feeding, and most suitable for this time of year. It should be placed in a feeding dummy, Simmon's pattern, which, if made an inch wide, will hold 3 lb., and is hung in the hive next the frame, as close to the brood-nest as possible. If dry sugar is not used, syrup must be made as in spring, and given in a bottle or other slow feeder. At the end of September all feeding should be completed, by giving in one dose syrup made by boiling for a few minutes 5 lb. of white lump or granulated sugar to about 1 quart of warm water, so as to make up each hive to the required weight of 20 lb. of stores. Pure cane sugar is, without doubt, the best to use for feeding bees, but the writer has lately been informed, on good authority, that it is almost an impossibility to get it in this country, as all sugars now consist of an admixture of Beet in a larger or smaller degree. It is, therefore, important to pay a good price, and get the best article, which it is reasonable to suppose will contain the smallest proportion of Beet. It will probably not cost more in the end, as the better quality will possess a greater sweetening power, and more water can be used in making the syrup.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

THE INTERMEDIATE-HOUSE.—*Cattleya marginata*, *Lælia pumila*, and its varieties, are useful plants for flowering in the months of October and November, and drought at the root would be very hurtful to these just now whilst they are growing apace. Being very dwarf in habit, they should be grown in shallow pans or baskets, and placed near the roof-glass, either in this, or in the *Odontoglossum*-house. All of them are subject to yellow thrips and a species of scale, and they should be examined at intervals for these, and the leaves sponged. *Lycastes*, and especially *L. Skinneri*, are not Orchids that require a great deal of careful watering at the roots; but occasionally some weak manure-water may be afforded. *Oncidium sarcodes*, on the other hand, if the pans, &c., are well-drained, seems to thrive if watered rather heavily while it is growing. This is another plant which, when weakly, requires frequent cleaning to remove thrips and scale. The intermediate-house usually contains a number of miscellaneous plants, of which are some *Oncidiums* showing for flower, viz., *O. varicosum*, *O. tigrinum*, *O. ornithorrhynchum*, *O. unguiculatum*, *O. macranthum*, *O. incurvum*, *O. Forbesii*, and *O. crispum*; the spikes of these, which may now be looked for, should be kept free from thrips, pests which will, in a few hours, cause the flowers to become malformed, if they do not destroy them wholly.

THE SHOW-HOUSE.—Our show-house has not looked brighter at any time during the season than at present; especially noteworthy is the colouring of the lip of some *Cattleya gigas* of the *Sanderiana* type. It is a species worth taking the trouble to flower well, and is a queen among *Cattleyas*. Then there is the more delicate-tinted *C. Gaskelliana*, and

the rich and variable colours of *C. Eldorado splendens*; *C. aurea Dowiana*, too, stands out conspicuously—all these grand subjects causing the more sober *C. Harrisoni*, the earliest of which are now coming in, to pale before their brilliancy. Another beautiful colour seldom seen in Orchids is that of *Vanda cœrulea*, a quite indispensable plant, that everyone should grow in numbers; the roots of this species should be watered twice daily. The beautiful yellow flowers of *Sobralia xantholeuca* are very telling, as are those of *S. alba nana*, whose pure white sepals and petals and yellow lip remind one of a flower of *Thunia Marshalliana*. Then there are *Pilumna fragrans*, *Miltonia vexillaria rubella*, *Barkeria spectabilis*, the earliest of the genus; *Mormodes citrinum* and *M. pardinum*, *Odontoglossum Harryanum*, and various others, which help to give brightness to the display. The fragrance of some of these species form an attraction for bees, which should be excluded by tacking thin gauze over the ventilators, otherwise they soon destroy the beauty of the flowers by fertilising them.

GENERAL WORK.—*Masdevallias* standing in need of re-potting should be taken in hand at once; also plants of *Odontoglossum crispum*, and plants of similar-growing species in need of re-potting, so that this operation may be finished off by the middle of the next month. At this time of the year, new supplies of half-decayed tree leaves should be placed on the floors, the walls lime-washed, all necessary cleaning done, and the house made sweet and wholesome. The re-potted plants should be very carefully watered. At this time of the year the *Odontoglossums* delight in the dewy night air, which should be admitted liberally.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

BEDDING PLANTS OF DISTINCT AND TELLING COLOURS.—The present is a good time to note the most suitable plants for massing, as a guide for planting another year. With us the masses of crimson *Henri Jacoby* and *Tom Thumb* *Pelargoniums*, pink *Christine Pelargonium*, *Golden Queen Viola*, mauve *Tom Thumb*, and the *Zoo Ageratum*, deep blue *Lobelia primula magnifica*, and *Salvia patens*, are very effective at this part of the season; *Bijou de Lyons Ageratum*, white, is a most valuable white-flowering bedding plant, compact, and yet very free growing. Silver-leaved, bronze, and tricoloured *Pelargoniums*, intermixed with yellow and blue *Violas*, *Phlox Drummondii*, *Heliotrope*, *Mignonette*, *Cineraria maritima*, *Perilla nankinensis* (in beds side by side), *Begonias*, having a groundwork of silver *Sedum*, together with many oblong and hexagon-shaped beds filled exclusively with carpet-bedding plants, in variety, look well, and are quite to be relied on to make a fine display. Cuttings of these are now plentiful, and their removal is a matter of necessity, so that propagation may at once commence. This cutting into shape, and trimming of every description of bedding-plants, the removal of yellow leaves and spent flowers, must receive frequent attention. By carrying out a system of pinching the shoots, and removing spent-flowers and seed-pods, the flowering period of all subjects can be much extended, the young shoots resulting yielding a succession of flowers until the plants are spoiled by frost. When *Phloxes*, *Pentstemons*, *Antirrhinums*, and similar plants, are pinched or cut-back, they break into fresh growth lower down the main stem, and flower much later than do the shoots that were not pinched; and, although the side or lateral growths do not produce such fine flowers as those that came earlier, loss of size is made up in quantity.

SUB-TROPICAL PLANTS require but little attention from this date until the approach of frost renders the removal of subjects intended for use another year to the protection of a greenhouse necessary, further than the pinching of the points of extra strong-growing plants, and putting additional ties to those needing them. Plants of *Solanum marginatum* intermixed round the sides of the beds with *Tobaccos*, *Melanthus major*, *Cannas*, &c., are very telling, their large silvery, prickly leaves contrasting effectively with the surrounding plants.

FOLIAGE BEDS.—These are rich in softness and brilliancy of tints, the silvery or creamy-white foliage of the *Mesembryanthemum cordifolium variegatum* showing off to great advantage when contrasted with the bright-foliaged *Alternanthera amœna* and *A. versicolor grandis*, which blend with

the soft golden-yellow *Pyrethrum*, the grey *Echeveria secunda glauca*, the blue *Kleinia erecta*, and the green and silvery *Sedums*. These need frequent thinning out and clipping into shape, so as to confine each colour to its own panel or boundary-line, so as to properly define and preserve the character of the several designs, perfect neatness of the whole being the great charm of carpet or geometrical bedding.

GENERAL WORK.—This will consist in pushing forward the propagation of all kinds of bedding plants that are not yet put in, the completion of the layering of *Carnations*, the insertion of Pink cuttings in handlights or frames, as recommended at p. 129 of the *Gardeners' Chronicle* for July 30. Cuttings of *Alternanthera*, *Verbena*, *Mesembryanthemum*, *Ageratum*, *Salvia patens*, and *Lobelia* may be struck in a close moist frame, cuttings of the young growths from the bottom of the plants only being used.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

LETTUCE.—If salads are required in quantity, preparation should be made for the late supply from the open ground. If seed was sown as previously advised on p. 69, there will be no lack of materials for planting out; and though these plants will be too large to remain out in severe weather, they will lift readily into cold frames, or even under light sheds. If planted closer than usual, and under a wall, they stand a few degrees of frost, and there is less trouble in protecting. A few beds of seed sown now of the hardy winter varieties will be found serviceable, as some of the plants, when large enough, may be pricked out into frames for the midwinter supply, or given a warm border, and protected with frames or mats for this purpose. Sowing in drills is the best method, as in a mild autumn those not transplanted often get a usable size. Other beds should be sown broadcast on a sloping border; protected from north-east winds, these will give a supply early in the spring, and the largest may be lifted and planted in frames. These seed-beds should be protected in severe weather, when not sown on a sheltered border. The best varieties for winter use are *Brown Cos*, *Lee's Hardy Cabbage Lettuce*, and *Hammer-smith*—the latter stood all last winter on a sheltered border without injury; and for early spring use, the *Cabbage* varieties are most useful. By sowing these varieties at this date, much time is gained.

ENDIVE.—This the most useful salad plant other than Lettuce for winter use should be planted out as early as possible, and if a large number is required, no time should be lost in sowing a late lot for planting in frames. The seeds sown earlier will give the winter supply, and a late sowing now will form a succession. If some plants of the July sowing are planted out on a warm border in richly-manured land, they will be large plants, ready to blanch, before protection is required, when they may be lifted, or pots placed over them. The *Green Curled* and *Improved Round-leaved Batavian* are the best varieties—the first for early use, and the *Batavian* for later, the last-named being very hardy and a good keeper. *Corn Salad* should be sown in quantity if liked, and it is always useful, as it stands severe weather.

RADISHES.—These, when sown at the end of this month, last much better than those sown during the summer, and are more succulent. The *China Rose* is an excellent autumn variety; and for the winter, a sowing early in September will give a long supply, using the *Black Spanish* variety.

CAULIFLOWERS.—This is an important crop, and though the exact date of sowing cannot be advised, as in cold districts it may be necessary to sow before this date in many gardens, a date between the 20th and 30th will be found a good time. Sow in good soil, and if at all dry, thoroughly saturate the soil previous to sowing. I find the growth is much more sturdy if the seed-bed is made firm where the soil is light, taking care to give plenty of room, to prevent drawing. Some growers of late years have discontinued sowing Cauliflower seed in the autumn, preferring to do so in heat early in the year. I have tried both methods, and prefer the old one, as the heads are finer, and there is no trouble in pricking off and hardening off; and when not sown too late, and the plants are planted out on a sheltered border, and a few in cold frames or potted up, there is generally good material ready to plant out early in the spring. I use *Walcheren* or *Veitch's Pearl* in preference to *Early London*.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY	AUG. 29—Cresswell Horticultural.
TUESDAY	AUG. 30 { Brighton and Sussex New Horticultural (two days).
WEDNESDAY	AUG. 31 { Bath Floral Fête (two days). Bishop's Stortford Horticultural. Harpenden Horticultural.
THURSDAY	SEPT. 1—Oxford Horticultural.
FRIDAY	SEPT. 2 { National Dahlia at Crystal Palace (two days).

SALES.

MONDAY,	AUG. 29 { Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY	AUG. 30 { Dutch Bulbs, at Protheroe & Morris' Rooms. Clearance Sale of Greenhouse Plants, at the back of Leigham Cottage, Balham High Road, at 12 o'clock, by Protheroe & Morris.
WEDNESDAY,	AUG. 31 { Dutch Bulbs, at Protheroe & Morris' Rooms. A Very Extensive Importation of Bulbs, from Holland, at half-past 12 precisely, by Mr. Stevens.
THURSDAY,	SEPT. 1 { Dutch Bulbs, at Protheroe & Morris' Rooms. Established and Imported Orchids, Stove and Greenhouse Plants, &c., at half-past 12 precisely, by Mr. Stevens.
FRIDAY,	SEPT. 2 { Dutch Bulbs, at Protheroe & Morris' Rooms. Orchids from Mr. F. Sander.
SATURDAY,	SEPT. 3 { Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—60°.2.

Chiswick Conference.

The Conference on Begonias and Apricots, held on Tuesday and Wednesday last in the Chiswick Gardens, in connection with an exhibition of those plants, was one of the most interesting and instructive of the series, though not so largely attended by the public as could have been desired. In the whole range of horticulture, there is nothing more remarkable in its way than the evolution of the present race of tuberous Begonias, and the formation of new forms of equal morphological value, not only to species, but even to that of a genus. The history is well-known throughout most of its stages. It has formed the subject of a special literature, amongst which we may specially indicate some papers of M. DUCHARTRE, and an excellent memoir by the late M. FOURNIER, in the *Journal de la Société Centrale d'Horticulture de France*, as well as Mr. B. WYNNE'S useful work on the subject, published at the office of the *Gardening World*.

The history and progress have, moreover, been repeatedly summarised in our pages, particularly on August 26, 1882, p. 262, and on November 10, 1888, p. 534. On the first-named occasion we wrote with reference to the changes that had been effected:—

"A more complete upset of morphological proprieties can hardly be imagined, and yet in the midst of this wild confusion—a confusion far from being incompatible with beauty and symmetry—the botanist sees first principles only the more firmly vindicated; the exception does not vitiate, it confirms the ideas of original unity of type and sex, community of origin, and adaptive variations."

Since these words were written, continued progress from the florist's point of view has been made, though there is not much that is of primary importance to be added to the botanical history. The introduction by Professor BAYLEY

BALFOUR of *Begonia socotrana* from Socotra, of all unlikely places, has, indeed, been the means of creating some hybrids as remarkable in their way as any that have preceded them, but it has not greatly affected the morphological history. From a florist's point of view, there has been, thanks to the labours of LEMOINE, MALET, and other continental raisers, as well as to our own hybridisers, steady progress; habit, form, colour, have all been improved; bedding varieties at the hands of Messrs. SUTTON, of VILMORIN, and of others, have greatly improved, and have a great future before them; the winter-flowering section in the hands of Messrs. CANNELL have also made great strides.

To Messrs. VEITCH belong the honour of introducing most of the original types, and of testing their value by hybridising and crossing them; and the history of the work done by the great Chelsea firm was pleasantly told on Tuesday by Mr. HARRY J. VEITCH. He was followed by JOHN LAING, of Forest Hill, to whose foresight, energy, and skill the development of the tuberous section is mainly due. His paper, which will be published in full in the *Journal* of the Society, will always constitute a very important record. Mr. CANNELL related his experiences with the winter-flowering section; and Mr. WATSON, in a few, well-chosen, crisp sentences, gave an outline of the botanical history of the genus, his remarks being illustrated by a very large illustrative collection forwarded from the Royal Gardens at Kew. We can hardly over-estimate the benefits which horticulture derives from the co-operation of Kew on occasions like these. The Kew collection contained precious links in illustration of the history, and was still more important to those who have eyes to see, as indicating resources and possible future developments, which, if turned to account, must eventuate in results far more extensive and varied than have yet been attained. The possibilities, indeed, seem endless for those who will not be contented to run always in the same grooves. Messrs. VEITCH also exhibited a very valuable series of species and hybrids, the names of which are given in another column.

It is singular that several of the original species which formed the starting points have, apparently, entirely disappeared from our gardens, the parents having been so completely superseded by their more attractive progeny. Historically this is unfortunate, but less so than it otherwise would have been; first, because the plants, unlike Orchids, have not been exterminated in their native haunts, and can, and probably will be, re-introduced; and next, because the great advance has been made within the last quarter of a century, when science has had her say in the matter, and as one result, a much more complete record, pictorial and otherwise, has been made, than was the case in earlier times. In former days, and (utterly erroneously, as we believe), in the supposed interests of trade, the source of novelties, and the origin of crosses, were often carefully concealed, even if they were not deliberately misrepresented.

When the hybrid Begonias were first introduced, we wrote and spoke of them as "the coming flower." Our prediction has been abundantly verified, and this circumstances may, perhaps, serve as our excuse if we counsel for the future an attempt at greater variety and hardihood, the formation of new races, in fact, and the cessation of any attempts at making the flowers any larger than they are at present, and specially that hybridisers and cross-breeders will follow the natural lines of the flower, enhancing and emphasising them, rather

than attempt to reduce them all to one uniform circular outline, and creating flowers which might (so far as form is concerned) be Hollyhocks or double Balsams, or Camellias, anything rather than Begonias.

The second day's proceedings comprised papers on "Apricots and Plums," the author of the indispensable *Fruit Manual* being in the chair. M. F. JAMAIN contributed a paper on "Apricots as Grown in France," together with a classification of the kinds grown.

Mr. SMITH, of Mentmore, read a paper on the "Culture of Plums for Market," in which he expressed the opinion that if the right sorts were grown, and sufficient care exercised in uniform sampling and grading for market, this branch of the business might be made profitable, though its fluctuating nature was made apparent by the circumstance that he had obtained, under different conditions, prices varying from 1s. 3d. to 18s. or even 25s. a bushel.

Mr. RIVERS' paper on "Dessert Plums" was, in the main, a catalogue, with comments on the best varieties. Mr. RIVERS' own services as a raiser were justly acknowledged by several of the speakers.

Adverting to the provoking death of the branches of the Apricot, especially the Moor Park variety, some of the speakers, making use of ordinary garden-phraseology, in order that they might the better be understood, attributed it to the "contraction of the sap-vessels from frost." The frost no doubt is an efficient cause, but is it not time that we ceased to try to hide our ignorance of vegetable physiology? Are there any such things as "sap-vessels?" We should say certainly not, in the sense in which the term is generally employed; and that "contraction," again using the term in the garden-sense, is non-existent. A little elementary knowledge of vegetable anatomy and physiology is still a desideratum in the education of a gardener. The phrase doubtless originated from the assumption that the circulation of the blood in animals and the circulation of the sap in plants were identical phenomena, and carried on in like manner, assumptions that are now, and have been for many a year, known to be false.

BEGONIAS.—Our illustrations this week (figs. 41, 42, 43, 44) show several of the species of *Begonia* as first introduced. They were the parents of the tuberous section, and, as elsewhere remarked, have disappeared from cultivation.

BEGONIAS AT COWDRAY PARK.—The following note has been received from Mr. W. GOLDBRING:—"In the gardens of Lord EGDMONT'S beautiful seat at Cowdray Park, Midhurst, the tuberous Begonias seem to be a specially favoured class of flowers, and Mr. GEESON is one of the few gardeners I know who spend their leisure in a systematic way in the improvement of such a class of plants as Begonias, which, as everyone knows, have been for years the specialties of some of the great London nurseries. But Mr. GEESON does not mind this, but works on, and in his own way with the particular strains he has raised until now, the fame of the Cowdray Begonias has spread widely. I took an opportunity of seeing them on the occasion of the Cowdray gardens being open to the public through the kindness of Lord EGDMONT, and these Begonias struck me as being one of the most remarkable points in a large garden full of fine landscape effects and evidences of high-class culture. The Begonias have houses and frames to themselves, but those under glass were somewhat past, and not so noteworthy as some hundreds, perhaps thousands, of seedling double varieties in open air beds where Mr. GEESON has the cream of his collection. Here you can see



DECORATIVE FERN-HOUSE.

crowds of new seedlings, representing the perfection of a double Begonia, dwarf sturdy plants with broad thick heavy foliage, and holding up on stout stems, great double flowers, many as big as Hollyhocks, ranging in colour from pure white through yellows to salmons, pinks, scarlets, and deep crimsons. The preponderant tints are crimsons and pinks. The yellows are fewer, but the few are superb, and so are the whites. As one sees these double varieties in one long and broad mass lit up by such varied hues of soft and rich tones, one feels he is enjoying a new phase of open-air garden beauty such as a few years ago we should not have supposed possible, and probably, in course of time, the exposure of seedling strains to the open will result in a harder race of tuberous Begonias than we have now, suitable as is the Pelargonium for massing in beds. The Cowdray Begonias show what one man may do by patient and intelligent hybridising and skilful culture. There are other things worthy of note at Cowdray, such as *Streptocarpus* hybrids and *Fuchsias*, but I will confine this present note to the Begonias, which are alone worth a journey to see."

SHANKLIN HORTICULTURAL SHOW.—On Wednesday, August 17, a show was held in the beautiful grounds of Rylestone, by permission of M. SPARTALI, Esq., and proved one of the most successful that this Society has yet held. The collection of fruits were as good as have ever been shown in the island. Stove and greenhouse plants, groups, basket of plants for effect were very good. *Asters* and *Marigolds* were very nice; these are a specialty of the Isle of Wight. Mr. PRITCHARD, florist, Christchurch, exhibited a splendid collection of cut blooms of herbaceous perennials, and was awarded a Certificate. The show was honoured by a visit from H.R.H. the Duke of CONNAUGHT and Prince HERMAN OF SAXE WEIMAR and suite, Mr. W. DROVER, one of the judges, conducting the Royal visitors through the exhibition. Mr. W. DROVER presented Princess MARGARET OF CONNAUGHT, on leaving, with a beautiful bouquet.

BANFFSHIRE HORTICULTURAL SOCIETY.—The annual floral exhibition was held in fine weather in the Canal Park, Duff House, Banff, on Wednesday, August 17. The show was one of the largest that has been held under the auspices of the Society for many a year.

THE BRITISH PTERIDOLOGICAL SOCIETY.—This Society, which has been formed for the purpose of fostering the study of our British Ferns and their varieties, and as a means of communication between those who pursue this very interesting branch of native botany, held a well-attended meeting on Monday, August 1, at the Institute, Bowness, Windermere, on the occasion of its first annual gathering. The Society, which has so far been known as the Northern Pteridological Society, was formed by a number of the local Fern cultivators and hunters in the lake district, who had long felt the need of some controlling body of experts which would lend its aid in the way of properly naming and classifying the varietal forms, of which so many have been found in that region, and would also act as a centre of communication between those who were interested in the pursuit. At the meeting, however, at which Dr. F. W. STANSFIELD, one of a third generation of ardent Fern lovers and cultivators, presided, it was felt, that notwithstanding its local origin, as it was first in the field, there were many reasons for enlarging its scope, and therefore giving it a more general name. The Society proposes to hold an annual meeting and conference upon the first Monday in August, and this was the first of such meetings. At these conferences, it is their wish to have fronds of such new forms of British Ferns as may have been found or raised in the preceding twelve months sent in for judgment and naming, so that some better principles may be brought to bear on their nomenclature than has hitherto been in vogue. It is notorious that many forms exist in different species which are identical in type,

but which, having been named by various authorities, are confusingly different; other names than descriptive ones, such as *Smithii*, *Brownii*, or *Robinsonii*, which convey no idea at all of the plant, will, in future, not be sanctioned, the name of the finder or raiser being appended to the descriptive one in plain English. Dr. STANSFIELD gave a very able address, in which he called upon the members not merely to observe but also to record their observations for the general benefit, much valuable information becoming scientifically valueless for want of confirmation in the first place, and due record in the second. Mr. CHAS. T. DRUERY, F.L.S., followed on similar lines, giving a short sketch of the aposporal and other discoveries, by way of indicating what can be done by close investigation. As the subscription is a very small one, being merely intended to cover expenses of rules and inter-communication, the society hopes that it will receive the warm support of the many enthusiasts in British Fern culture; and the President, Dr. F. W. STANSFIELD, Derby, and Mr. C. T. DRUERY, Fernholme, Forest Gate, Essex, one of the Vice-Presidents, will be happy to assist the Hon. Secretary, Mr. GEO. WHITWELL, Serpentine Cottage, Kendal, by giving any desired information to this end. The next meeting will be held at Lancaster. On the day following the meeting, an expedition was made by a number of the members to Langdale, some fifteen miles from Windermere, and with very happy results, Mr. WHITWELL, the Secretary, finding a very neatly tasselled form of *Lastrea pseudo-mas*, *L. montana angustata*, and last, but by no means least, a finely-crested form of *Hymenophyllum unilaterale*. Mr. CLARK found *L. montana truncata* and congesta, and Mr. DRUERY a prettily variegated form of the same species. As this species was for many years considered invariable, it is certainly a good augury for the success of the society, that their members can discover four good forms in one outing, together with others of even greater rarity. If the Society will take steps to prevent the wholesale uprooting of Ferns they will effect much good.

THE POISON OF THE YEW.—In a communication to the *Times*, Lieutenant F. J. M. STUART WORTLEY summarises the experiments he made in the laboratory of the Agricultural College at Downton, with a view of determining the poisonous principle of the Yew. Lieutenant STUART WORTLEY had been told that the male Yew was poisonous, but that the female Yew was harmless to cattle, and in order to test this "theory," he made the experiments which are detailed in the *Times*, oddly enough. We are really progressing, it would seem, when the details of chemical analysis and procedure are published in the ordinary newspapers. As a general result, Lieut. STUART WORTLEY says that "taxin," the supposed poisonous property, is contained chiefly or entirely in the male Yew, so that if this be so, the female Yew may safely be planted as an ornamental tree in parks and pastures where cattle are turned out; but how are we to know, before flowering, which is the male and which the female? We cannot chemically analyse all the plants before planting them. Occasionally, as we know, the female Yew produces male flowers also. Does it, then, also form taxin? By analogy we should not be surprised, as an occasional occurrence, to see a male Yew producing fruits, or *vice versa*. The fullest account of the poisonous properties of the Yew that is at hand is that contained in M. CH. CORNEVIN's *Plantes Vénéneuses*, 1887, who in addition to recording his own experiments, summarises the experience of others from the earliest times. He makes no mention, however, of any difference between the male and female trees, although he does mention that 4 decigrammes of the pollen administered to a sparrow produced no effect. M. CORNEVIN himself states that the young leaves are comparatively harmless, but as they get older and assume the deep green colour of the adult state their poisonous properties increase, as indeed might be anticipated. Julius Cæsar de Bell. Gal. lib. 6, cap. 30, records that King CATIVOLUS killed himself with the Yew. "*Rex Cativolus taxo, cujus*

magna in Gallia Germanique copia est se exanimavit." Unfortunately, we are not told whether the king made use of the male or of the female tree! Ovid had so bad an opinion of the Yew that he considered it to form part of the vegetation of the infernal regions, but he drew no distinction between the sexes. Perhaps at that time they were both bad alike.

"THE FLORA OF BRITISH INDIA."—This important publication, prepared by Sir JOSEPH HOOKER, and begun in 1872, is now within a short distance of completion. The part just issued contains the Scitamineæ, monographed by Mr. BAKER; the Iridæ, Amaryllidæ, Liliæ, Commelinadæ, and some other orders, by Sir JOSEPH HOOKER, who also furnishes, in conjunction with Signor BECCARI, the Palmæ. Of large orders there remain now to be dealt with only the Aroids, the Cyperadæ, and the grasses, the last a formidable group; but the same zeal and judgment that have carried the work so far, will, we trust, insure the completion of this most useful work.

UNUSUAL VARIETIES OF ROSES.—In the collection from MM. SOUPERT & NOTTING, of Luxembourg, staged last July in Brussels, we noticed some uncommon Roses introduced in 1890–91. Here are those of 1890:—Clotilde Soupert, Duchesse Marie, Salviati, Gloire des Cuivrées, Jeanne Guillaumen, Madame Moreau, Madame Sadi Carnot, Madeline d'Aoust, Madame Olga, May Rivers, Sappho, Souv. de Worton, The Queen, Augustine Guinoisseau, La France de '89, Gloire de l'Exposition de Bruxelles, Gustave Piganeau. Those of 1891 were:—Charles de Franciosi, Christine Noisè, Comtesse de Vithum, Comtesse Iva Stahremberg, Elise Fugier, Madame Creux, Princesse de Sarcina, Souv. de Clarvaux, Souv. de Lady Ashburton, Danemark, Gustave Régis, Madame Angélique Veyssat, Pearl Rivers, Triomphe de Pernet père, Joseph Degueld, and Madame Pierre Liabaud.

"FORAGE PLANTS OF AUSTRALIA."—Mr. F. TURNER has, under the auspices of the Department of Agriculture, New South Wales, published a valuable account of the forage plants of Australia, accompanied by rough but characteristic illustrations. The most numerous and valuable forage plants, other than grasses, of the arid districts of the interior are the various Chenopods, of which several are here figured. Casuarinas do not seem to be very succulent, but their foliage contains citric acid in combination with lime, which renders them very attractive to cattle. For purposes of timber and of shelter these trees are very valuable.

SCENT-FARMING.—This new colonial industry appears to be attracting a good deal of attention in New South Wales. The *Agricultural Gazette* of this colony has recently been urging the institution of experimental farms similar to that which has been established at Dunolly, in Victoria, so successfully. The *Gazette* points out that in scent farms large quantities of waste material from nurseries, gardens, orchards, and ordinary farms might be profitably utilised, whilst occupation would be found for some who are unfit for hard manual labour.

BI-SEXUAL CONE OF PINUS THUNBERGII.—In the current number of the *Tokyo Botanical Magazine* is an illustration showing two cones of this species. In one case, the anthers are at the distal extremity and the seed-scales at the base, whilst in the other the seed-scales are at the apex and the anthers at the base. A similar change was described by us in these columns for June 30, 1883. It is curious to see how much more certain species are subject to these and similar changes than are others. Can it be that they are natural hybrids, or are they species still in the forming stage, and not yet fixed?

PASITHEA CÆRULEA, of which Sir JOSEPH HOOKER gives, in the August number of the *Botanical Magazine*, an illustration and an amended generic description, "was discovered and described by FEUILLÉE, a Franciscan friar, mathematician and botanist, born at Mane, in Provence, in 1660, who

was commissioned to travel in South America for scientific purposes by Louis XIV. He published in 1714 the account of his travels and discoveries, calling himself "R. P. FEUILLÉE, Religieux minime, Mathématicien, Botaniste de sa Majesté." His description of the plant is a short one, but the figure is good, and he gives it the native name of "Illus," adding that it inhabits the mountains of Chili in latitude 37° from the South Pole. FEUILLÉE first visited the West Indies, and then went down the western coast of South America, travelling in Peru and Chili, where he discovered *Datura arborea*. On his return to France he was liberally pensioned by the king, who built an observatory for him in Marseilles, where, worn out by his labours, he died in 1742. He is said to have been a man of modest, simple character, as becomes an ecclesiastic and true philosopher. His original drawings, many of which are unpublished, are preserved in the Bibliothèque Nationale in Paris. Since its discovery, *Pasithea cœrulea* has been collected by many travellers, one of whom, BRIDGES, states that it is called by the Chilians "Espuela de Galun," the Gallant's Spur, but does not account for the name. RUIZ and PAVON gave it the vernacular name of "For de Cuentas," and state that the root smells like that of *Iris florentina*. According to MOLINA the "bulbs" are excellent food, boiled or roasted, and make a pleasant soup.

HABENARIA.—Dr. KRANZLIN has issued, in ENGLER'S *Jahrbücher*, a complete monograph of the species of this genus. No fewer than 347 species are described.

CANADIAN MOSSES.—Professor JOHN MACOUN has published the sixth part of his *Catalogue of Canadian Plants*. It is devoted wholly to mosses, and has been compiled with the co-operation of Professor KINDBERG, of Linköping, Sweden, Dr. CARL MUELLER, of Halle, and other specialists. It is printed for the Government of Canada, and published by W. FOSTER BROWN & Co., of Montreal.

THE LATE DR. JAMESON.—We have received from our eminent colleague, M. PD. ANDRÉ, a cheque for 1 guinea on behalf of the fund instituted for the benefit of Miss JAMESON. We are precluded from further alluding to the subject this week, but shall revert to it on another opportunity. Sir JOSEPH HOOKER has also contributed £5 5s.

PLANT PORTRAITS.

BOMAREA FRONDEA, Mast., *Bot. Mag.*, t. 7247.—See *Gardeners' Chronicle*, vol. xvi., p. 669, fig. 102.

CAPPARIS FLEXUOSA, Vellozo, *Bot. Mag.*, t. 7248.

CATTLEYA AUTUMNALIS, le *Moniteur d'Horticulture*, August 10.

DAPHNE GENKWA, *Garden*, July 30, 1892.—Singularly like a *Lilac* in the flower.

DENDROBIUM WARDIANUM VAR. **ALBUM**, *Orchid Album*, t. 450.—Differs from the variety *candidum* in the absence of the purple spots at the base of the lip. In the present case the lip has still an orange blotch at the base.

EPIDENDRUM AMABILE, *Orchid Album*, t. 452.—A variety of *E. dichromum*.

EPIDENDRUM CAPATIANUM, Hort. Linden, *Lindenia*, t. 33.—See E. Godseffianum, Rolfe. See Rolfe in *Gardeners' Chronicle*, January 30, 1892, p. 136.

EPIDENDRUM INVERSUM, *Revue de l'Horticulture Belge*, August.

FURCRAEA PUBESCENS, *Bot. Mag.*, t. 7250.—This would be preferably written *Fourcroya*, a species with oblong lanceolate spiny-margined leaves and large erect panicles of bell-shaped greenish-white flowers, each with a long slender hairy tube.

IRIS LORRETI, *Bot. Mag.*, t. 7251.—Foster in *Gardeners' Chronicle*, August 6, 1892, p. 152.

LÆLIA AUTUMNALIS ALBA, *Orchid Album*, t. 451.—A pure white variety grown in the nursery of B. S. Williams & Son.

LÆLIO-CATTLEYA, DIGBYANA × MOSSIE, Rolfe, *Orchid Album*, t. 449. See *Gardeners' Chronicle*, June, 1889, p. 742, and fig. 111.—A cross between *Cattleya Mossie* and *Brassavola Digbyana* raised by Mr. Seden.

LYCHNIS FLOS CUCULI "ADOLF MUSS."—A double-flowered variety. *Gartenflora*, August 1.

MILTONIA PHALÆNOPSIS, Nicholson, formerly called *Odontoglossum Phalænopsis*. *Lindenia*, t. 334.

ODONTOGLOSSUM EXCELLENS × VAR. **DELLENSE**, *Lindenia*, t. 335.

PASITHEA CÆRULEA, *Bot. Mag.*, t. 7249.—An Anthericum-like plant with linear leaves, and loose open many-flowered panicles of small blue flowers. The bulbs are used for food in Chile. Kew.

PEAR SOUVENIR D'ÉDOUARD VAN DER BERCHE, *Bulletin d'Arboriculture*, July.

PITTOSPORUM FLAVUM, *Bull. Soc. Tos. di Orticolt.* t. vii., 1892.

STANHOPEA EBURNEA, *Lindenia*, t. 336.

SARRACENIA FLAVA, *Meehan's Monthly*, August.

HOME CORRESPONDENCE.

FREESIAS FROM SEED.—Messrs. Sutton & Sons have in bloom at the present time at their Portland Nursery, at Reading, a number of plants of *Freesia Leichtlinii* and also of *F. refracta*, obtained from seeds sown in February last, the plants at the present time blooming freely. The seeds were sown about the middle of February in a compost made of loam and leaf soil, and placed in a temperature of from 60° to 70°. They soon germinated, and when large enough the seedlings were pricked off into 48-sized pots, six plants in a pot, kept close until June, and then hardened off in a cold frame. As soon as they began to show signs of throwing up their flower-stems, they were taken into a house with *Gloxinias*, where they are now blooming freely and finely, diffusing a delightful fragrance; the flower-heads quite as fine as those grown from bulbs. The result is most satisfactory. It might, perhaps, economise labour if six seeds were dibbled into a 48-pot, and thus save the time employed in pricking them off from the seed-pans to pots. R. D.

RHODODENDRON FALCONERI.—Several notes in your recent issues mention a lilac-flowering *R. Falconeri*. This is probably the true *R. eximium*. This species (or perhaps variety of *Falconeri*) flowered here in May, 1889, and 1890. It is in form exactly like *Falconeri*; the colour is a rosy-lilac. O. Forster, *Lehenhof*.

STARTING A NURSERY BUSINESS.—At p. 167 "Gardener" seeks to know "how much it would take to start a nursery business that would bring in £50 or £60 per annum?" To give a satisfactory answer to this question is a difficult matter, without knowing something of the ability or the inclinations of your correspondent. For example, it would be useless to picture the rough and the smooth of starting with glass alone, if your correspondent has little or no experience of the cultivation of plants under glass; besides, the departments of the nursery business are so many and so various as to cause beginners, as a rule, to select a certain branch of it, one to which he has been accustomed, and which he feels himself capable of managing, and getting a living by when he shall have turned round. But "Gardener" has not given any hint whereby to assist those who might otherwise be able to tender him sound advice. It should, however, be borne in mind, that small as well as large businesses have to face failures of crops and the attendant consequences; things, too, that have never been bargained for or thought of, and this to a small man, and particularly a beginner, is too frequently as a "millstone about his neck." Gardener, however, is by no means an ambitious man, and this being so, one is almost inclined to advise him to seek a situation at £1 or so per week, where the £50 or £60 per annum would be a certainty. Such an income, however, should be easily obtainable with but little expense, by renting a couple of acres of land, preferably of a light sandy loam, and growing thereon vegetables and flowers, confining the latter for the first year or so to annuals which, flowering during the year of sowing and planting, should return the cost for seeds, labour, &c., and permit a margin for profit. Among the flowers *Asters* should receive a prominent place, also *Stocks*; either of these find a ready sale in large towns, as young plants in the spring for bedding out, or for their flowers in a cut state later on. *Cornflowers*, particularly blue and pink, should be grown for these, are very popular at the present time. *Gaillardias*, too, are extremely popular and showy, both plants and flowers being

in demand; these latter, however, are not strictly annual, they are more generally—that is, the forms of *G. grandiflora*—perennial in character. Sweet Peas are both useful, popular, and profitable to cultivate, giving quick returns; other things which may be easily raised from seeds, and for which there is always a certain demand in town gardens, are Canterbury Bells, Sweet Williams, fancy Pansies, and Wallflowers. These, if fairly treated, should prove remunerative, besides being inexpensive to start with. A good assortment of vegetables should also meet a ready sale, and these, too, being annuals, or at least giving their crop within the year, should result profitably, bearing in mind that a variety of things should be grown, but this should not be overdone. This will give quick returns, and avoid the error of having all the eggs in one basket. In such a case £20 or £30 would go a long way towards providing manure and seeds to start with if well spent, but there are other expenses also, such as rent, tools, and general working expenses, besides which the owner must live. The foregoing should be regarded as suggestive rather than aught else, for after all it may be quite opposed to "Gardener's" ideas of a nursery business, yet it is at the same time a means of earning a comfortable living for one blessed with health and strength, and may possibly furnish the start, as it has frequently done in the past, to the attainment in after years of a nursery business well deserving the name. *Young Nurseryman*.

BEES IN THE NORTH.—The bee season in this district so far has been anything but encouraging, for instead of making honey this summer, in many cases the bees have had to be fed, and this has been common with young swarms. Fortunately for this district we have the *Heath blossom* to look forward to, and should the weather prove favourable, a nice lot of *Heather-honey* may yet be stored. It would be interesting to know if any quantity of honey has been obtained in other districts, as this I think would be deserving of note, especially when the perverseness of the weather of this season is taken into account. J. Charlton, *Corbridge-on-Tyne*.

ACANTHOLIMON VENUSTUM.—Really good flowering alpine in summer-time are by no means plentiful, as the flowering season of the majority is throughout the spring. One of the very best, however, at the present time is that named above, now covered with its pleasing spikes of pale pink flowers, which are very beautiful. It has a dwarf, compact, cushion-like habit of growth, and is composed of tufts of rigid spiny glaucous leaves. It is an easily-grown alpine, succeeding quite well in ordinary loam of a sandy nature; its progress, however, is somewhat slow, nor is it among those most readily increased. It may be obtained from seed, however, and where such can be obtained, this constitutes a safe mode of increase. For some years past, however, I have been unable to procure good seed, notwithstanding that my plant, a rather large example, has produced as many as thirty spikes of its flowers. The other means employed for increasing this plant is by careful division in spring, and by cuttings in autumn. Where good rockeries exist, choose for it a sunny ledge, with a good depth of soil in which to send its roots. J.

CATALPAS.—North American species of *Catalpa* succeed well in Britain, and we are happily in possession of arboreal representatives of the natural order, which grow freely into very ornamental leaved, free-flowering examples. Indeed, so well do they succeed, the wonder is they are so generally overlooked. As a town plant, moreover, few trees succeed better, as witness the row of *Catalpas* in the yard of the Houses of Parliament, Westminster. Unhappily, that row happened to be planted with trees already somewhat large, yet they flourish, and appear likely to do so effectually. There seems to be no public record of the horticulturist who had the courage to plant these said examples in that particular place, though, I think, it is a matter deserving of note and commendation. The *Plane tree* is a worthy town tree, and occupies legitimate places of honour, such as the Thames Embankment. It is regrettable, however, if *Catalpas* succeed so well, a further trial of them has not been extended to such places as the public gardens and parks of the metropolis. Occasionally, examples are seen about the suburbs, and passers by admire, and it may be enquire, to little purpose the name. A fine example existed outside or beneath the northern terrace-wall at Windsor, which had a charming effect when in full bloom, the bold racemes of white flowers were seen

nearly on a level with the beholder. The species usually planted is *Catalpa syriaca* or *Lilac*-leaved form. This species is a rapid grower, and when planted in deep free soil in the neighbourhood of London, it attains a height of 20 feet in ten or twelve years. *C. syriaca* aurea, as the name implies, is a golden-leaved sport, and is very suitable for sub-tropical gardening and similar decorative purposes. The Japanese *Catalpa*, introduced as late as the year 1862, the blooms of which are said to be yellowish, white, crimson, named *C. Kämpferi*, would appear desirable. *C. Bungei* and *C. speciosa*, with Pott's pink-flowered Mexican species, *C. Pottii* and *C. microphylla*, the small-leaved form, comprise the whole genus now recorded. Imported seeds yield plants easily and well, and they all are easily propagated from root cuttings in the winter. *W. E.*

LILIAM AURATUM.—In the small suburban garden attached to one of the residences in the Bristol Road, Birmingham, by Mr. Henry Clay, a very fine specimen of this noble Lily is now in flower, having eleven strong stems and eighty-one full-sized flowers. The plant is now in an 18-inch pot, and has been repotted each year, disturbing only the top portion of the ball. Two young offsets were removed some time since, and one has now five fine blooms, and the other three—but are pigmy in size by the side of the parent plant. *W. D.*

THE BEST ARTIFICIAL AND THE BEST NATURAL MANURE ONE AND THE SAME THING.—Farmyard manure, as usually applied to land, certainly does not deserve to be termed a "natural" manure, nor, seeing the utter lack of art generally displayed in the treatment of it, has it the slightest title whatever to be called artificial. Owing to certain barbarous habits existing amongst us, and to ignorance, manure is usually associated in our minds with offensive smells. If, however, our treatment of excrementitious matter were more truly civilised and scientific, the smells, as is the case under natural circumstances, would be so reduced as to be almost annihilated, and the quality of the manure at the same time raised to a maximum. The most practical and valuable ideas respecting the manuring of the soil may be taken from observing how Nature goes to work in a wood or forest. The surface soil in woods and forests is continually gathering fertility, notwithstanding that the crop growing upon it also continues to increase, so that after many years, or rather, many centuries, as the case may be, enormous crops of timber may be removed; and, at the same time, an enormous aggregation of fertility be left behind on the surface, and, although the soil contains, or bears on its surface, this plenitude of fertility, this highly-fertile deposit of superlative manure, the resulting smell, if, indeed, there be any smell at all, has nothing in the least unhealthy in it. People do not get typhus fever and diphtheria from the smells of woods and forests, nor from unwholesome emanations arising from land from which forests have been cleared, save in very exceptional instances indeed. The aggregation of fertility in the surface soil of woods and forests arises from a variety of causes. One of these is the decay of the leaves annually deposited, and from the decay of twigs and branches, and, at last, of the trees themselves, which is continually taking place as the forest advances in age. Much of the matter of which the trees are composed is brought up from depths of the earth, and more still from the atmosphere, all of the former and much of the latter at length becoming deposited on the surface as in turn leaves, twigs, branches, and stems decay. The excrement of birds and animals who make their home in the forest, but much of whose food is obtained outside, deposit their dung, and at last their bodies, on the ground under the trees close to their lairs or roosting places. Then there is atmospheric dust which, though small in quantity, tells up in the course of centuries, whether its origin be meteoric or otherwise; rain washes it down out of the atmosphere. Wind also blows it in amongst the trees, and when once there, has little or no power over it to blow it out again. From these causes and others, accumulations are always, though slowly, going on. Scratching birds, burrowing animals, and the uprooting of trees during storms, to say nothing of various reptiles, worms, and insects, are continually mixing, or causing to be mixed, more or less intimately the surface soil and the ever-accumulating deposit. Thus Nature manures and tills in her own way land entirely left under her charge, and she continues to increase her crops and the fertility of the land at the same time. It is quite possible by artificial means to do the same; indeed, any system of horticulture or agriculture by which this is not accomplished is not

a worthy one. When return is made to the land of all that the crops contain which are removed from it, whether much or little of it has been passed through the bodies of men or animals, then, provided it is fairly good land to start with, an increase of fertility takes place in the same way as land left to Nature. When more is returned than is taken off in crops, then the growth of fertility is more rapid. There are two reasons for this. If everything be returned to the land that is taken off it in crops, more is returned than comes out of the land, because not only is that which comes out of the land returned, but carbonaceous and nitrogenous matter also, a good deal of which has been absorbed from the atmosphere and also returned. The first of these indirectly and the latter directly are great fertilisers. When land is in a very fertile state, plants are correspondingly strong and healthy, and are capable of taking from the inexhaustible ocean of the atmosphere a corresponding supply of that which the atmosphere affords; therefore the more fertile one's land is, the more easily is its fertility kept up. The maximum fertility that the land is capable of should always be striven for, though there is reason to think that as improved strains of vegetables, fruits, flowers, &c., are produced, capable of making use of

in the course of a few months. Accumulations from the dust-hole, manure from a cow-shed, old potting-soil, road-scrappings, cabbage-stumps, hedge-clippings, and all kinds of garden-refuse, &c., are placed on the heap. This heap is commenced in the autumn, and grows till the following autumn, when it is all turned over, and thoroughly mixed, and another new heap commenced. On frosty mornings, and at any time when the ground is hard with frost in winter, the thoroughly-rotted compost of the mixed heap is carted, and wheeled, and spread over the land. This manure may be looked upon not only as the most perfect natural manure, but also as the most perfect complete artificial manure that can be made. Seeing, however, that much of the true earth—phosphate of lime—which is taken away in crops from the land, is the most difficult to get back to it in a suitable condition for immediate use by plants, it is a good plan, when the heap is being turned over, to scatter amongst it some $\frac{1}{2}$ -inch bones, or bone-dust, ground coprolites, or Thomas' Phosphate-powder. If there is reason to believe that the land is very deficient in phosphates, a larger quantity may be given than on land in which there is no reason to suppose phosphates are greatly lacking. *J. E. Ewing, Sea View, Havant, Hants.*



FIG. 13.—*BEGONIA BOLIVIENSIS*. FLOWERS ORANGE-PINK IN COLOUR. (SEE P. 214.)

a greater and greater amount of fertility, a limit to fertility will never be attained. More fertility in the land, and better (more perfect) flowers, fruits, and vegetables, trees, grasses, &c., capable of making use of that fertility, are what present day progress demands. To increase fertility, better methods of dealing with excrementitious matters must be brought into vogue. A perfect natural manure must be the result of animal and vegetable decay mixed in somewhat similar proportion to what takes place in nature, and there should be two objects in making it artificially—one to prevent foul smells and unwholesome accumulations of filth, and the other to provide for the return to the soil of the fertility withdrawn from it by crops, and to increase that fertility. From earth-closets, if properly kept, no foul smells can ever proceed, and danger from sewage contamination is avoided. Of course, there must be some sewage, but when closet-stuff is excluded from it, the danger connected with it is but slight, and it is still valuable as an application to land, as it contains the house slops and all waste house-water. As a matter of fact, a much larger quantity of it would be acceptable here for application to crops. The material taken from the earth-closets once or twice a week, or as often as necessary, is in a perfectly inodorous condition, and is placed at once on a heap formed of this and all other refuse material capable of being rotted down

LILIAM HARRISII.—The value of this Lily is great, as for church decoration, wreaths, crosses, and the embellishment of greenhouses or conservatories it is quite unrivalled; and, as it now comes from different parts of the world at different periods of the year, flowers may be had of it during a long season, and bulbs of it are almost perpetual, for it is found that by treating them well, and growing them on, they break again, and blossom afresh. Market growers, who are ever alive to the merits of any good thing, soon discovered its worth, and by some of them it is very largely cultivated, and whole houses devoted to it, so great is the demand for the flowers, and it is a question, if this goes on, whether the supply of bulbs will be found sufficient; but the world is large, and if they increase in the same way or at the quick rate *L. auratum* appears to do in Japan, from whence they are sent over annually by hundreds of thousands, we shall, no doubt, have enough. Be this, however, as it may, so long as the price remains moderate, *Lilium Harrisii* ought to be had, and now that first consignments are nearly due, gardeners and others will be on the look-out, and on the principle of first come first served, those who apply early are the most likely to get the best bulbs. These, or others, on arrival should be potted at once, but large pots are not needed, 5-inch sizes being quite enough for a single bulb, as it is not a matter of growing an imported Lily on, but to draw out the flowers that are in it, as each one should have several formed in embryo, and packed away ready to come forth with the stem. The soil most suitable for potting is a mixture of rich fibry loam and peat, or the first-named will do very well alone; and it is a good plan to have a pinch of silver sand placed at the base of the bulb, which should not be quite buried, but have the top just clear of the soil. After potting, stand the Lilies in a cold frame, where they should be covered with cocoa-nut fibre, and so left till they start well into growth, the object being to let them come gently along, and make plenty of root before any attempt is made at forcing. In growing *L. Harrisii* it should be borne in mind that the plants are particularly liable to green-fly, and require close watching, as the insects get down into the tops of the stems, and soon cripple the buds. Dipping in tobacco-water is a good remedy, or careful fumigation, but insecticides are dangerous if applied at all strong. The proper treatment after flowering is to keep the plants under glass, and supplied with water, that the leaves and stems may be maintained in a fresh healthy condition as long as possible, or till signs of ripening-off is shown, when the plants may be stood out-of-doors to finish that process. *J. S.*

RUTHENICUS.—In answer to Mr. Wolley Dod *Ruthenicus*, from Ruthenia, a name of Russia whence it was originally obtained. The metal Ruthenium derives its name from the same origin. *X.*

VANDA CERULEA.—A magnificent variety of the above is at present in bloom at Stray Lea, Harrogate (the residence of E. Beckett Faber, Esq.), where there is at all times something in bloom to interest lovers of Orchids. The above plant has six strong growths, and is carrying three spikes, averaging seven flowers on a spike; the individual flowers measuring $5\frac{1}{2}$ inches across, and of a clear blue colour, and splendidly marbled. It is undoubtedly a variety of more than ordinary merit. *Jno. Clayton.*

RIVERS' NEW EARLY NECTARINE.—Every fruit-grower will regret to hear that Mr. T. Rivers does not intend sending out his grand new early Nectarine, because he wishes to grow the fruit for market till he thinks himself recompensed for raising such a grand acquisition. I hope Mr. Rivers will see his way to change his mind; but if not, fruit-growers should try get him to send it out by subscription, say, 200 subscriptions, at £5, for one plant each, and if there are more than 200 subscriptions, the price to be lowered accordingly. What say Mr. Rivers and fruit-growers to the above? as I think we ought to have the above Nectarine, even if we have to pay for it. *Jas. Hamilton, Byrkley Gardens, Burton-on-Trent.*

SALTMARSH'S QUEEN APPLE.—In this variety, the amateur, cottager, market gardener, and in fact every body, will find a very prolific and reliable bearer, and a first-rate culinary variety; an excellent companion variety to Lord Suffield, now so universally known and grown. The fruit of the Queen is not so conical as the other, but the tree bears a close resemblance, and just now a bush tree about 8 feet high and as much through, having a very heavy crop of fine fruit upon it, is to be seen in the gardens of Umberslade Hall, near Birmingham. Mr. Pritchard esteems it so highly that he intends planting more of it, and of Bramley's Seedling. This year Apples are generally small in the Midland districts, and to see a tree of good-sized fruit, such as the one in question is a treat. *W. D.*

HERBACEOUS SPIRÆAS.—*S. astilboides* is a good plant either for pot culture or for growing out in the open, but to have the best results it must have plenty of root moisture, as like most of the Spiræas it is half aquatic, and does grandly in deep loose boggy or open soil by the sides of streams or ponds, where it and other species or varieties are just at home, and flower with great freedom during the early summer months of the year. The inflorescence of *S. astilboides* is almost pure white, and is produced with great freedom on stiff and somewhat wiry stems that branch out at the lower part, and make a fine show, the scent of the flowers being particularly sweet and agreeable. The foliage, too, is highly ornamental, as besides the leaves being handsome in form they are very bright and assume a reddish-bronzy hue, that contrasts well with the blossoms. As this Spiræa seeds freely, it is to be hoped that others will cross with it, and that by-and-by we shall have many more varieties of these useful plants in our gardens. The queen of the Spiræas, however, is *S. palmata*, which is truly a most beautiful object, with its lovely violet-pink shaded panicles of bloom, so light and elegant that they never fail to attract attention from the most casual observer. We are exceptionally favoured in having good places to grow it, as in our hardy fernery or wild garden we have several tiny watercourses, and along the sides of these the Spiræas revel, some thirty or more of *S. palmata* being exceptionally fine, and showing off in fine and pleasing contrast with the one above-named as well as paler coloured seedlings we have raised from it and its white form *S. palmata alba*, and the dear old Meadow Sweet. *S. aruncus* or the Goat's Beard is now over, but it is a grand species, with its big creamy-white towering plumes and abundant healthy foliage, and just the plant for the wild garden as it is stately and robust, if it can get plenty of moisture. *S. japonica* is too well known to need more than a passing notice, but it too, is valuable in a sheltered position and placed like those indicated, as when so favoured, it seldom gets cut or injured by spring frosts, which when exposed, often damage it greatly and cripple the leaves. *S. filipendula flore-pleno* is an old favourite, generally to be met with in herbaceous borders. The habit is lowly, the foliage being much divided, and almost prostrate on the ground, and the flowers, which are pure white, borne in paniculate heads on foot-stalks; but they are not very lasting when cut, the most durable in water being *S. japonica*, which remains quite fresh a long time. All the Spiræas mentioned admit of ready increase by division, as during the season each plant forms several crowns, and these may be separated, the best season for doing so being just as the plants are starting into growth, when they may be cut through with safety and replanted again, as then the roots are becoming active, and quickly get fresh hold of the ground. *J. Sheppard, Woolverstone Park.*

DEW, AND ITS ACTION UPON PLANTS.—*A priori* objections are always of little, and generally of no value; because they only express the writer's

opinion, without its having been put to the test of verification by experiment. If "T. H." would carry out experiments as I have described them in my paper, he will at once see that his criticism is unfounded. He would find that "it was (not) very probable that the moisture was absorbed by the stalk of the leaf," and that cuticle is by no means always so impervious to moisture as he seems to imagine. *George Henslow.*

SCOTLAND.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

AUGUST 18, 19, 20.—The annual floral fête of this Society was held in the Central Park, Aberdeen. Hitherto, the show of this Society has been confined to a horticultural display, the discoursing of music by a military band of distinction, and an exhibition of fireworks in the evening. On this occasion, in addition to the attractions mentioned, the programme included a military tournament! Unfortunately, the weather on the opening day was far from propitious; and the gates were closed early in the evening owing to the heavy downpour of rain. On Friday and Saturday, the weather was as fine as could be wished. The number of entries for the various sections was slightly smaller than was the case last year, and were as follows:—Pot plants, 257; cut flowers, 386; fruit, 390; and vegetables, 421—in all, 1454. The number of competitors was 140, as against 111 last year, and the smaller number of entries is accounted for by the fact that members were allowed to compete once only in each class, the idea being to divide the prizes as much as possible.

Pot Plants.—In the professional gardeners' section the display of plants in pots was very good. In the collection of best-grown plants, arranged on a table 15 feet by 8 feet, that forwarded by Mr. Alex. Grigor, gr. to Mr. A. O. Gill, of Fairfield, was awarded the 1st place. The collection contained several good Orchids, Crotons, and Pines. Besides securing the premier prize, the collection got, in addition, Her Majesty the Queen's special prize—a magnificent salad-bowl, valued at 12 guineas; 2nd honours in this competition fell to Mr. James Strachan, gr. to Mr. John Fyfe, of Beechgrove, who also exhibited a meritorious collection.

Mr. G. McHardy, gr. to Dean of Guild Macdonald, was 1st for six stove or greenhouse plants, Alexander Grigor, for Mr. Gill, being a good 2nd.

Ferns were an excellent display, more especially the exotics, and in this class Mr. Gill led.

Of Fuchsias there was but a fair show, but the assortment of Pelargoniums tabled was of a high order, the double and single zonales, and the tricolor section, being particularly noticeable.

For size and colour the show of Begonias would be hard to beaten. Mr. John Hay, Polmuir Road, Aberdeen, carried off 1st honours with a grand specimen.

Coxcombs were well coloured, of good substance, and very dwarf. James Eddies, gr. to Miss Leith of Freefield, took 1st place. Orchids and Petunias looked really well.

In the amateurs' department the show of plants in pots was an extremely creditable one.

Cut Flowers.—Considering the backward nature of the season, the show of cut flowers was a splendid one. The show of Roses was one of the best ever seen in Aberdeen. Mr. D. Macdonald, from Deemount Nursery, was 1st for the best twenty-four blooms. The premier honours for best twelve Rose blooms went to Mr. Reid, gr. to Mr. Baird of Urie. Phloxes and Stocks have seldom been seen in better condition, and competition in these classes was keen. Pansies were numerous and good, but Dahlias were a poor show, owing to the lateness of the season. There were few competitors for the best arranged basket of flowers, but those who did enter showed a considerable amount of skill. The 1st went to Mr. William Pope, Aberdeen. The nurserymen and florists tabled a large and fine assortment of cut flowers. The Messrs. Croll, Dundee, with a

splendid collection, secured premier honours for the best thirty-six Rose blooms. The same firm were also winners in the Tea-Rose competition, with magnificent specimens. The unfortunate rupture between the acting directors of the Society and the Messrs. Cocker, Aberdeen, the well-known rosarians, precluded that firm from competing.

Fruit.—Perhaps the great feature in the fête was the magnificent display of fruit. The judges gave it as their opinion that never before had they seen a better. The number of entries exceeded those of last year, and the competition was close. In the professional section, Mr. A. Howie, gr. to Rev. J. S. Gemmel, of Drumtochty Castle, was placed 1st for his collection of fruit—nine dishes, distinct varieties. Mr. Howie also carried off the Silver Medal presented by the *Gardeners' Magazine* for the best collection of fruit. Grapes were in abundance, Mr. Reid, Durris, securing the principal prizes, although the other competitors ran him close. Melons, Tomatoes, Peaches, and Pears were good. Strawberries, Gooseberries, and black Currants were shown in great numbers.

Vegetables.—The vegetables looked well. For the best collection, arranged in a box 4 feet by 3 feet, outside measurement, and comprising ten distinct varieties, there were six competitors, Mr. Middleton, gr. to Sir Arthur Grant, Bart., of Monymusk, taking the lead with an excellent collection; Mr. G. Milne, gr. to Lady Gordon Cathcart, took the 2nd place. For a similar collection, open to market gardeners only, Mr. W. Anderson, Lower Cornhill, received the chief prize.

Mr. W. Johnston, Hatton of Fintray, and Mr. W. D. Kirton, Ellon, were the 1st prize takers in the amateur and working sections respectively for the best collection of vegetables. The Potatoes shown were very good for the season. Tubers were particularly clean and well shaped.

Plants, &c., for exhibition only.—Mr. Joseph Dalgarno, Whitehall, Aberdeen, showed a lovely collection of herbaceous plants and ferns. Messrs. W. Smith & Son, Aberdeen, and Messrs. Ben. Reid & Co., Aberdeen, exhibited magnificent collections of plants and cut flowers. Mr. John Forbes, Buccleuch Nurseries, Hawick, also exhibited largely, and was awarded a Silver Medal for his collection of cut flowers, and a First-class Certificate for his Carnation Meteor.

The opening ceremony was performed by Sir Arthur Grant, Bart., of Monymusk, who also supervised the military tournament.

SOCIETIES.

ROYAL HORTICULTURAL AT CHISWICK.

THE Conference on Begonias, Apricots, and Plums, was opened on Tuesday, the 23rd inst., in the grounds of the Society at Chiswick, in beautiful weather. The general features dealt with at the Conference are summarised in our leading article, and the details of the exhibition will be found below.

Floral Committee.

Present: J. Marshall (chairman), Messrs. Chas. T. Druery, Harry Turner, Geo. Paul, W. C. Leach, R. Dean, John Laing, B. Wynne, Geo. Phippen, H. Herbst, T. Baines, Robt. Owen, H. B. May.

Some very bright and interesting collections of cut flowers, together with good groups of Begonias, excellent exhibits of hardy Ferns in great variety, and several collections of plants, including some very fine specimens of the scented species of Pelargonium, produced a most brilliant and interesting display in the two large tents that had been erected in the grounds for their accommodation.

From the Royal Gardens, Kew, came a large group of fibrous-rooted Begonias, including some seventy species or more, which contained many species that are not often met with, and which were especially interesting in view of the Conference that was held in the afternoon. Conspicuous amongst these were some large plants of *B. Haageana* in full bloom, *B. argentea guttata*, *B. sanguinea*, *B. Scharfiana*, *B. hirsuta*, *B. Knowsleyana*, &c.

In addition to the Begonias were *Crocasma aurea* var. *imperialis*, and *C. aurea* var. *maculata*; this latter, with its large round flowers, never failing to command admiration. Also *Stenoglossis fimbriata*, and *S. longifolia*, its larger-growing relative; *Acidanthera bicolor*, a very admirable plant, of very similar habit to the *Colvillei* *Gladiolus*, and bearing large creamy-white flowers, with a pretty chocolate star; and cut blooms of the new Chinese *Lilium Henryi*.

Messrs. J. Veitch & Sons, Chelsea, also exhibited some choice and rare species and varieties of Begonias, including *B. metallica*, *C. Sambo*, *B. hydrocotylifolia*, *B. Bavaria*, *Arthur Malet*, and *Marie Louise*, the prettiest plant of the Rex type we have seen, to which an Award of Merit was accorded, also *B. corallina*, *B. fuchsoides*, *B. xanthina*, beside some plants of what is supposed to be a new species, from Penang. This is very pretty, and has very dark brown velvety leaves, with veins of light green. Another interesting plant is the result of a cross between *B. Rex* and *B. socotrana* (Silver Flora Medal).

The species of Begonia shown by James Veitch & Sons were:—

Rex	Thwaitesii
xanthina	gogensis
Evansiana	sp. from Penang
hydrocotylifolia	geranioides
man-cata	Dregei
Wightii	Sutherlandii
metallica	Fröbelii
socotrana	Haageana
fuchsoides	Scharffii
nitida	corallina
suaveolens	Martiana
argyrostigma	Burkei
insignis	Beddomei
semperflorens	rubella
sanguinea	parvifolia

Messrs. John Laing & Son, Forest Hill, had an excellent group of the Tuberous-rooted section, all of them double. Awards of Merit were granted to Lord Esher, a good scarlet; to Lady Gertrude, a very delicate-looking flower, being a beautiful pink, falling to white in the centre; to Earl Cranbrook, a good rich scarlet, the foliage being wonderfully dark, and to Picotee, and Duke of Fife. The same firm exhibited a group of foliage Begonias, amongst which was a very fine variety called *Bertha McGregor*, of the Rex type, and having very ornamental and deeply-cut foliage; also *Silver Cloud*, *B. Haageana*, and *B. manicata aurea*. Mr. Laing had also three plants in three colours (white, scarlet, and yellow), of the tuberous section, but which had variegated foliage, thus blending in one plant the advantages of the showy blossoms with ornamental foliage. Sprays and a bouquet, composed exclusively of this favourite flower, were also included amongst the exhibits from Forest Hill (Silver-gilt Medal).

Messrs. H. Cannell & Sons, Swanley, Kent, had a large number of cut flowers of double tuberous-rooted varieties, very tastefully exhibited in small bunches or sprays, and containing, as usual, some fine varieties, in excellent condition. Conspicuous amongst these was the well-known pink-coloured *Lewes Castle*, Mr. Falconer, a good yellow flower; Sir J. D. Hooker, a bright red; Madame la Baronne de St. Didier, Mrs. O. T. Hodges, exceptionally large, salmon-pink; and a seedling of first-class merit, bright scarlet, with pretty crimped edges. Also some plants of winter-flowering Begonias, which had been obtained from cuttings this year, pinched, and were now ready to be grown along in a cool place to prepare for their duty in the winter (Silver-gilt Silver Medal).

W. Marshall, Esq., Bexley, obtained 1st prize for six foliage Begonias, showing very clean and healthy specimens of Louis Chrétien Desfontaine, President de Hecke, Perle de Paris, Brongniart, and Madame Alamangy, this latter a pretty silver-coloured variety with dark centre, being awarded a First-class Certificate.

Mr. O. T. Hodges, Chislehurst, was awarded a 1st prize for nine double tuberous-rooted Begonias, which included Albert Crausae, Mrs. Harold, Madame Hostein, and Madame Arnaut, &c.

The Duke of Northumberland, Albury Park (gr., W. C. Leach), had some sprays of *Tilia platyphylloides*. This was described as one of the finest of trees, of freer growth than the common Lime, and of exceptional merit as an avenue tree or as a single specimen on lawns (First-class Certificate).

Mr. G. Reynolds, gr. to Lord Rothschild, Gunnersbury Park, exhibited a seedling *Carnation*, a pink variety, clove-scented, and of good habit, and named Mrs. Leopold de Rothschild (Award of Merit).

Miss Debenham, St. Peter's, St. Albans, had a

collection of Chrysanthemum blooms; and J. Currie, Esq., Trinity College, Edinburgh, had also some blooms of Chrysanthemums of very good merit, including Stanstead White, E. Molyneux, Mrs. Irwin Clarke, and Madame Desgranges (Bronze Banksian Medal).

Messrs. J. Cheal & Sons, Crawley, had a new Pompon Dahlia, named *Crawley Bedder*.

Mr. Hudson, gr. to Lord Rothschild, Gunnersbury House, Acton, showed specimen plants of scented varieties of Pelargoniums, including *P. denticulata*, *P. d. majus*, Rollison's Unique, capitatum, Little Gem, radula, and radula major, filicifolium odoratum, Lady Plymouth, &c. These plants were all well grown, and some of them 4 to 5 feet high. Such specimens are rarely or never seen nowadays, and throughout the exhibition they created much interest (Silver Flora Medal). From the same exhibitor came a very handsome plant of *Asparagus deflexus*, in a suspended basket, and hanging some 3 to 4 feet (First-class Certificate).

Messrs. Kelway & Son, Langport, Somerset, had a large collection of cut spikes of *Gladiolus* in about fifty varieties. All of these were of high merit, but we may mention *Private Secretary*, a rosy-carmine flower, with white or cream-coloured lower



FIG. 44.—*BEGONIA VEITCHII*: FLOWERS OF A BRIGHT RED. (SEE P. 244.)

petals; Mrs. Hobhouse, fleshy-carmine, with violet blotch on the lower petals, extra large; and Mrs. McAlister, a creamy yellow variety, all of which were given Awards of Merit. The same firm had a very choice and pleasing collection of hardy flowers, including *Yucca filamentosa*, the graceful *Gypsophila paniculata*, *Echinops Retro*, *Statice incana*, *Phygelinea capensis*, *Eryngium planum*, and *E. azureum*, &c. (Silver Gilt Banksian Medal).

Messrs. Cannell & Son had cut blooms of *Cactus Dahlias* in immense variety, which created a most brilliant effect. Amongst others were *Minos Hoste*, a large double, very dark crimson; Cannell's Favourite, a very charming variety; Black Prince, a good bloom, and nearly black; Maid of Kent, scarlet, with each petal tipped with white; Pride of Swanley, pink; and the old and much-prized *Juarez*.

Messrs. Paul & Son exhibited herbaceous *Phlox* in great variety, and obtained Awards of Merit for the following:—*Eclairneur*, light purple; *Le Soleil*, large pink flower; and *Michael Servantes*. There were also *Jeanne d'Arc*, a good white; *Purété*, another white, and perhaps purer; *Jean Bart*, and many others. The same firm had also a large number of good *Roses*, H.P.'s and Teas (Silver Floral Medal).

Mr. Thos. S. Ware, Hale Farm Nurseries, Tottenham, had also a collection of hardy flowers, including several good varieties of *Cannas*, *Helenium grandicephalum striatum*, a very ornamental tall-growing herbaceous plant, apparently a form of *H. autumnale*, but with the ray-florets streaked and spotted with orange brown (First-class Certificate); *Phloxes*

in variety, and a group of seedling *Hollyhocks* (Silver Flora Medal). Messrs. Pitcher & Manda, Hextable, hardy and herbaceous flowers, including *Lilium auratum*, *Achillea Millifolium rubra*, *Coreopsis lanceolata*, *Monarda didyma*, *Eupatorium purpureum*, &c. (Bronze Floral Medal). Mr. J. A. Bruce, Edge Lane, Manchester, showed three varieties of *Vallota* in bloom, and Mr. G. Harris, Clifton, Bristol, a dwarf scarlet bedding *Geranium*.

MM. Vilmorin, Andrieux & Co., Paris, obtained a First-class Certificate for *Begonia semperflorens rubrum*, Vernon's variety, and Awards of Merit for *Begonia multiflora l'Avenir*, B. Louise Robert, B. Madame Louis Urban, and B. rosea multiflora.

Messrs. Sutton & Sons, Reading, an Award of Merit for *Begonia Princess Beatrice*.

Mr. J. A. Morris, Acton, Middlesex, an Award of Merit for *Coleus Distinction*, very deep velvet, the darkest we remember seeing.

From the Duke of Northumberland came a group of *Antirrhinums*, and *Pentstemons* in variety, and of much merit.

Certificates were also awarded to Mr. Chas. T. Drury, for *Athyrium filix-femina superbum* per cristatum, and for *A. f. rotunda cristatum*.

From the Botanic Gardens, Cambridge, were sent sprays of *Begonia Evansiana*, *B. Haageana*, *B. gogensis*, *B. metallica*, and *B. parviflora*.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair, J. O'Brien, Sec., E. Hill, J. Douglas, and Dr. M. T. Masters, F.R.S.

As usual, when the meeting is held at Chiswick, the exhibits were very few in number. From Baron Schroder's gardens, The Dell, Egham, gr., Mr. H. Ballantine, came a *Cattleya*, a hybrid between *C. Trianae* and *C. dolosa*, and named *Cattleya* × *Baroness Schroderae*. Its flowers called to mind those of *C. Schroderae*, but they were of thicker substance—the sepals and petals veined and tinged with clear rose-pink; the lip white with rose-coloured edging, and the throat of rich orange (First-Class Certificate); *Drewett O. Drewett*, Esq., Riding Mill-on-Tyne (gr. Mr. A. J. Keeling), sent spike and leaf of a light form of *Cypripedium* × *De Witt Smith* (*Spicerianum* × *Lowii*).

Messrs. Pitcher & Manda, The United States Nurseries, Swanley, Kent, exhibited *Cypripedium magniflorum* and *C. Wallertii pallidum* (*Harrisianum* × *villosum*).

C. Whitefield King, Esq., Morpeth House, Ipswich, showed a curious *Eulophia* from Madagascar; and Messrs. F. Sander & Co., St. Albans, again sent their fine *Calanthe Sanderiana*.

Floral Committee Awards.

First-class Certificates.

To *Nephrolepis davallioides multiceps*, from H. B. May.
To *Pteris tremula variegata*, from Mr. H. B. May.
To *Pteris Reginae*, from Mr. H. B. May.
To *Pteris cristata*, from Mr. H. B. May.

MEDALS.

Silver-gilt Flora.

To Messrs. H. Cannell & Sons, for Begonias, *Cactus Dahlias*, &c.

Silver Flora.

To Messrs. Jas. Veitch & Sons, for Begonias.
To Messrs. de Rothschild, for scented Pelargoniums.
To Messrs. Paul & Son, for cut *Phloxes* and *Roses*.
To Mr. Thos. S. Ware, for *Phloxes* & *Hollyhocks*.

Silver-Gilt Banksian.

To Messrs. Kelway & Sons, for *Gladioli*.
To Mr. H. May, for Ferns.

Bronze Banksian.

To Messrs. Pitcher & Manda, for hardy cut flowers.
To J. Currie, Esq., for Chrysanthemums.

Award of Merit.

To *Adiantum elegantissimum*, from Mr. H. B. May.
To *Athyrium setigerum*, from Messrs. J. & W. Birkenhead.
To *Begonia multiflora l'Avenir*, from M. Vilmorin.
To *Begonia Louise Robert*, from M. Vilmorin.
To *Begonia Madame Louise Urban*, from M. Vilmorin.
To *Begonia rosea multiflora*, from M. Vilmorin.
To Messrs. J. Laing & Sons, for Begonias.
To Mr. W. J. Birkenhead, for Ferns.

Fruit Committee.

Present: Mr. Philip Crowley (chairman); Messrs. W. Balderson, F. J. Lane, J. Smith, T. J. Saltmarsh, W. Warren, J. Wright, A. Dean, G. Reynolds, J. Hudson, J. Willard, W. Bates, G. H. Sage, G. W. Cummins, A. H. Pearson, J. Cheal, and G. Bunyard.

The exhibits were not, perhaps, so numerous as had been anticipated, but there were some good examples of Plums, Apricots, Apples, &c. Messrs. G. Bunyard & Co., Maidstone, showed the new Lady Sudeley Apple from trees in the open, and judging from this exhibit, the new variety will be the best early Apple we have. It is a

very pretty fruit, something like Irish Peach, but is described as being very superior to that variety, and has a much longer season (Cultural Commendation).

From the Royal Horticultural Society's own garden were exhibited Apples, Worcester Pearmain, Cellini Pippin, The Queen, Ribston Pippin, Ecklinville, Yorkshire Beauty, and Lady Sudeley. All of these had been grown in pots, and the fruits were fine and well-coloured. Pear Beacon, and Fig Large Black Douro, a good free-fruited variety (First-class Certificate), and two varieties of white Grapes Orez, Tardovany, and Voluvna (Cultural Commendation).

Mr. Geo. Lee, of Clivedon, a dish of Apples Dr. Hogg. W. Roupell, Esq., Roupell Park, S.W., showed Grapes Primavis (white), of excellent flavour; Frontignan, Purple Constantia, Gros Colmar, and Diamant Traube, a large juicy white variety. Also a dish of Lady Sudeley Apple, the result of double grafting, by which it is said a season, or perhaps two, may be saved in dealing with this variety (Vote of Thanks).

Mr. Jno. King sent a fruiting branch of Plum, to show what a heavy crop some trees were bearing in a position sheltered from the north and east (Vote of Thanks). Mr. W. C. Leach, Albury Park, Guildford, a fruiting branch of Damson, Bramley's King (Vote of Thanks).

Messrs. H. Lane & Son, Berkhamstead, showed a large collection of Plums on branches, all carrying good crops. Amongst others were Sultan, Prince of Wales, Belle de Louvain, Victoria, Cox's Emperor, Orleans, Diamond, Angelina Burdett, Jefferson, Curlew, Reine Claude de Count Hathem, Belgian Purple, and Pershore (Silver Banksian Medal).

Mr. J. Miller, gr. to Lord Foley, Ruxley Lodge, Esher, obtained 1st prize for three dishes of Apricots, with fine well-coloured fruits of Moor Park, Kaisha, and Hemskirk. Mr. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, was 2nd, with Large Early, Shipleys, and Moor Park. Mr. Wythes also sent some 150 fruits of Apricots, of the varieties Hemskirk, Shipley, and Moor Park.

Mr. Jno. Watkin, Pomona Farm Nurseries, Withington, near Hereford, sent fruiting branches of Plum Pershore, and of White Bullace, Frogmore Prolific, and Damascene of Worcester Damson. Also a collection of Damsons, in eight varieties, and of Plums, in many varieties (Vote of Thanks).

Messrs. Collins Bros. and Gabriel, 39, Waterloo Road, Nurseries, Hampton, Middlesex, obtained a First-class Certificate for a dish of Tomatos, Colling's Challenger, perfectly smooth, and of extra colour. Mr. J. Gibson showed an excellent lot of Onions, a new variety called Sutton's A1, and received a Cultural Commendation. The same exhibitor sent some Parsnips, Sutton's Student.

BRITISH FERNS.

The exhibition of British Ferns held at Chiswick on the 23rd and 24th inst. was a distinct success, the weather on the opening day, though sultry, conducing to a numerous attendance of visitors, who were certainly well repaid by the great range of the exhibits, their varietal quality, and the perfection of culture which they almost invariably exemplified. As usual, Mr. E. J. Lowe took the lead by showing some hundreds of splendidly-grown specimens of all the larger species, supplemented by a numerous batch of those singular products of crossing and hybridisation of which he has made a specialty. These together occupied the whole side of the large tent, extending also round the end of it and partly back again. This ample space was utilised wisely to display the plants, with plenty of room between for the beauties or peculiarities (not always synonymous) to be well displayed.

Beginning with this collection, the first batch of plants consisted of sixteen dwarf or congested varieties, of which the most noteworthy was an immense (for its class) specimen of a Hart's-tongue, in which the usual strap-like fronds were transmuted into one huge ball of finely comminuted moss (*S. v. densum*), a very striking plant, as it is usually represented by a specimen in a thumb-pot. *S. v. nymphae* was a charming ramo-cristate form in this section.

Ten plumose forms of Shield and Lady Ferns next competed successfully for Colonel A. M. Jones' memorial prize, several of the Shield Ferns, and especially *P. ang. plum. inaccessum*, being really marvellous in their delicacy of cutting and amplitude of foliage. Ten cruciate forms, more curious but less beautiful, followed, the most striking of which were the hybrids which Mr. Lowe has effected between the two species, *P. aculeatum* and *P.*

angulare, some of which figured further on as hybrids in a special class of their own. *P. aculeatum*, though far less sportive than *P. angulare*, afforded material for a fine selection, *P. acul. Abbottae* and *pendens* ranking foremost. A number of really grand Hart's-tongues were next displayed, many of them crispums of great beauty, one especially, having the finely-frilled fronds of a delicate cream colour, edged with green, attracting universal attention.

An immense plant of *L. f.-m. grandiceps*, forming a solid ball of foliage some 3 feet or more through, ranked, and justly so, as the best specimen *Lastrea*. Among the small peculiar crosses already alluded to were a number of Hart's-tongues, displaying multiple parentage in a very marked way, the conjoined characters of several forms appearing unmistakably, though the question of "How it is done" still remains a moot point with scientific botanists. Mr. Lowe, who staged his collection as shown by the Clifton Zoological Gardens, though we understand it represented a combination of his own private collection, and that of the late Colonel Jones, which is under his care at Clifton, specified a very large number of new forms for Certificates, the awards for which will appear elsewhere.

The next amateur collection of importance was that of Mr. C. T. Drury, who staged a large group to the right of the entrance. Among these the most prominent were several specimens of plumose *Athyria* of great beauty, one *A. f.-f. plumosum* Druryi carrying off the honour of "best variety in the show." These plumose varieties conjoined with two specimens of the joint productions of Col. Jones and Mr. Fox, the wonderful "*densum*" and "*laxum*" *Polystichums*, a frilled Hart's-tongue, 5½ inches across the fronds (*S. v. crispum grande*, Wills), a grand specimen of the British Tree Fern (*Lastrea f.-mas cristata*), and one of the original Victoria Lady Fern, with fronds nearly 4 feet long, secured 2nd prize for the sixteen best varieties, Mr. Lowe obtaining 1st.

Several new varieties were Certificated, amongst them a new pericristate plumose *Athyrium* of great beauty.

Mr. W. Marshall entered the lists with a collection of *Polypodium vulgare*, one of which, *P. v. trichomanoides*, ranked deservedly as the best specimen plant exhibited, and several others of his showing ran it very close. It is to be hoped that at next competition Mr. Marshall will extend his scope to other species as well. Mr. Roupell staged a group of *P. angulare proliferum*.

Messrs. W. & J. Birkenhead and Mr. H. B. May displayed two very good collections of the choicer British Ferns with fine effect. Messrs. Birkenhead's collection of *Blechnum* spicant varieties was especially good; and some fimbriate and frilled *Scolopendriums* opened out new vistas of beauty in this protean species.

To sum up, the exhibition as a whole demonstrated clearly, by several new "breaks" in various species, that our British Ferns in course of time will stand not merely as equals, but as *facile principes* among the Ferns of the world. The cultivated eye appreciates this in viewing the recently-introduced plumose *Polystichums* of Jones and Fox, the superb strain of *Athyria* of Drury, the fimbriate, crested and frilled *Scolopendriums* of Stansfield, Birkenhead, and Cropper, and last, but by no means least, the fimbriate crested *Lastrea* (*L. f.-m. fimbriata cristata*), also raised by the last-named grower. These exemplify greater advances in the right direction than anything produced within the preceding thirty years.

SCOTTISH ARBORICULTURAL ASSOCIATION.

(Continued from p. 220.)

AUGUST 10.—The "Jolly Foresters" were soon rapidly on their way to Falkland Palace, which is a place of great interest to antiquarians, the Marquis of Bute giving liberty to visitors to inspect the old building. Mr. Dewar, gardener to Lord Bute, explained much of what had been discovered by excavations made to the original foundations. Two Sycamores, closely associated with the name of Queen Mary, were measured, and were 10 feet 6 inches and 10 feet 4 inches in girth respectively. The vegetable garden, by the old palace, is closely cropped, and a portion is ornamental. Among flowering plants were lines of Pansies, yellow, blue, and white, in perfect condition with bloom, and the finest display of them I have seen for some years. The whole party was entertained at a substantial tea

by Lord Bute and Major Wood, the land agent. Nuthill was visited, where the residence of Lord Bute is located, and at the north side of Falkland Hill, which stands in the midst of grounds of unrivalled beauty. Thirteen acres are covered with fine shrubs and a choice selection of trees, around which are closely-shaven lawns, a flower garden gay with flowering plants, among a wealth of arboreal treasures are at present among the numerous attractive objects at Falkland. The plantations all along, and nearly to the summit of East Lomond Hill, created much admiration. The glades of grass through massive woods are seen at a great distance. Numerous specimens of *Araucaria*, *Cedrus atlantica*, and *C. Deodara* were inspected, and some measured. *Sequoia sempervirens* is about 70 feet in height, with a girth of trunk of 9 feet. This fine specimen is too much enclosed by other trees. *Cedrus Deodara*, purple Beeches and Birches make a fine picture at this end of the grounds, beautifully kept under the charge of Mr. Dewar. Hollies, Yews, and *Abies nobilis* thrive admirably here.

The party then drove off, passing the comely and cosy seats of Pitfour and Wellfield, and a delightful drive along the Pass of Glenfarg was enjoyed, till the "fair city" of Perth was reached as darkness was enveloping it. About 10 p.m. the company sat down to dinner at the "Salutation" hotel, Mr. John Methven presiding (in the absence of Prof. Bayley Balfour), supported by Messrs. Dunn, Laird, Watt, and other leading arborists. The toast of the evening, "The Royal Scottish Arboricultural Society," was pledged with great enthusiasm.

The morning of Thursday was wet and cloudy, but some of the excursionists started soon after 6 a.m. on a visit to the beautiful suburban residence of Robert Pullar, Tayside, to inspect his fine conservatory and other glass structures nestling so beautifully by the side of the river from which the place takes its name.

After breakfast the party started, under favourable auspices, for Scone Palace (the magnificent seat of Earl Mansfield), and to the famous grounds of Murthly Castle. During the day the party was increased by an accession of numbers from the British Association. The weather was dry, mild, and balmy, with, however, but little sunshine. The excursionists moved off about 9 o'clock. Each had his hat or coat decorated with the badge of the Association—a sprig of Scots Fir. When the party arrived at Scone (now about 112 strong), Viscount Stormouth received them, and kindly acted as guide through the fine park, rich in arboreal treasures. Beeches, Larches, Sycamores, Oaks (more remarkable for handsome stems than bulk) are abundant, and dotted through the spacious park in a manner showing their fine proportions. The beautifully-kept pinetum, with its green carpet of closely-shaven grass, excited great enthusiasm. The arboreal treasures from Japan, India, and America attracted much notice by their freshness and vigour. Wellingtonias, 70 to 80 feet high; *Picea Menziesii*, *Araucaria imbricata*, *Abies nobilis*, *Cupressus Nutkaensis*, 46 feet high; *Abies Nordmanniana*, 75 feet; *A. Albertiana*, 75 feet high; and many others in this unique pinetum were much admired. The gardens and glass structures were made for, by some of us. Forced fruits (Grapes and Peaches especially) were in admirable condition both as regards crop and general appearance.

Two splendid Fig trees bearing fine fruit were noted, clothed with foliage nearly to the ground. The flower borders were very gay, and capitally arranged; and an attractive arrangement of dwarf *Retinosporas*, dotted among flowering plants, was much admired. In the spacious and well-arranged vegetable garden, fine crops are within the walls of the usual class of vegetables required by the proprietor of such a house as Scone Palace. Rich in historical associations as Scone is, we must pass them over at present. By the palace is an *Abies Douglasii* 90 feet high; and the two trees planted near the palace by James VI. and Mary Queen of Scots, are Sycamores. The James VI. one, measured 5 feet up, is 12 feet 9 inches in girth; while Queen Mary's tree is 13 feet 4 inches, the smaller size being the healthier tree. At about 20 feet from the ground, fungi have attacked the Queen's tree. At the back of the palace was a grand Ontario Poplar, over 100 feet in height, with a girth of 15 feet 6 inches. After a long walk the Muir-ward plantations were reached, and for those much interested in commercial forestry, interesting plantations may be seen, where Larch, Scots, and Douglas Firs are planted in large breadths, to show their comparative merits as timber. The late Mr. McCorquodale planted the Douglas Fir largely

on the estates, and time has shown that he did not do this work in vain.

Lord Stormouth was thanked for his courtesy, and the party drove off through a finely-wooded country, *via* Taymount, each one delighted with the beauties and grandeur of Scone, where Mr. McKinnon has shown his skill in managing the extensive gardens and grounds under his charge.

A halt was made at Meiklour, the beautiful seat of Lady Lansdowne, where an inspection was made of the famous Beech hedge, which runs by the public road for a distance of 650 yards; the height is from 85 to 86 feet high, and it is cut every three years. By invitation of the Dowager Marchioness of Lansdowne, the excursionists visited the fine park and grounds, widely-known for their peculiar beauty, and were kindly conducted by Mr. Mathieson to a grand avenue of Sycamores and Beeches, which met at top, forming an arch 75 feet high; and some fine Silver Firs are here, one over 100 feet in height. Many other trees were inspected; *Abies nobilis* in groups are conspicuous. Among some fine Sweet Chestnuts, one is over 14 feet in girth. A Weymouth Pine is over 100 feet in height, and divided into eleven trunks at the base. This seat, which is swept by the Tay, and surrounded by much that is beautiful, had to be hurriedly left.

The journey was pursued to Murthly Castle, the seat of W. Stewart Fotheringham, Esq., who with his factor and head gardener gave the party a cordial reception, conducting them to a spacious tent and a substantial luncheon, to which about 200 sat down. Professor Bayley Balfour proposed the health of their host, and spoke of the beauties and grandeur of Murthly. Mr. Stephen Bourne (on behalf of the British Association) endorsed the remark of the professor. The grounds traversed by the proprietor of Murthly, who has a good knowledge of his trees, was of a delightful character; long avenues finely kept by mowing machine are belted with innumerable grand specimens of the finest species of Coniferæ, which could be collected. No one (except those who have previously visited Murthly) had the remotest idea of such a grand collection being in existence. I submit a list of a few of the finest specimens, which I obtained from the enthusiastic Mr. Laurie, the head gardener.

Wellingtonia planted in 1857, is 66 feet 6 inches high, 9 feet 3 inches girth, diameter of branch 26 feet; *Abies Menziesii*, 91 feet 9 inches high; *Pinus monticola*, 66 feet; *Araucaria*, 42 feet; *Abies Pinsapo*, 35 feet 8 inches; *Cedrus Deodara*, 51 feet 3 inches; *Abies magnifica*, 31 feet 9 inches; *Libocedrus decurrens*, 34 feet 8 inches; *Albertiana*, 70 feet 2 inches; *Douglasii*, 86 feet 6 inches; *Cupressus thyoides*, 33 feet 6 inches; *Abies grandis*, 64 feet 2 inches; *A. nobilis*, 75 feet 4 inches; *A. Nordmanniana*, 55 feet 6 inches; *Cryptomeria*, 36 feet 3 inches; Cedar, 65 feet 10 inches. There are many hundreds in approximate heights to the foregoing, and many fine deciduous specimens in the grounds. A Spanish Chestnut is 70 feet in height, and 18 feet 7 inches in girth. There are growing in different parts of the grounds, over seventy distinct species, all healthy and vigorous. The visit to this magnificent estate will long live in the memories of the visitors. The party were again served with refreshments, and a return to Perth was made, reaching the "Salutation" about half-past 8 o'clock. The annual dinner of the Society was held at 9 o'clock, Professor Balfour presiding.

The third and concluding day of the excursion was favoured with excellent weather. The company, numbering over eighty, started for Methven Castle, the delightful seat of Wm. Smythe, Esq. Many interesting and historical scenes are passed on the way—the castle of Huntingtower, the scene of that notable incident, the raid of Ruthven. The long avenue leading to Methven Castle is finely belted with gigantic Oaks, Scots Fir, Birches, Larch, Douglas Firs, and many other species of great size and in great numbers. The party was received most cordially by Colonel Smythe, the eldest son of the proprietor of Methven. An inspection was at once made of the trees in the home grounds, and a walk through the park and some of the woods followed, Mr. Whitton, the gardener, acting as guide to the objects of greatest interest. Some grand spreading Beeches were measured, their trunks being over 12 feet in girth. An Oak, 400 years old, was girthed at 5 feet above the ground, and it measured 20 feet. Some grand Sweet Chestnuts and Oaks are in front of the castle; an Ash with a remarkably handsome stem, measuring 13 feet 8 inches in girth.

Hurriedly passing among these numerous giants

of the forest, the private grounds are reached. Tall Birches, Wellingtonias, *Cedrus Deodaras* (an avenue of these is passed); *Retinosporas*, about 14 feet high, among many choice shrubs, are passed; measurement, by Kay's dendrometer, of an *Albertiana*, which is 63 feet in height; *Abies nobilis*, in fine form, and *Retinospora plumosa*, about 14 feet in height, are admired. Great reverence for these fine trees is manifest, and Colonel Smythe was much pleased to see the intense interest taken in such numbers of the fine specimens. A clump of Spanish Chestnuts was pointed out which had been raised from seed on the estate, and planted in 1832. Some Beeches were measured near the mansion, and found over 12 feet in girth 5 feet from the ground. Mr. Smythe and Mrs. Smythe received the visitors on the terrace by the old castle. The numerous party was hospitably entertained. Professor B. Balfour returned thanks to Mr. and Mrs. Smythe and family for their great kindness.

Accompanied by Colonel Smythe and Mr. F. Smythe, the party then drove to the Lyndoch woods, now in the possession of Lord Mansfield, the chief object being to inspect two famous Douglas Firs, said to be the largest in the country—one is 93 feet high, and the girth at 5 feet up is 12 feet 1 inch. One of these is the parent of all the Douglas Firs on Lord Mansfield's estate.

The drive was resumed to Major Patton's estate, the Cairnies, which was reached at 4 o'clock. Here the large company were entertained to luncheon, and afterwards had the privilege of viewing the treasures on the estate, where the new Conifers were planted with much taste, and growing very luxuriantly. *Abies Pattoniana* was named after Lord Justice Clerk Patton, by whom most of the fine collection of Conifers were planted. *Abies Albertiana*, *Menziesii*, *concolor*, *magnifica*, and others are of great size. After thanking their host and hostess at the Cairnies for their kindness, a drive to Kilour and Balgowan by the party was made, where many of the beautiful new Conifers are to be seen—some fine Cedars and Oaks are admired. After renewed hospitality the party thanked their host and hostess, Captain and Mrs. Black, then returned to Perth in time to catch their trains north and south, after one of the most profitable and enjoyable excursions the Society has held in late years.

MAIDENHEAD HORTICULTURAL.

AUGUST 11.—Outside of London, this is one of the best shows we have seen, where the competition is mainly confined to the exhibitors of the district. There was this year a slight falling off in the number of entries in the plant classes, but this was amply compensated for by the several miscellaneous trade exhibits, and by the fine productions and large number of entries in the amateurs' classes. Amongst these latter exhibitors there appears to be a keen spirit of rivalry.

Plants.—Mr. Lockie, gr. to G. Fitzgerald, Esq., Oakley Court, Windsor, was one of the most successful exhibitors of plants, taking 1st prizes for twelve fine foliage plants, these were well-grown and of useful size, consisting of *Crotons*, *Dracænas*, *Palms*, with varieties of *Asparagus* and *Acalyphas*. Mr. Lockie was first also for a specimen plant in flower, staging a tuberous *Begonia* some 4 feet through; also for six *Fuchsias* in fine health and profusely flowered. In the smaller group he was also the most successful with a bright arrangement.

Another successful exhibitor at this show was Mr. Lindsay, gr. to the Dowager Duchess of Buccleuch, Ditton Park, Slough. He staged a splendid group in the larger class, and easily won the 1st prize. From the same source came the finest Ferns, a Medal being also awarded in this class for excellence of culture; *Microlepia hirta cristata* being a noteworthy example. With a finely-grown *Gymnogramma Alstonii*, Mr. Lindsay beat Mr. Lockie for a specimen foliage plant, the latter staging a well-grown *Asparagus plumosus nanus*. Mr. Lindsay was also first for six zonal *Pelargoniums*.

The finest tuberous *Begonias* were those shown by Mr. A. Deadman, gr. to G. Higgins, Esq., Ray Park. Mr. Lockie came up close for 2nd place.

Table plants were best from Mr. E. Johnson, gr. to A. Gilliat, Esq., Stoke Green, Mr. Lindsay following. Mr. Fulford also showed well in this and the class for twelve fine foliage plants.

Cut Flowers.—For Roses, Mr. Taylor, nurseryman, Hampton, and Mr. Wicks, Upton Court, Slough, were the most successful. Dahlias (show) were finest from Mr. Walker, Thame, and Mr. W. Pond, both exhibiting in good form, considering the early period.

Zinnias are generally staged in remarkably good quality at Maidenhead. The best this year came from Mr. Young.

Fruit.—The competition in the chief classes at this show is always keen, and the quality of the best, the district well sustaining its reputation against others from a distance. For a collection of six kinds, Mr. Gibson, gr. to Earl Cowley, was 1st, with fine examples; Mr. Goodman, gr. to Miss Hammersley, Bourne End, was a near 2nd, but an over-ripe Melon detracted from the collection. There were eight entries in the class for hardy fruits grown in the open air, Mr. Goodman being in this case 1st, with well-ripened fruit.

Mr. Marcham, gr. to Miss Arnott, Englefield Green, was 1st for four dishes, Grapes included, and also 1st with three bunches of Black Hamburgs, having in each instance what was apparently the Mill Hill variety, fine in berry, and well-ripened; Mr. Gibson in this latter instance being exceedingly close. For Muscats, Mr. A. Johnson was 1st; Mr. Osman following hard upon him. For any other black, Mr. Goodman was 1st with Alicante, well-coloured and ripe, as against large bunches of badly-finished Madresfield Court. For any other white, Mr. Osman was 1st with Foster's Seedling.

In the single-dish classes the best Peaches came from Mr. A. Johnson, the best Nectarines from Mr. D. Paxton, who also had the best culinary Apples; and Mr. J. Davis the best dessert Apples.

Vegetables.—In collections for Messrs. Sutton & Son's prizes the competition was very keen. Mr. Lockie was 1st with very fine produce, Mr. Johnson following him closely.

For Messrs. Webb & Son's prizes, Mr. Lockie again won with similarly good dishes, being in this case followed by Mr. A. Mackay, gr. to Rev. R. F. Spencer, Tyler's Green.

For Messrs. Carter & Son's prizes, the 1st was awarded to Mr. Goodman, and the 2nd to Mr. Young, both showing well.

Tomatoes were very fine, the best coming from Mr. A. Mackay. Mr. Lockie was 1st for Cucumbers; and Mr. Lindsay had the best Celery. Potatoes throughout the show were of extra good quality.

In the amateur classes, mention should be made of Mr. H. Arrowsmith, who showed exceedingly well in the classes for plants and vegetables, notably for a collection of the latter; the best fruit coming from Mr. W. Peto and Mr. Sheppard.

Miscellaneous exhibits greatly assisted, and the thanks of the Society are especially due to Messrs. Veitch & Sons, who sent a superb assortment of annuals and herbaceous cut flowers, with some remarkably fine Marigolds; to Mr. Phippen, Reading, for excellent examples of floral arrangements; to Mr. Owen, for tuberous *Begonias* of superior quality; to Mr. Such, for a miscellaneous collection of flowers; and to Mr. Williams, gr. to W. H. Grenfell, Esq., Taplow Court, for a group of well-grown decorative plants.

ST. ALBANS HORTICULTURAL.

AUGUST 11.—The weather was bright, and the various products staged were of excellent quality, with very few exceptions, and in some classes the competition was very keen.

The largest tent was devoted to the classes open to all subscribers, and here not a word of criticism can be given. The 1st prize for foliage plants fell to Mr. T. Nutting, gr. to B. Maple, M.P., Childwickbury, Harpenden; Mr. Fergusson, gr. to Mr. McIlwraith, taking 2nd; these gentlemen occupying the same position in the competition for stove and greenhouse plants.

The class for six flowering or foliage plants did not bring many competitors, and Mr. Nutting was again the 1st, and Mr. Fergusson, gr. to Mr. McIlwraith, 2nd. The group of miscellaneous plants arranged by Mr. Nutting was very light and graceful, and easily secured 1st.

A special prize was offered for a group of ornamental foliated plants, and Mr. E. Beckett, gr. to H. H. Gibbs, Esq., Aldenham House, was 1st with a highly-coloured collection of *Crotons* and *Dracænas*, edged with *Carex*, and the groundwork of *Tradescantia zebrina*, &c.

Roses could not be expected to be so good as in June, but still there were some good ones shown. Mr. Beckett and Mr. Willsher, gr. to Mr. W. H. Bigham-Cox, were 1st and 2nd respectively, for both classes of twenty-four distinct and six Teas. Mr. Bush, an amateur of St. Albans, taking the 1st for twelve H.P.

The competition between Messrs. Beckett and

Nutting for the prize for cut stove and greenhouse flowers was keen, and were awarded as their names are mentioned.

Mr. F. J. Smith, of St. Albans, secured 1st for twelve varieties of herbaceous flowers.

The class for an unlimited number of herbaceous flowers was, perhaps, one of the most interesting exhibits of the show, fifty varieties being staged in the 1st prize—Mr. E. Beckett's.

Fruit was good. Mr. Beckett secured 1st for white Grapes, with well-finished bunches of Muscats; and Mr. Nutting 2nd. Both these gardeners staged black Grapes, Gros Maroc, Mr. Beckett's two bunches being well coloured and good shaped bunches, Mr. Nutting's bunches being larger, but not so well-shaped. The prizes were awarded in the above order.

Peaches, Nectarines, Cherries, and Melons were well shown. Vegetables were a fine display, especially Tomatos and Cucumbers, Mr. Beckett getting 1st in both classes, exhibiting his Victory Cucumber. Mr. Sconce was 2nd in the latter class, and Mr. Nutting in the former.

The collections of vegetables were very fine, and admirably staged. Mr. Beckett was 1st for both Carter's and Sutton's collections. Mr. Dormer, gr. to Mr. Roulad, Elstree, being 2nd in the latter class, and Mr. J. Timson in the former.

Cottagers' and amateurs' are now staging much better than in former years, giving more attention to the cleanliness of exhibits, and putting them up to the best advantage. The ladies tent for table decoration bouquets and buttonholes—showed great taste in the arrangement. Honorary exhibits were numerous. Mr. Cutbush, nurseryman, of Highgate and Barnett, and Mr. Spriggings, of St. Albans, sending miscellaneous groups; Messrs. Paul of Waltham, and of the Old Nurseries, Cheshunt, sending Roses and herbaceous flowers; and Mr. H. H. Gibbs contributing four very large Palms, and several smaller ones, to form a central group; and Mr. Sander sending some specimens of Orchids.

CHEADLE HORTICULTURAL.

AUGUST 12.—The twenty-fifth annual show was held on the above date, and extended to the following day. A complete success was the result, and the number of entries was the highest record of the Society, viz., 683.

The best prizes were offered for twelve stove or greenhouse plants, distinct, not fewer than five flowering, arranged within the space denoted by the Committee. The 1st prize was taken by the Earl of Zetland, with wonderfully fine specimens; whilst Mr. J. Watts and Mr. T. H. Sykes were 2nd and 3rd respectively.

For six stove or greenhouse plants, Mr. Sykes was 1st, and the Earl of Zetland 2nd.

In most of the leading plant classes, the competition lay between the Earl of Zetland, Mr. Sykes, and Mr. J. Watts.

Mr. J. Watts also secured 1st prize for a collection of fruit, six dishes, and Colonel Dixon 2nd. For three bunches of Grapes, distinct varieties, Mr. W. H. Verdin was 1st, and Mr. W. Bromley, Davenport, was 2nd. For six dishes of hardy fruits, Mr. J. Watts was also adjudged best competitor, and Mr. Grundy 2nd.

Mr. T. H. Sykes was 1st for a collection of vegetables, six varieties, and Mr. J. E. Platt 2nd.

NATIONAL CARNATION AND PICOTEE (Northern Division).

AUGUST 13.—The annual exhibition of the northern section of this society was held in the Royal Botanic Gardens, Old Trafford, Manchester, on this date. The southern grown blooms were past their best, but those in the Midland Counties were well in bloom, and took many leading prizes. The classes generally were well filled, and the competition close.

In the class for twelve Carnations, dissimilar, Mr. T. Lord, Todmorden, was 1st with a fine stand of blooms, which contained the premier Carnation in the exhibition, Admiral Curzon, a very fine brown; 2nd, Mr. R. Sydenham, Birmingham; 3rd, Mr. A. R. Brown, Birmingham.

In the class for six Carnations, dissimilar, 1st, Mr. Crossley Head, Hebden Bridge; 2nd, Mr. C. F. Thurstans, Wolverhampton; 3rd, Mr. J. Bleackley.

For twelve Picotees, dissimilar, the competition was very close, and classes were well filled, the blooms running very fair generally; 1st, Messrs. Thomson & Co., with a superb stand of Little Phil, Henry, Nellie, Campanini, Thomas William, Mrs. A. Chancellor, Dr. Huxley, Seedling, medium rose edge,

very pure in the ground colour, and a fine flower; Mrs. Sharp, John Smith, Constance Heron, Elizabeth, and Brunette. 2nd, Mr. Robert Sydenham, in whose stand was a fine bloom of Lakin's Ne plus ultra, not yet sent out, a very fine heavy red-edge flower. 3rd, Mr. T. Lord. 4th, Mr. A. R. Brown.

For six Picotees, dissimilar.—1st, Mr. Thurstans, with Zerlina, very clear and exceedingly fine, and the premier Picotee in the exhibition; Edith Dombrian, Thomas William, Mr. Rudd, Morning Star, and Nymph. 2nd, Mr. J. Edwards. 3rd, Mr. J. Bleackley.

For twelve self Carnations, not more than two flowers of a variety.—1st, Messrs. Thomson & Co., Birmingham, with fine blooms, some of them quite new, such as Mrs. Joseph Chamberlain, a lovely salmon colour, of fair form; Aurora, a rosy-carmine self; Negress, new, very dark; and other fine sorts. 2nd, Mr. A. R. Brown. 3rd, Mr. J. Edwards.

For six selfs, not more than two flowers of any one variety.—1st, Mr. A. W. Jones; 2nd, Mr. W. Kenyon.

In the class for twelve fancy varieties, Messrs. Thompson were again 1st, with a superb stand of flowers, their own seedlings, A. W. Jones especially fine; also Mrs. Robert Sydenham and some of Benary's new varieties. 2nd, Mr. A. R. Brown.

For twelve fancy varieties of Carnations or Picotees, Messrs. Thomson & Co. were 1st, with superb blooms, Mrs. Robert Sydenham, very fine indeed, and other first-class kinds. 2nd, Mr. A. R. Brown. 3rd, Mr. B. Simonite.

For six Fancies.—1st, Mr. R. Sydenham; 2nd, Mr. A. W. Jones.

In the classes for single blooms, a large number of flowers were staged, the 1st prize flowers in each class being—scarlet bizarre, Robert Houlgrave; crimson bizarre, Master Fred; pink and purple bizarre, Bruce Findlay, new; scarlet flake, Sportsman; rose flake, Seedling J. P. Sharp, raised by Mr. Simonite; purple flake, Squire Whitbourn.

Picotees.—Heavy red edge, John Smith; light red edge, Thomas William; heavy purple edge, Zerlina; light purple edge, Clara Penton; heavy rose or scarlet edge, Campanini; light rose or scarlet edge, Nellie.

Premier Carnation, Admiral Curzon, by Mr. Lord. Premier Picotee, Zerlina, by Mr. Thurstans.

Certificates were granted to Mr. B. Simonite, for R. F. Carnation, J. P. Sharp; and to Mr. Tom Lord, for P.P.B. Carnation, Bruce Findlay.

CLAY CROSS FLOWER SHOW.

AUGUST 16.—Clay Cross is famous for its intimate connection with George Stephenson, the great railway engineer, who constructed its famous tunnel, running through three parishes, and founded the extensive works which are now known far and wide. The Clay Cross Company has always taken a deep interest in the objects for which the Society was started in the midst of such a large colliery population, and the President for the present year is Mr. John P. Jackson, the managing director of the Company. The need for the operations of such a society as the Floral and Horticultural Society is always apparent in large colliery villages, and the promotion of a love of horticulture can only be attended with beneficial results. The Society has now been in existence between thirty and forty years, and year by year it appears to grow both in dimensions and popular favour. Given a fine day, the exhibition is always sure to be a huge success. The total expenditure in connection with the annual show, which took place on this date, amounted to £650. Unfortunately the weather was not by any means such as could have been desired. Nevertheless, the attendance was very large, though perhaps it did not come up to that of last year, when over 10,000 people passed through the gates.

One of the three large marquees was set apart for the groups, which always form a decidedly popular feature at the Clay Cross shows. The value of the 1st prize was £16, 2nd £14, and the 3rd £12. The 1st fell this year, as it has done several times in previous years, to Mr. J. Ward, gr. at Riddings House, Alfreton, with a group which reflected great credit upon Mr. Ward's taste and skill. It was composed chiefly of Crotons, Palms, and striped grasses.

The cut flowers made a beautiful display, and this was especially the case in the 2nd class, which was devoted to cottagers—an encouraging fact for the promoters. The Roses in the open class were a fine collection. Mr. Lamb of Nottingham showed a seedling Picotee, which he named the Duchess of Portland. The same variety was awarded a First-class Certificate at the Oxford Carnation and

Picotee Union, and another at the Birmingham Carnation Society's Show, both in the present month. Mr. J. W. Wilson, of Handsworth, showed a fine yellow-ground Carnation named Mrs. Wilson.

Fruit and vegetables were quite up to the average; indeed, better have never been shown at Clay Cross. For farm produce the season is a backward one, but the exhibits were quite as good as could be expected.

TROWBRIDGE HORTICULTURAL.

AUGUST 17.—This time-honoured Society held its forty-third exhibition on the above date, as usual in a field near the railway station; this field by reason of the munificence of a townsman, being now set apart permanently for this and other public and festive purposes. As usual, four large tents were filled with exhibits; and in the open class, Mr. G. Tucker, gr. to Major W. P. Clark, was 1st with nine stove and greenhouse plants, having very good examples indeed of Dipladenia Brearleyana, Bougainvillea glabra, Allamanda Hendersoni, an excellent piece of Schubertia grandiflora, &c.; 2nd, Mr. H. Matthews, gr. to W. R. Brown, Esq., both of Trowbridge. Mr. Tucker also had the best six plants; and Mr. Matthews the best three. The best specimen plant was Erica Marnockiana, from Mr. H. Matthews; Mr. J. Hiscox, gr. to E. B. Rodway, Esq., was 2nd, with an admirable Allamanda Hendersoni.

Heaths were fairly good; Gloxinias highly creditable; Begonias, double and single-flowered, were very good, especially those shown by Mr. C. Richman, gr. to G. L. Palmer, Esq., Trowbridge. Some small but well-grown and flowered Orchids were shown in the class for four distinct. Zonal Pelargoniums very fine indeed; Petunias, Balsams, Cockscombs, &c., were all good features; indeed, it is rarely Petunias are seen to such advantage as at Trowbridge, where they are shown in the form of real specimen plants.

The best collection of nine ornamental foliaged plants were staged by Mr. H. Matthews. A half-dozen plants of Coleus were the best we have seen for many a day; the varieties were Butterfly, Mrs. C. Simpson, Beckwith's Gem, Mrs. Sheriff, Mr. C. Hart, and Lady Dacre, all very fine exhibition varieties, shown by Mr. H. Matthews. One leading feature at Trowbridge is the groups of fifteen Ferns and mosses, always well grown, but too frequently inconveniently crowded. The best collection came from Mr. G. Tucker, who had splendid examples of Gymnogramma sulphurea, and the silvery argyrophylla, to which were awarded the *Gardeners' Magazine* Medal for special cultivation; Cheilanthes formosa, C. elegans, Davallia hemiptera, some fine Adiantums, &c. 2nd, Mr. H. Pocock, gr. to J. P. Haden, Esq., also with some very good specimens.

Groups of plants arranged for effect made a good feature also, but the space allotted to them is almost too small to display the abilities of the decorator. Mr. G. Pymm, gr. to Mrs. Gouldsmith, Trowbridge, was a good 1st.

Fuchsias showed a falling off, probably owing to the coldness of the nights, at a critical time to the growers about Trowbridge, who produce some of the best plants seen in this country, having to finish their plants in the open air. Mr. G. Tucker had the best six. The varieties were Final, Arabella, Gustave Doré, Bountiful, Henry Brook, and Marginata. 2nd, Mr. H. Pocock, with plants only just inferior. Mr. Tucker also had the best four, staging Arabella, Charming, Doel's Favourite, and Mrs. Rundle; Mr. H. Pocock was 2nd.

In the cut flower department, Dahlias were finely shown by Messrs. Keynes, Williams & Co.; T. Hobbs, of Bristol; and F. Lindsay, of Frome; Roses by Dr. Budd and Messrs. Geo. Cooling & Son, both of Bath, the latter having Ernest Metz, Tea-scented—very fine indeed; Gladioli, German and French Asters; bunches of annuals, very good indeed; Carnations, Pansies, Hollyhocks, &c., including table decorations and wild flowers, were in excellent form. Rarely have better Roses been shown at this season of the year, and they were as numerous as they were fine.

Fruit was quite up to its usual high character. With a collection of ten varieties, Mr. G. Pymm was 1st, with excellent examples of Black Hamburgh and Foster's Seedling Grapes, Dymond and Royal George Peaches, Pine-apple and Lord Napier Nectarines, Moor Park Apricot, &c.; 2nd, Mr. J. Gray, Frome, with six dishes. Mr. W. Iggulden, The Gardens, Marston, was 1st with Black Hamburgh and Muscat of Alexandria Grapes, Barrington Peach, Elruge Nectarine, &c.; Mr. J. Attwell, gr. to J. B. Brian, Esq., Bristol, was 2nd.

Black Hamburgh Grapes were well shown by Messrs.

Cray and Edwards, grs. to Captain Tucker, Frome; Buckland Sweetwater by Mr. Attwell; Madresfield Court by Mr. Iggulden; and Muscat of Alexandria, by Mr. A. Miller, The Gardens, Rood Ashton; and Mr. Iggulden, Melons, Apricots, Greengages, and other Plums; Cherries, Peaches, and Nectarines were all good and plentiful.

There was a great lot of dessert Apples, Beauty of Bath, Irish Peach, Astrachan, King of Pippins, Quarrenden, Juneating, &c. Among culinary varieties, were good dishes of Ecklinville Seedling, Lord Suffield, Peasgood's Nonsuch, Improved Hawthornden, and Emperor Alexander.

Messrs. George Cooling & Son, had several baskets of Beauty of Bath Apple, fine in appearance and richly-coloured.

Vegetables of fine quality, were largely shown, and the cottagers' classes were also good.

HASTINGS HORTICULTURAL.

AUGUST 17.—An exhibition of some considerable extent and merit was held by the above in the Alexandra Park, Hastings. The strong features of the show were undoubtedly flowering, stove, and greenhouse plants, exotic Ferns, Crotons, Fuchsias, and zonal Pelargoniums, among ornamental subjects, and vegetables, those of cottagers especially being of marked good quality, and of these we may specialise the Potatoes, Cabbage, Lettuce, Beans, Peas, Turnips, Carrots of the short early-rooting varieties, and Tomatoes.

Messrs. Bunyard of Maidstone contributed a useful object-lesson in the variety of the early Apples, Plums, Peaches, and Nectarines, which he showed, and one that is much required by local growers, who have little that is new to show in fruits, if one may form an opinion on this subject from what is visible in the fruiterers' shops.

We noted the fact that the bulk of the best prizes in the open and amateurs' classes fell to a few well-known "old hands," new aspirants apparently being quite absent from the competition. The following are the chief winners of prizes:—

Open classes.—For eight stove and greenhouse plants, distinct, 1st, Mr. E. C. Gilbert, Springfield Nursery, Hastings, for well-flowered, large, and fresh-looking specimens of Allamanda Wardleana, A. grandiflora, the fine dark blue coloured *Statice imbricata* Gilbertii, Erica cerinthoides coronata, the only plant that was under specimen size, but it was well-flowered; the white *Lapageria* and *Rondeletia speciosa*, a plant which looks better when it is not so stiffly trained as was this one.

In this class, Mr. J. Portnell, gr. to Sir A. Lamb, Bart., Beaufort Park, was made an equal 1st, with three excellently flowered *Ericas*, viz., *MacNabiana*, *Irybana*, and *Austrianiana*, *Ixora Frazieri*, *Allamanda Hendersoniana*, a nicely-bloomed *Dipladenia amabile*, a profusely-flowered *Bougainvillea glabra*, and *Statice imbricata* Gilbertii.

Collections of stove and greenhouse plants, six in number, in or out of flower, brought a few nice lots, the 1st prize falling to Mr. Portnell for a *Bougainvillea*, *Anthurium Scherzerianum*, *Erica Irybana*, a *Croton*, &c. Mr. A. Offer was successful in the one foliage plant competition, he showing *Croton D'Israeli*, a plant with beautifully-coloured leaves.

Some pretty plants of the older varieties of *Begonia tuberosa*, with pendulous flowers, were shown by Mr. J. Davidson, of Silverhill, Hastings, and others, the first-named exhibitor securing the 1st prize.

Tree and other exotic Ferns of large growth were rather largely shown. Mr. A. Offer, gr., Handcross Park, Crawley, taking 1st prize with, among others, a fine plant of *Davallia Mooreana*, *D. polyantha*, *Microlepia hirta*, *Marattia alata*, *Cibotium Schiedei*, &c. Mr. E. C. Gilbert was 2nd, his *Dicksonia antarctica*, *Alsophila excelsa*, and *Microlepia exaltata* being the best of his lot. Mr. A. Offer took the 1st prize for eight variegated and ornamental-leaved plants, with three finely-coloured *Crotons*, an *Alocasia macrorrhiza*, and *Kentia Belmoreana*; Mr. E. C. Gilbert being 2nd, with several species of Palms, a Tree Fern, &c.

Fuchsias were a notable feature, the well-grown and flowered examples shown ranging from 5 to 7 feet. The varieties consisted of Bountiful, Mrs. Randle, Mdle. Tieljens, Doel's Favourite, and Arabella. Mr. Portnell was 1st, and Mr. Lavender, gr. to — Tubbs, Esq., 2nd.

Mr. Alfred Gadd, gr. to P. A. Eagles, Esq., was awarded 1st prize in the class for a single flowering plant, for a grand mass of *Vallota purpurea*, measuring 4 feet in diameter.

The fruit shown in the open classes did not make much of a show as a whole, nor was there anything that called for special notice, excepting a quite small black Fig, named *Betada*, shown by Mr. Carter, gr. to Freeman Thomas, Esq., and some very fair bunches of black *Hamburgh Grapes*, shown by Mr. A. Gadd.

Amateurs and Gardeners.—For six specimens, distinct, of stove and greenhouse plants in bloom, 1st, Mr. Portnell, his plants being in some instances of the same species and varieties as those shown by him in the open class, only smaller. Mr. A. Gadd was 1st for four plants in bloom, but which he had tried to spoil with a good deal of success by stiffly training them. Mr. Offer was 1st for four specimens of ornamental foliage plants, with a very fine *Maranta Makoyana*—a species now seldom seen well-done; *Dieffenbachia magnifica*, and a beautiful *Croton undulatus*. Mr. Portnell showed Fuchsias, and obtained 1st prize, but it was evident that he had bestowed all his strength on the open class, his exhibit in this division being very weak.

A noteworthy feature was the various exhibits of cut blooms of annuals. It is one deserving of greater encouragement than it obtains at present.

A considerable amount of space was occupied with cut flowers, herbaceous perennials, Dahlias, Asters, Verbenas, Phlox Drummondii, Roses, Marigolds, Picotees, and Carnations, several trade exhibits assisting materially in this division.

Groups were shown, but the space allotted to each was too small to allow of much variety being introduced into the arrangement, or of much variety of materials. The exhibitor of the least variety was, perhaps, Mr. E. C. Gilbert, and the judges, evidently impressed by his numerous examples of *Francoa ramosa*, standing amongst a number of green and variegated plants of low stature, awarded him the 1st prize. The other groups consisted of the usual small stove and greenhouse plants in greater or less variety. Given a fire-place, a closed doorway, a corner in an apartment or a vestibule, a table or stand, or a large flat vase, or a fountain, how should these various positions or places be gracefully filled with plants in or out of flower? These are the kinds of exercises that exhibitors should have set them at a show, and not the arrangement of mere groups of one size and form.

Vegetables were largely shown and good, equally those shown by amateurs, cottagers, and market gardeners.

Table decorations of the usual character seen at flower shows were numerous and varied.

ASCOT HORTICULTURAL AND INDUSTRIAL EXHIBITION.

AUGUST 17, 18.—The annual summer show of the Sunninghill, Ascot, and Sunningdale Horticultural Society was held on Wednesday and Thursday (after a week's postponement), at the Grand Stand, kindly lent for the occasion by the Trustees. The ball-room was set apart for the industrial and fruit exhibits, Mr. Phippen, of Reading, filling one end of the spacious building with a fine collection of Lilies, Palms, *Dracenas*, Carnations, Ferns, &c., one of the chief features in the group being a magnificent wreath composed of Lilies and Ferns. Messrs. Cannell & Co., of Swanley, showed a good assortment of *Begonias*; and Mr. Pontin, of Wokingham, some Tomatoes and Cucumbers. Besides these trade exhibits, Mr. C. E. Barnett, of King's Beeches, Sunninghill, showed a fine collection of flowers and plants; and Miss Belcher, of Spring Grove, Sunningdale, had a good display of *Gloxinias*, *Begonias*, *Pandanus*, &c., all these exhibits being not for competition. Not the least interesting display made in this room was on the stalls of the Ascot and Sunninghill ironworkers—young men and boys of the neighbourhood who fill their spare time up with making a variety of articles out of strips of iron with pliers and other simple tools. Miss Barnett, of Sunninghill, and the Rev. H. Wilson, of Ascot, superintended this branch of industry. The principal articles exhibited were lamp-brackets, picture-frames, vase-stands, large and small screens, &c., in numerous designs. In the ante-room were arranged a number of the vegetable exhibits, and a collection of flowers, *Pelargoniums*, Fuchsias, *Hydrangeas*, *Heliotrope*, and Ferns. The rotunda was chiefly set apart for the groups, Mr. Magniac, of The Hermitage, Ascot, supplying a magnificent central group of Ferns, surrounded by Fuchsias, *Pelargoniums*, and other flowers. Mr. C. D. Kemp-Welch, the Hon. Ashley Ponsonby, and Mr. E. Hamilton also

showed fine groups, consisting of Lilies, foliage plants, Palms and Ferns forming the groundwork. Messrs. Standish & Co., of the Ascot Nursery, had the largest group. Sir W. Farmer, of Cowarth Park, Sunningdale, and Miss J. D. Smith, of King's Ride, Ascot, were also non-competitive exhibitors.

SHREWSBURY FLORAL FETE.

AUGUST 17, 18.—Favoured with fine weather the whole time, there was an enormous attendance of visitors, and the exhibition was a grand one.

A large tent was devoted to stove and greenhouse and other plants, and in the class for sixteen stove and greenhouse plants, not less than eight in flower, there were three exhibitors. 1st, Mr. Cypher, Cheltenham; 2nd, Mr. W. Finch, gr. to J. Marriott, Esq., Coventry; 3rd, Mr. J. Mould, Pewsey, Wilts.

For six plants, the two collections from Mr. Cypher and Mr. Marriott were so close, that equal 1sts were awarded. In the Cheltenham lot were *Bougainvillea glabra*, *Ixora Pilgrimii*, *Allamanda nobilis*, *Erica Austiniana*, *E. Marnockiana*, and *Phenocoma prolifera* Barnesii, very fine. In Mr. Marriott's were a grand *Ixora Duffii*, with twenty-five trusses, and two fine *Ericas*. Mr. Cypher also staged plants not for competition, consisting of twenty stove and greenhouse specimens.

A great deal of interest was concentrated in the groups, and six were set up for competition; they were all arranged on one side of the large tent, and were to occupy 300 square feet. Mr. Blair, Trentham, was 1st, with a beautifully worked-out group, with a charming background of Bamboos, all artistically arranged; 2nd, Mr. Cypher; 3rd, Mr. C. H. Wright. There was a great fault in some of the groups obtaining the Town prizes, in the plants being too closely grouped together; still, taking them all round, they were a very fine lot.

The classes for Ferns and Palms were all well filled. Mr. Cypher was a strong 1st for a group of not less than twenty *Orchids*, with from fifty to sixty plants, charmingly arranged amongst Ferns and other plants, and some choice things amongst them; a grand plant of the very lovely *Sobralia xantholeuca*, of rich cream colour, was conspicuous; some plants of *Dendrobium Phalenopsis*, one almost a white, and all varying; *Vanda cœrulea*, with twelve large blooms; *Cattleya Dowiana* and *gigas*, very rich in colour; *Cypripedium grande*, very fine; *Oncidium dasyle*, the Bee Orchid, and others. Mr. Blair set up a nice lot, in which were six or eight fine plants of *Oncidium macranthum*, and a handsome *Bilbergia* in flower, the name of which we could not ascertain. Mr. Blair's six *Dracenas* were excellent, especially a plant of *D. Lindenii*, which was very good in colour.

The zonal *Pelargoniums* generally were excellent, especially the 1st prize lots of six singles and six doubles, by Mr. Myers, florist, Shrewsbury. These were two grand lots of admirably-grown plants with superb trusses of flower.

A few good *Begonias* were staged, especially the 1st prize six from W. Beacall, Esq., Summerford. *Coleuses* were well done generally, and the classes for fifty miscellaneous plants brought out a capital lot of exhibits; 1st, Messrs. Jones & Son, Shrewsbury; 2nd, J. H. Darby, Esq., Winham.

CUT BLOOMS.

There was a great display of cut flowers, and with twenty-four *Roses*, Messrs. Harkness & Sons were 1st, and Messrs. Perkins being a good 2nd; a quantity of excellent blooms was staged throughout. Large prizes were offered for a collection of Dahlias, all kinds, in a space of 15 by 6 feet, and four lots were staged; 1st, Messrs. Keynes, Williams & Co., Salisbury; 2nd, Mr. G. Humphries, Chippenham; 3rd, Messrs. Jones & Son.

In the classes for thirty-six and twenty-four Dahlias, some fine stands were set up. For thirty-six, 1st, Messrs. Kimberley & Son; 2nd, Mr. Humphreys; 3rd, Mr. J. Walker, Thame. For twenty-four, 1st, Mr. Walker; 2nd, Messrs. Keynes & Co.; 3rd, Messrs. Kimberley & Son.

Large prizes were offered for a collection of *Gladioli*, to fill a space 24 by 6 feet, but there was only one competitor, and his blooms were not sufficiently good to warrant a 1st prize of £5 and Silver Medal being awarded to it, so that a 2nd prize only was awarded. Messrs. Kelway & Sons staged a beautiful lot, not for competition, and a few Certificates were awarded to new varieties.

In the class for hardy herbaceous cut flowers, to fill a space 16 by 6 feet, there was a large display; 1st, Mr. Cuthbertson, Rothesay; 2nd, Messrs. Dick-

sons, Limited; and 3rd, Messrs. Harkness & Sons; but in some of the collections a good number of Carnations, Pentstemons, and Antirrhinums appeared, whilst others kept to the old acknowledged herbaceous flowers. It would be a wise step on the part of committees to adopt the wording as "hardy border flowers," excluding undesirable species and varieties. At Shrewsbury a protest was lodged against the admission of Carnations, Pentstemons, and Antirrhinums, and it is best to have the groundwork of the schedule as clear as possible for both exhibitors and judges.

Some fine Carnations and Picotees, the latter especially, were staged for prizes, Mr. Robert Sydenham being 1st for both; and Messrs. Thomson & Co., Birmingham, was 1st for twelve grand fancy Picotees, in which the very fine new variety, Mrs. R. Sydenham, was conspicuous.

The competition for two bouquets, 1st prize, £5 and Silver Medal, was hotly contested, and a grand lot were staged. 1st, Messrs. Jenkinson & Son, Newcastle-under-Lyme; 2nd, Messrs. Jones & Son; 3rd, Messrs. Perkins & Sons. Six epergnes were staged. Messrs. Jones & Son 1st, with a light elegant arrangement.

A new feature here were the prizes for dinner-tables for eight persons, and there were five exhibitors. 1st, Mr. J. R. Chard, Stoke Newington, very pale blush and creamy-yellow flowers only; 2nd, Messrs. Jones & Son, with a beautiful arrangement, but the three large epergnes rather overdid it.

Fruit.—Fruit is always a great feature at Shrewsbury, and, taking the season into consideration, there was a fine display. Black Grapes in many cases were well-coloured, and, in some cases also, not ripe. White Grapes, with a few exceptions, wanted colour. Excellent prizes were offered for collections of twelve dishes, and the competition was exceedingly close betwixt the 1st and 2nd prize lots. Mr. Dawes, gr. to the Hon. Mrs. Meynell Ingram, was placed 1st; Mr. Iggulden, gr. to the Earl of Cork, 2nd; Mr. Goodacre, 3rd; and Mr. Blair 4th. In the class for nine varieties, there was keen competition. 1st, Mr. S. Bremmel, gr. to H. H. France Hayhurst, Esq.; 2nd, Mr. C. Roberts, gr. to C. H. Wright, Esq., Halston Hall; 3rd, Mr. G. Pearson, gr. to Lord Berwick.

For six bunches of black Grapes, three varieties, there were nine exhibitors, 1st, Mr. J. Bennett, gr. to the Hon. C. H. Wynn, with a grand lot; 2nd, Mr. Hepburn, The Priory; 3rd, Mr. J. Langley, gr. to the Rev. F. M. Bulkley Owen.

For three bunches of black Hamburgs (eight exhibits) 1st, Mr. J. Bates, gr. to J. T. Harries, Esq., The Hawes, Stoke, with superb highly finished bunches; 2nd, Mr. R. Brownhill, gr. to J. C. Sinclair, Esq., Rockferry. A class for three bunches of black Grapes brought out a good competition, and Madresfield Court was freely exhibited in good character. The classes for white Grapes were also well filled, as were the classes for the Salopian growers.

Peaches, Nectarines, and other fruits were well represented in their various classes, and some of the fruit shown was very fine indeed. Mr. Blair staged twelve good Pines, and was awarded a Silver Medal.

Vegetables were in great force as usual, remarkable quality being strongly represented. The collections generally were very fine, and the single dishes or lots very closely contested. The 1st prize of £5 for a collection was won by Mr. Pope, gr. to the Earl of Carnarvon; 2nd, Mr. T. Wilkins, gr. to Lady Theodora Guest; 3rd, Mr. C. J. Waite.

In the class for collections confined to residents in Salop, Mr. T. Smeatham, gr. to Capt. Cunliffe, Leaton Knowle, was 1st.

The Potatoes were very fine; and for three dishes, Mr. Coombes, The Gardens, Himley, was 1st, with a clean medium-sized lot; and Mr. J. Hathaway, gr. to the Earl of Lathom, was 1st for six dishes, with a very fine lot; Mr. Coombes was a good 2nd; Mr. H. Forden, 3rd, and with nineteen exhibits in this class. The competition was very strong in the single dish classes. Very fine Onions. Tomatoes and other vegetables were also staged in profusion.

Special prizes.—These for vegetables were offered by Messrs. Sutton & Sons, Messrs. Webb & Sons, Messrs. Carter & Co., Messrs. Thomson & Co., and Mr. Sydenham, and very fine exhibits were staged, but want of space compels us to pass over many things deserving of notice.

The honorary exhibits in themselves were sufficient to form a fine exhibition. Messrs. Sutton & Sons staged a grand lot of their superb new Gloxinias, to which a special Gold Medal (the only one ever given at Shrewsbury) was awarded; and Certificates to Gloxinias Her Majesty, Duke of York,

Souvenir de Shrewsbury, Empress of India, and Purple Prince; also to some new winter-blooming Begonias. Silver Medals were awarded to the Liverpool Horticultural Company for a fine display of floral designs; to Messrs. Cutbush & Sons, for a group of plants; to Mr. B. R. Davis, Yeovil, for Begonia blooms—a fine display; to Messrs. Hewitt & Co., Birmingham, for a fine display of plants and cut flowers; to Messrs. Thomson & Co., Birmingham, for 500 blooms of Carnations and Picotees; to Messrs. Cannell & Sons, Swanley, for Begonia and other blooms.

Certificates were also awarded to Messrs. Keynes, Williams & Co., for seedling Cactus Dahlia Mars; to Messrs. Birkenhead, Sale (Silver Medal last year), for Ferns; to Mr. E. Murrell, Shrewsbury, for a fine exhibit of Roses and other blooms and plants; to Messrs. Kelway & Son, for a grand lot of Gladioli (Silver Medal last year, and these are not given two years in succession to one person); to Mr. H. Eckford, for new Sweet Peas; to Messrs. Dicksons, Limited, for plants and cut flowers; to Mr. Myers, Shrewsbury, for collection of plants; to Mr. Chas. Turner, for Picotees and Carnations; to Mr. J. H. Pattison, for Violas; and to Messrs. Thomson & Co., for new self Carnation Mrs. J. Chamberlain. A special extra prize was also awarded to Mr. Wallis, Keele Hall Gardens, for five dishes of five Figs.

Special praise and congratulations were general, and Messrs. Adnitt and Naunton, the hardworking Hon. Secs., and committee, were the recipients.

The attendance on the first day numbered 15,000, and 40,000 on the second. The receipts amounted to £2063 14s., being £297 in excess of last year's takings, and that had hitherto been the highest amount.

BASINGSTOKE HORTICULTURAL.

AUGUST 18.—The above Society held its annual exhibition of plants, fruits, flowers, and vegetables at Hackwood Park. The following are the awards made by the judges in the principal classes:—

Plants.—Mr. Bowerman, gr. to Charles Hoar, Esq., President of the Society, Hackwood Park, had no difficulty in securing the special prize given by his employer for the best twelve plants in or out of bloom, his best plants being of the usual species and varieties. Mr. Holdaway, gr. to Colonel J. May, Hawkfield, Basingstoke, had the best six plants. Mr. Russell, gr. to W. Bradshaw, Esq., Audley's Wood, Basingstoke, had the best specimen stove plant in flower, staging a grand plant of *Eucharis amazonica*, having thirty spikes of flowers. Mr. Holdaway secured the prize given by his employer (Colonel May) for twelve stove and greenhouse plants in or out of flower.

Fuchsias, Pelargoniums, Begonias, British Ferns, and Achimenes were well shown, the Fuchsias being especially fresh and well-flowered, and about 7 feet high.

Groups.—The coveted prize for a group of miscellaneous plants arranged for effect, was awarded to Mr. Weaver, gr. to W. O. Gilchrist, Esq., Oakley Hall, Oakley, for a very charmingly-arranged group. A Palm with arching fronds occupied a central position in the background, and "dot" plants of *Tuberoseas*, *Aralias*, *Pancratiums*, *Cocos Weddelliana*, brightly coloured *Crotons*, a variegated grass, apparently *Dactylis glomerata*, *Francoa ramosa*, *Caladium argyrites*, &c., set on a base of Maidenhair Fern, the whole being edged with Ferns, *Caladium argyrites*, &c. Mr. Bowerman was a close 2nd, the back part of his group wanted fullness and height.

Fruit was fairly well shown in sixteen classes. With a collection of eight kinds Mr. Bowerman was a good 1st, staging two kinds of Grapes, a Melon, Humboldt Nectarines, Dymond Peaches, Hemskirk Apricots, Washington Plums, brown Turkey Figs; a good all-round lot of fruit. Mr. T. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, Chertsey, was 2nd, his collection including two handsome bunches of black Hamburg Grapes.

Mr. Best, gr. to Mrs. Chute, The Vyne, Basingstoke, was 1st, staging black Hamburg Grapes, Peaches, Nectarines, Figs, Apricots, and Melon.

Out of four lots of black Hamburg Grapes staged, Mr. Osman was a good 1st with shapely bunches, fine in berry and finish.

Mr. Bowerman was 1st in the any other black class, with nice bunches of Gros Maroc; and Mr. Osman was 1st in the any other white Grape class, with Foster's seedling.

Mr. Bowerman had the best Peaches out of five dishes, showing well-coloured fruits of *Violette Hative*. He was also 1st for Nectarines, and 1st for three dishes of Plums, staging fine fruits of Belgian

Purple, Early Orleans, and Washington. Mr. Best had the best dish out of three lots of Apricots shown. Mr. Best had the best three dishes of culinary Apples, showing good fruits; and Mr. Kneller, gr. to Wyndham S. Portal, Esq., Malshanger, was 1st for three dishes of dessert varieties, with Beauty of Bath, Red Astrachan, and Mr. Gladstone.

Vegetables.—Special prizes for vegetables, &c., were offered by Messrs. Sutton & Sons, Reading; Webb & Sons, Stourbridge; and Jas. Carter & Co., London, bringing together much excellent produce.

Out of six lots of Tomatoes staged, Mr. H. Remnal, gr. to A. H. Jackson, Esq., West Ham, was 1st, with immense fruits of the Trophy, beautifully coloured.

Cut Flowers.—Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, was 1st in both classes for twenty-four and twelve Roses, distinct.

Non-competitive Exhibits.—Messrs. Sutton & Sons, Reading, had a very bright, attractive, and interesting collection of cut flowers arranged to the best advantage in a prominent position in the principal exhibition tent, interesting and useful as serving to show what a fine floral display may be made by making and growing a judicious selection of annuals. In front of the above-named flowers, which were shown in good-sized bunches, on raised stands, were several fine blooms of their superb double *Petunias* of fine colour, and mostly fringed; and *Gloxinias* in 48-sized pots, a fine strain, the flowers being large, good form, and rich in colour, and thrown well above the foliage.

Mr. Phippen, also of Reading, displayed his art in the manufacture of wreaths, &c.; and Messrs. H. Cannell & Sons, of Swanley, Kent, staged some approved varieties of the Dahlia.

NATIONAL CO-OPERATIVE EXHIBITION, CRYSTAL PALACE.

AUGUST 20.—With a schedule of some 250 classes, and some 700 prizes, it was evident that any detailed report is in these columns out of the question. The show was the fifth of the series, and one of the best, for if in some classes the entries might have been fewer, at least the average quality of the exhibits was superior; still, it affords some evidence of the nature of the competition, that of two classes for Peas in one section, there were fifty single dishes in one, and thirty-five in another; then, of dwarf Beans there were thirty-six dishes, and of Runner Beans thirty-four dishes, Marrows, Onions, &c., running very nearly as liberally; then there were collections in each section for diverse districts, the entries in some being good; others, the more remote, indifferent. In any case, the length of tabling filled with products must have reached fully half a mile, and in some respects were a rather monotonous appearance, which could have been much more effective if the various plants and cut-flower classes had been placed between each vegetable class, as in that way the variety to the spectators would have proved far more attractive. As plants had to be brought in most cases very long distances, they were not all so fresh as could be desired; but some, notably foliage plants, Ferns, and annuals, in pots, were very good. Some of the pot-annuals were beautiful. Stocks, Asters, Marigolds, Coreopsis, Mignonette, Phlox Drummondii, Balsams, *Petunias*, *Lobelias*, &c., were both very numerous and showy. Cut flowers were indeed legion; they could hardly be counted, and were there in many hundreds. Bunches of hardy annuals were in many cases good. The Mignonette in threes and the Sweet Peas in single bunches were delicious. African Marigolds were, in some cases, superb, but the French striped were poor; some, indeed, amusingly so, especially one lot of twelve blooms, stuck singly into large bottles, but that was a particular case. Dahlias, Zinnias, Asters, Stocks, Carnations—indeed, almost every variety of garden flower producible from seed, seemed to be in evidence, presenting a wonderful tribute to the love of flowers which so markedly pervades the working classes.

Fruit, too, was very good. Capital cooking and dessert Apples, Plums, Morello Cherries, Gooseberries, Currants, and Raspberries were excellent; and Tomatoes, though not recognised as fruits, were abundant and good. In the class for three distinct varieties, there were cases where it would have been impossible to find distinctness except in name; hence the folly of making a class that invites such dubious practice.

The same difficulty seems to present itself in the case of Potatoes, where four dishes were invited, for so many as three selections out of the same sort could be found in this class, but then there was no requirement of distinctness. Still, it was

very obviously intended. In the case of single dishes, if less in number than last year the average quality was higher, and some were specially good. The best white rounds were Sutton's Seedling and Satisfaction, Abundance, and Victory. The best-coloured rounds Reading Russet, Vicar of Laleham, Adirondack, and a very handsome variety having white flesh and blotched with purple, named Lord Tennyson. The best white kidneys were International, Chancellor, Snowdrop, and Reading Giant; but large coarse Satisfaction was largely shown as white kidney. Of coloured kidneys the best were Mr. Breese, Ruby, Edgcote Purple, Prizetaker, and Lord Raglan, a very handsome purple-blotched Lapstone. There were some 150 dishes in the four classes in one section alone. Some classes devoted to the gardeners of subscribers brought competition such as we are accustomed to see at ordinary exhibitions.

In the section for the western division, the only exhibitor of a collection of vegetables was Mr. Wright, gr. to C. Lee-Cambell, Esq., whose things were inferior. Better quality was found in the southern section, where Mr. Waite, gr. to Col. Talbot, Esq., was 1st in numerous classes; he had fine Cauliflowers, Leeks, Satisfaction Potatoes, Perfection Tomatoes, white Celery Ne plus ultra, Runner Beans, Telegraph Peas, Giant Rocca Onions, &c., in the collection, and was 1st; and in small dishes, dwarf French Beans, Dell's Beet, Cabbages unduly large, &c. Mr. J. Hutton, Oxford, who was 2nd with the collection, was 1st with "One and All" Runner Beans, really Ne plus ultra; and the same variety in another class, but named Champion scarlet. Mr. J. Martin, gr. to F. Longman, Esq., had very handsome Turnip-rooted Beet; and Mr. J. Martin, gr. to E. V. Neale, Esq., had the best scarlet Intermediate, red Intermediate (same variety), and long Surrey Carrots; all exceptionally good. One lot from Oxford in this latter class had tails 30 inches long. The best white and red Celeries it was evident had been blanched in paper, and were much cleaner than other samples. What was set up as "One and All" exhibition Marrow Pea, was chiefly Duke of Albany.

Fruit was very fair. The best kitchen Apples were Peasgood's Nonsuch, Alexander, and Lord Suffield. The best desserts were Striped Juneating, and Alexandra (Bunyard's Seedling). Mr. Waite had the best collection of six dishes of fruit; Mr. Osman, Ottershaw Park, coming 2nd. Mr. Waite had the two best bunches of black Grapes, and Mr. J. Mossman the best whites; we cannot, however, enumerate other wins.

At the far end of the nave were collections of vegetables, &c., from the Royal Arsenal Co-operative Society, and Mr. Osman, the South London District Schools, Sutton, very good samples; and also one from the Horticultural College, Swanley, which, for a horticultural institution, was not very satisfactory.

TRADE NOTICE.

We are informed by Messrs. F. MILLER & Co., Seed, Bulb, and Plant Growers, 267, Fulham Road, S.W., that their tender has been accepted for the supply of all the bulbs (Hyacinths, Tulips, Crocus, Narcissus, &c.), for planting in all the London parks, squares, and gardens under the control of the London County Council.

MARKETS.

COVENT GARDEN, August 25.

MARKET quiet, with supplies good. Prices generally easier. James Webber, Wholesale Apple Market.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0-4 0	Mignonette, 12 bun. 1 0-4 0
Asters, p. doz. bun. 1 6-4 0	Myosotis, or Forget-me-not, 12 bunches 1 6-3 0
— French, p. bun. 0 9-1 3	Pansies ... 1 0-2 0
Carnations, 12 blms. 0 9-1 6	Pelargonium, scarlet, per 12 bun. 2 6-4 0
— 12 bunches ... 3 0-6 0	— 12 sprays ... 0 6-1 0
Cornflower, 12 bun. 1 6-3 0	Poppies, 12 bunches 2 0-4 0
Eucharis, per dozen 1 0-2 6	Primula, double ... 4 0-8 0
Gardenia, per dozen 1 6-3 0	Pyræthrum ... 2 0-4 0
Gladiolus, doz. bun. 8 0-12 0	Roses, Tea, per dozen 0 9-2 0
— p. doz. spikes 1 0-2 0	— coloured, dozen 1 0-1 6
Heliotrope, per doz. sprays ... 0 3-0 6	— yellow (Maréchal), per doz. 2 0-5 0
Lilium Harrisii, doz. 2 0-4 0	— red, per dozen ... 1 0-2 0
— various, do. ... 1 0-3 0	— outdoor, 12 bun. 2 0-6 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	Stephanotis, 1 spray 1 6-3 0
Marguerite, per doz. bunches ... 3 0-4 0	Stocks, doz. bunches 3 0-4 0
Orchids:—	Sunflower, doz. bun. 3 0-6 0
Cattleya, 12 blms. 4 6-8 0	Sweet Peas, doz. bun. 2 0-4 0
Odontoglossum crispum, 12 blms. 2 0-6 0	— Sultan, 12 bun. 1 6-3 0
	Tuberose, 12 blms. 0 3-0 6

ORCHID-BLOOM in variety.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 1 0-4 6	Peaches, per doz. ... 2 0-8 0
Grapes, per lb. ... 1 0-2 0	Pine-apples, St. Michael ... 4 0-6 0
Kent Filberts, per lb. ... 10	Plums, p. half-sieve 2 6-5 0
Lemons, per case ... 15 0 35 0	
Melons, each ... 1 0-2 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Ficus elastica, each 1 6-7 6
Aspidistra, per doz. 15 0-30 0	Fuchsia, per doz. ... 3 0-6 0
— specimen, each 7 6-21 0	Heliotrope, per doz. 3 0-6 0
Asters, per doz. ... 3 0-6 0	Hydrangea, per doz. 9 0-18 0
Balsams, per doz. ... 3 0-6 0	Lilium Harrisii, doz. 18 0-30 0
Begonia, per doz. ... 6 0-12 0	Lobelia, per doz. ... 2 6-4 0
Campanula, per doz. 6 0-9 0	Marguerite, per doz. 6 0-12 0
Coleus, per doz. ... 3 0-6 0	Mignonette, doz pots 4 0-6 0
Cyperus, per dozen 4 0-10 0	Palms, various, each 2 0-10 0
Dracena, each ... 1 0-5 0	— specimens, each 10 6-84 0
Ferns, various, doz. 4 0-9 0	Pelargonium, p. doz. 6 0-12 0
— per 100 ... 5 0-8 0	— scarlet, p. doz. 2 0-4 0

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-...
Beans, French, lb. ... 2 6-3 0	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 2 0-3 0	Parsley per bunch ... 0 3-0 6
Carrots, per bunch ... 0 4-0 6	Shallots, per lb. ... 0 6-...
Cauliflowers, each ... 0 3-0 6	Spinach, per bushel 3 6-...
Cucumbers, each ... 0 4-0 8	Tomatoes, per lb. ... 0 4-0 9
Endive, per dozen ... 2 0-3 0	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOES.

MARKETS a little firmer. Best samples, 75s. to 85s.; medium, 55s. to 65s. Arrivals not quite so heavy. J. B. Thomas.

SEEDS.

LONDON: Aug. 24.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report an improving demand for Trifolium at advanced rates; the supply of English seed is almost exhausted. For fine white sowing Mustard, which is very scarce, high prices are obtained. New winter Tares keep firm at prices which, owing to the short crop, are higher than those of past years. Rye continues firm. New Rape seed is now coming to hand cheap and good. Canary seed, owing to the heavy exports, and the small supplies remaining, has advanced 3s. per qr., Turkish seed being sold in Liverpool at 80s. per 46 lb. Hemp seed firm. In Millet, Linseed, Dari, and Buckwheat there is no alteration. Samples of new Peas are now coming to hand which show moderate quality. Haricots unchanged.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.	BRIGHT SUN.			
	ACCUMULATED.									
	Above (+) or below (−) the Mean for the week ending August 20.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.	More (+) or less (−) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.			
0	1 —	84	0	— 13 +	212	3 +	153	26 8	20	29
1	0 aver	97	0	— 157 +	241	3 +	123	15 9	34	33
2	0 aver	115	0	— 117 +	186	2 —	120	14 8	27	31
3	2 —	141	0	— 95 +	210	10 +	111	14 4	46	38
4	1 —	130	0	— 70 +	250	4 —	103	13 2	43	35
5	2 —	146	0	— 77 +	138	4 +	90	11 1	45	42
6	1 —	97	0	— 89 +	193	9 +	119	25 1	38	35
7	0 aver	116	0	— 72 +	165	3 —	119	19 1	35	35
8	1 +	127	0	— 18 +	117	5 —	106	14 5	49	42
9	1 —	104	0	— 68 +	122	5 +	128	20 9	27	32
10	0 aver	116	0	— 15 +	132	11 +	115	22 2	30	35
*	2 +	152	0	+ 60 +	42	2 +	106	14 3	53	50

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.

Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

THE following summary record of the weather for the week ending August 20, is furnished from the Meteorological Office:—

"The weather during this period varied considerably in the different parts of the kingdom. In the N.W. and N. it was very unsettled, with a good deal of rain, until nearly the end of the week; in the more S. and S.E. districts, however, it was generally fair and dry, except on Thursday and Friday, when sharp thunderstorms, accompanied by very heavy rainfall, were experienced. By Saturday the conditions had become fine and bright on all excepting our extreme N. coasts.

"The earthquake.—During the night of the 17th—18th, distinct shocks of earthquake occurred at some of our W. and S.W. stations.

"The temperature slightly exceeded the mean over the greater part of England and in the Channel Islands, but did not materially differ from the normal over Ireland and Scotland. The highest of the maxima were registered on the 15th in most parts of Scotland, on the 17th over England, and on the 20th in Ireland; and they ranged from 83° in 'England, E.' 81° in the Channel Islands, 80° in 'England, S.' and 79° in the 'Midland Counties,' to 67° in 'Scotland, W.' and 66° in 'Scotland, N.' The lowest of the minima occurred during the early morning of the 20th, and ranged from 34° in 'Scotland, E.' and 36° in 'Scotland, W.' and 'England, S.W.' to 45° in 'Ireland, S.' and to 54° in the Channel Islands. Over England the minima during the greater part of the week were rather high.

"The rainfall exceeded the mean in all the Irish and Scotch districts, but over England the fall was less equable. In 'England, E.' there was a very large, and in 'England, S.' a fairly large, excess (due to the thunderstorms of Thursday and Friday), but in the other districts there was a considerable deficit.

"The bright sunshine was more prevalent than during the preceding week in nearly all districts. In almost all parts of England, and in 'Scotland, W.' it exceeded the mean, but elsewhere it again showed a deficit."

NOTICES TO CORRESPONDENTS.

APPLE SHOOT: C. S. Johnston. The shoot shows that canker has attacked the tree. Lift the tree, drain the soil, replant in good loam only, keeping the roots within 6 inches of the surface. The cankered places on the shoots should be cleaned of all diseased tissue, cutting it away down to the quick, badly diseased shoots being removed altogether.

BOOKS: N. B. S. Greenhouse and Stove Plants, by Thomas Baines (John Murray, Albemarle Street, London).—FRUIT TREES IN POTS: Subscriber. The Miniature Fruit Garden, by Mr. F. T. Rivers, Sawbridgeworth, Herts; Fruit Culture Under Glass, by D. Thomson (Blackwood & Sons, Edinburgh and London).—R. G. Cassell's Popular Gardening. There was a reissue of this work in 1888. It was edited by Mr. T. D. Fish.

CORRECTION: AZALEA HEXE. Instead of "fresh when cut nearly a month from the plant," read "fresh for nearly a month on the plant."

CYCLAMEN: Davis. Next week.

GARDENING APPOINTMENTS: Webster. These are mostly supplied to us by the men who obtain the situations; sometimes by nurserymen who may have filled them with men on their books, and who occasionally furnish the information. In other cases, we seldom know who has recommended the gardener.

GAS LIGHT: Young Gardener. The fumes of gas are always injurious to plants in rooms, in degree according to the amount of sulphurous vapour it contains.

NAMES OF PLANTS: C. W. D. Gentiana phlogifolia.—W. B. Artemisia Ludoviciana.—J. P. Asclepias tuberosa var.—P. & Sons. 1, Campanula rapunculoides; 2, Senecio nemorensis; 3, Lysimachia vulgaris.—J. F. F. H. 1, a variety of the common Yew, Taxus baccata; 2, Abies amabilis (true); 3, Spiraea araliifolia.—Sphinx. C. r. minor, common in Southern Europe.—V. K. There were two marked 4, but not one marked 2; 1, Abies cephalonica, with cone; 2, Abies Lowiana, long leaves, pale green; 3, probably Abies Webbiana; 4, Abies Nordmanniana, handsome dark green,

with separate cone; 5, Abies Pinsapo; 6, Cupressus torulosa; 7, Thuja (Biota) orientalis var. *G. W. H. 1*, Galega orientalis alba; 2, Veratrum album; 3, Verbascum cupreum; 4, Hemerocallis fulva var. *Thynne & Paton*. Elæagnus longipes, figured in the *Gardeners' Chronicle*, 1873, p. 1015; The fruits are very acid, but not unwholesome.—*C. P.* Linaria vulgaris.—*W. S. 1*, leaf only; 2, Sedum spurium; 3, Oxalis acetosella; 4, leaf only; 5, Melissa officinalis, Balm; 6, Artemisia argentea.—*Llandaff*. Catalpa bignonioides.—*Heythrop*. 1, Scrophularia nodosa; 2, Eupatorium cannabinum; 3, Inula dysenterica; 4, Lysimachia vulgaris; 5, Lythrum Salicaria; 6, Euphrasia officinalis; 7, Vicia cracca; 8, Lotus corniculatus; 9, Valeriana officinalis.—*Dockett*. Impatiens fulva.—*V. K.* Abies Nordmanniana.—*D. B.*, Chelmsford. A variety of Cattleya granulosa.—*Holeyport*. Bignonia radicans.—*Alex. H.* The variation is a singular one, but you may rely on the reply you have.—*Floral*. 1, Not found; 2, Peperomia arifolia; 3, Probably from an old plant of Dracaena marginata; 4, Dracaena hybrida; 5, Selaginella Kraussiana; 6, Croton irregularis; 7, Dracaena gracilis; 8, Croton variegatum.—*D. Davis*. 1, Bocconia frutescens; 2, Eryngium amethystinum; 3, small Ivy; 4, Tropæolum speciosum.—*A. H.* Solanum Warscewiczii, from Warscewicz, a Polish collector; flower white.—*J. M. O. 1*, Pear next week; 2, Betonica carnea; 3, Coreopsis lanceolata; 4, Diplacus glutinosa; 5, Lythrum Salicaria; 6, Hedera, perhaps Chrysocarpa.—*Scotchman*. Common hemp, Cannabis sativa.—*W. D. 1*, Anchusa italica; 2, Eryngium Olivarianum; 3, Agrostemma coronaria; 4, Solidago virga aurea; 5, Catalpa bignonioides.—*R. C.* Viburnum opulus.—*A. S.* Achillea millefolium, red variety.

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PACKING FLOWERS FOR TRAVELLING: *C.* Pack in hinged boxes, 18 inches long, 10 inches wide, and 3 inches deep, made of light white deal; these being packed in crates of sizes suitable for easy handling. Line the bottom and sides with nice green moss if the blooms are delicate and easily damaged, and cover this with thin soft paper. Some flowers must be laid in singly, wrapped in tissue-paper; others may be bunched, such as Narcissus, Tulips, Freesias, and the like. To prevent rubbing, put in between heavy flowers or bunches little bolsters of soft moss, finest wood or paper-shavings; do not use wadding if you can help it. Pack the box moderately light, cover with paper and a little wood or paper-shavings over all. If the boxes are well made there will be little evaporation from the flowers and leaves, and they will present a fresh appearance when unpacked, even after a twenty-four hours' journey, provided the boxes have not been exposed to sunshine or artificial heat. Forced flowers in winter should be secured from frost by packing the small boxes in hampers or close crates with straw or hay placed round about them. Instead of tissue-paper, Cabbage, Vine, and Mallow leaves may be used, they retain moisture about the things packed, but add to the weight, and consequently the cost of transit.

POTATOS: *J. H.* It is probably a case of sporting or reversion to one of the parents of the Village Blacksmith. Such occurrences are rare.

PRUNUS PISSARDI: *G. D. S. & Co.* Many thanks, the fruit is like that of the Myrobalan Plum of which P. Pissardi is probably a variety.

SEEDLING CARNATION: *S. J. B.* Quite worthless; there being some under name very much better.

THE BAR: *Determined*. Your question should have been addressed to some legal journal. We cannot tell you what you should do to become a member of the Bar.

VINES: *J. Urquhart*. We believe the appearances to be due to faulty management.

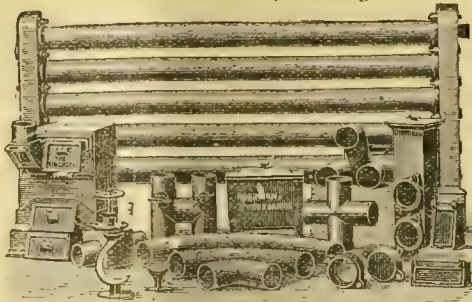
WIRE NETTING: *Protection*. Nothing larger than a mesh of $\frac{3}{4}$ an inch will keep out Tomits.

COMMUNICATIONS RECEIVED.—*C. F. Y.*—Windsor Chrysanthemum Society.—*E. C.*—Ch. de B. Lierre.—*D. T. F.* (fore-stalled).—*E. B. C.*—*W. H. G.*—*J. C. E. D.*—*S. L. L.*, Brussels.—*M. Ed. André*, Paris.—*W. T. D.*—*J. C. & Co.*, Aberdeen.—*C. Druey*.—*C. W. D.*—*Mr. T.*—*C. F. Y.*—*F. S. & Co.*—*Prof. Balfour*.—*A. S.*—*M. W.*—*J. T. N.*—*H. J. Ross*.—*C. W. H. G.*—*M. T.*—*J. O. B.*—*A. P.*—*B. A.*—*J. D.*—*Wild Rose*.—*Dr. Kranzlin*.—*E. H. J.*—*A. D.*—*G. W.*—*J. S. J. R.*—*J. G. B.*—*W. K.*—*Sutton & Sons*.—*W. B.*—*W. H. M.*—*R. C.*

SPECIMENS RECEIVED.—*R. N.* (Plums).—*G. W. H.*—*A. S.* (Ficus stipulata, two forms with fruit).

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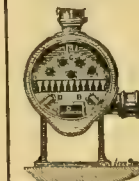
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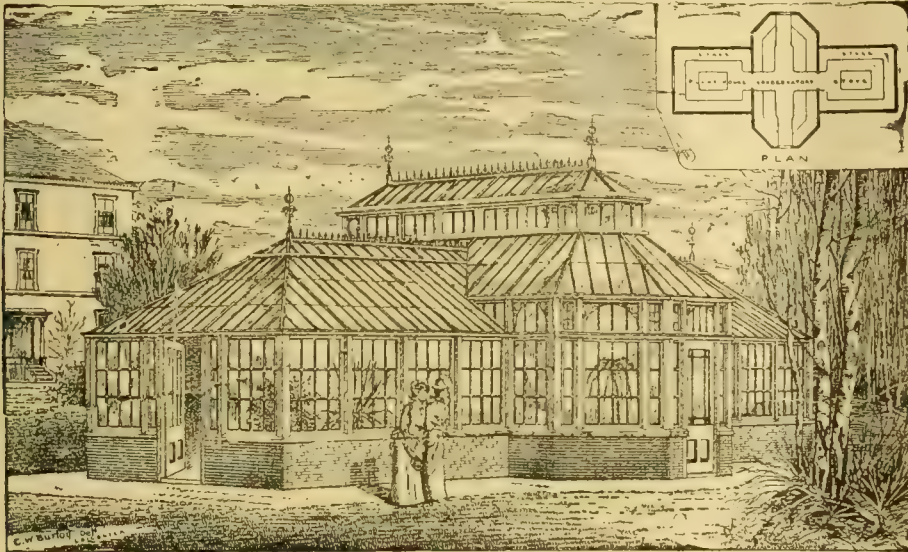
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FOR SALE, GERANIUM CUTTINGS.—A few hundreds each of H. Jacoby, Vesuvius, Flower of Spring, Mrs. Mappin, and Bijou, 3s. per hundred, on rail. Ready now.—J. GARDNER, Elsham Hall Gardens, Brigg.

AN IMPORTANT FACT that cannot be over-estimated:—To make Strawberry-growing both pleasurable and profitable, one need only write to R. GILBERT, Burghley, pay the best price, and obtain the best plants, and the best sorts. To prove the above, try it.

VERY CHOICE LILIUM HARRISII, 7 to 9 inches round, 6s. per doz.; 9 to 11 inches round, 10s. per doz. Chionodoxa Lucille, 3s. per 100; extra fine, 4s. 6d. per 100. Elwes' Giant Snowdrop, 4s. per 100; 35s. per 1000. Full List on application. ROBERT SYDENHAM, Roseleigh, Birmingham.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

WANTED, 80 to 150 dozen APRICOTS.—State quantity and price to JOHN COBBAN AND SON, 1, Market Place, Rotherham.

WANTED, CUTTINGS of the following GERANIUMS:—H. Jacoby, Vesuvius, J. Gibbons, and Bronzes.—State price per 100 or 1000. J. BACKHOUSE AND SON, Rose Villa Nursery, Harrogate.

WANTED, AT ONCE, several thousand Scarlet and Bronze GERANIUM CUTTINGS, including Rev. J. Aitkinson (Scarlet). Quote price, and name sorts to—W. SHAND, Greaves Nurseries, Lancaster.

WANTED, GERANIUM CUTTINGS.—W. B. Gem, Jacoby, John Gibbons, and other leading kinds. State price per 100 or 1000.—H. HAZELL, Brittany Nursery, St. Leonards-on-Sea, Sussex.

WANTED, STRAWBERRIES, good rooted runners, of Jno. Ruskin, President, Marguerite, Dr. Hogg, and La Grosse Sucrée, true to name.—S.X., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, GERANIUM and VIOLA CUTTINGS.—Please send price at once for 1200 John Gibbons Geranium; also Arwell Gem and Archie Grand Viola, 1000 of each to—W. JOHNSON, Florist, Burton-on-Trent.

SUTTON'S BULBS—THE BEST OF THE SEASON.

Henry A. Lee, Esq., Rathgar, says:—"The Narcissi, Tulips, and Hyacinths, have been greatly admired. I have had a display of beautiful flowers from before Christmas until now (February 23).

SUTTON'S HYACINTHS, TULIPS, CROCUS, &c., for Early Forcing.—Sutton's complete Collection of Bulbs for Early Forcing. Price, 10s. 6d., £1 1s., £1 11s. 6d., and £2 2s., carriage free.

SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

NARCISSUS, Double White, splendid strain, 20s. per 1000, on rail. Sample 100 free by post for 3s. Cash with orders.—J. J. CLARK, Goldstone, Brighton.

Strawberries. A FINE COLLECTION of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free. THOMAS RIVERS AND SON, Sawbridgeworth.

A LOES.—A pair of very handsome, variegated American Aloes, 6 ft. 6 in. high by 7 ft. 6 in. wide, in costly iron pots. Price, £7 10s. the pair. PRETTY, Waterloo House, Ipswich.

CYCLAMEN SEED.—Colours saved distinct. W. D. CLARKE has a small quantity of the above first-class Seed to offer to the Trade. Price on application to—W. D. CLARKE, Florist, Hanworth Road, Hounslow.

Hyacinths, Tulips, Crocus, Lilies, &c. C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C. N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

1000 FICUS ELASTICA VARIEGATA.—The above, which are in splendid condition, will be included in H. B. MAY'S GREAT ANNUAL AUCTION SALE, on MONDAY, September 12. Catalogues of the Auctioneers, MESSRS. PROTHEROE AND MORRIS, or at Dyson's Lane Nurseries, Upper Edmonton. N.B. For further particulars, see Auction Sale Advertisements.

Dutch, Cape, and Exotic Bulbs. ANT. ROOZEN AND SON'S CATALOGUE for Autumn, 1892, now ready, contains Cultural Directions and full Descriptive Details of their immense Collections of New, Rare, and Fine BULBS and PLANTS for Autumn Planting. The Catalogue (104 pages in English) will, as usual be sent, post free, on application to their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, London, E.C.; or themselves direct, at Overveen, near Haarlem, Holland. N.B.—No connection with any other firm of the same name.

Boulton & Paul's Outdoor Requisites. BOULTON AND PAUL, MANUFACTURERS, NORWICH. Every Requisite for the Kennel and Poultry Yard, Aviaries, Pigeon Cotes, Pheasantries. Requisites for the Garden, Park, Pleasure Grounds. Wire Netting for Game and Sheep. Iron and Wire Fencing, Gates, &c. Send for Illustrated CATALOGUES, post-free, on application.

J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 10, Victoria Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers,

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY, at 12 o'clock, large consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland.

Lotted to suit the Trade and Private Buyers. On view morning of Sale, and Catalogues had.

Richmond.

UNRESERVED SALE of HORSES, VANS, CARTS, and UTENSILS, in consequence of the Nursery Business having been disposed of.

MESSRS. PROTHEROE AND MORRIS (having sold the Business) will Sell by Auction, on the premises, Steell's Nurseries, Kew Road, Richmond, Surrey, five minutes walk from the Richmond Railway Station, on TUESDAY NEXT, Sept. 6, at 2 o'clock, three Cart-Horses, Harness, capital Phaeton, two Spring Market Vans, three Tumbril Carts, Light Spring Cart in good condition, Hay-making Machines, Ploughs, Harrows, Horse-Roller, and a few Farm Implements, Chaff-Cutters, Wheelbarrows, Stable Utensils, Garden Tools, 140 Bushel and Half-bushel Baskets, Oak Fencing, two Iron Garden Rollers, Ladder, White Lead, Oil, Glass, and other effects.

May be viewed day prior and morning of Sale. Catalogues had on the premises and of the Auctioneers, 67 & 68, Cheapside, London, E.C.

Friday Next.

A VALUABLE COLLECTION of ESTABLISHED ORCHIDS, including many rarities, for UNRESERVED SALE, by order of E. WISCHMUSEN, Esq., who is giving up their cultivation owing to ill-health.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL BY AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, Sept. 9, 1892, at half-past 12 o'clock, the ENTIRE COLLECTION of ESTABLISHED ORCHIDS. The following will be found amongst the plants to be offered:—

Cattleya Skinneri alba, 5 plants	Cypripedium majus	Selligerum
" Wagneri Lowiana, 2 plants	" Charles Canham	
" Exoniensis, 6 plants	" Ashburtoniae expansum	
" Trianae alba	" vexillarium	
" Wagneri, 4 plants	" Mrs. Charles Canham	
" Mardelli, 2 plants	Dendrobium Falconeri giganteum	
" Sororia	Laelia anceps alba	
" Reinickiana, 3 plants	" Perrini nivea	
" Trianae Osmanii	" purpurata Lowiana	
" Fausta delicata	" Philbrickiana	
" Dominiana	" Guatemalense Wisch-	
" Morganiae	" huseniana	
" Hardyana, fine plant, with sheath	" anceps Dawsoni	
" Mastersoni	" Calvertiana	
" Wagneri grandiflora	" amanda	
" Brymeriana	" elegans Bluntii	
" Trianae Dodsonii	" Turneri	
Cyclopogon cristata alba	" xanthina agraphis	
" leoniana	" callistoglossa	
Cypripedium grande	" Mitchellii	
" cananthum superbum	" flammula	
" purpuratum	" euphatha	
" Polium	Oncidium ornithorynchum	
" insigne Wallacii	" album	
" Morganiae, 7 growths	Phalenopsis leucorrhoda grandiflora	
" Euryandrum		

On view morning of Sale, and Catalogues had.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, G.E.R. TWENTY-FOURTH ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller, to SELL BY AUCTION, on the Premises, The Brimsdown Nursery, Green Street, Enfield Highway, N., on THURSDAY, September 16, 1892, at 11 o'clock punctually, there being upwards of 1300 lots to sell in one day, about

60,000 STOVE and GREENHOUSE PLANTS, remarkably well-grown, and in first-rate condition, including, 20,000 WINTER-FLOWERING HEATHS, including hyemalis, gracilis, Cavendishii, perspicua, erecta, hybrida, &c.

3000 TREE and other CARNATIONS, including Mrs. Moore, Duke of Fife, Duke of Clarence, Germania, &c., &c.

600 CARNATIONS, Winter Cheer, best new scarlet, consisting of The Bride, Niphetos, C. Mermet, Maréchal Niel, Climbing Niphetos, Gloire de Dijon, &c.

5000 Solanums, exceptionally well berried
5000 Ferns—Adiantums, Polypodiums, Pteris, Lomarias, &c.
3000 Bouvardias, leading sorts
1000 Ampelopsis Veitchii
5000 Genista fragrans

Clematis Jackmanii, Ivies, large quantities of Ficus, Aspidistras, Anthuriums, Grevilleas, Poinsettias, Plumbagos, Callas, Aralias, Abutilons, new Coleus, new hybrid Crassulas, &c.; also Stove Climbers, including Dipladenias in variety, Clerodendrons, Bougainvilleas, Tacsonias, &c.

May be Viewed any day prior to the Sale. Catalogues may be had on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Upper Edmonton.

About 5 minutes' walk from Angel Road, and 8 minutes from Silver Street Railway Stations.

SEVENTH GREAT ANNUAL TRADE SALE of about 80,000 GREENHOUSE and OTHER PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May to SELL BY AUCTION, on the Premises, The Dyson's Lane Nurseries, Upper Edmonton, on MONDAY, September 12, at 11 o'clock punctually, owing to the large number of lots,

80,000 STOVE and GREENHOUSE PLANTS, remarkably well grown, and in the best possible condition, including 30,000 FERNS,

all the most useful market sorts, and many novelties. 10,000 TREE CARNATIONS, including Mrs. Moore, Duke of Fife, Florain, Winter Cheer, Mrs. A. Hemsley (new), M. Carle A. Alegatierre, a fine lot of old Crimson Clove.

2,000 TEA ROSES IN POTS, extra strong, Maréchal Niel, Gloire de Dijon, W. A. Richardson, and climbing Niphetos, with well-ripened growths 12 to 15 feet long, and others.

10,000 BOUVARDIAS, including Purity (pure white), President Cleveland, Mrs. Robt. Green, Candidissima, and all the best double and single varieties.

CROTONS, LAPAGERIA ALBA, KENTIAS, AMPELOPSIS VEITCHII, CLEMATIS, IVIES,

VINES (strong canes) GROS COLMAR and ALICANTE. 1,000 FICUS ELASTICA VARIEGATA, well-grown plants.

5,000 young PALMS. 8,000 GENISTAS, fine bushy stuff.

3,000 well-berried SOLANUMS.

CYCLAMENS, double white PRIMULAS, CAMELIAS. AZALEAS, forward in bud for early forcing; and a great variety of other PLANTS.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE to commence at 11 o'clock, there being upwards of 1300 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Son, to SELL BY AUCTION, on the premises, the Burnt Ash Lane Nurseries, Lee, Kent, S.E., adjoining the Lee Railway Station, on TUESDAY, September 13, 1892, at 11 o'clock precisely, without reserve, a remarkably well-grown stock of WINTER BLOOMING HEATHS, and other STOVE and GREENHOUSE PLANTS, consisting of:—

20,000 Erica Hyemalis	5,000 Genistas
5,000 " Gracilis	5,000 Solanum capsicastrum (well berried)
2,000 " Cavendishii	1,000 Adiantum cuneatum
500 " Coccinea minor	500 Lomaria gibba
600 " Caffra	800 Ten Roses (in pots)
All well set with Bloom Buds.	2,000 Bouvardias (of sorts)
1,000 Ampelopsis Veitchii	1,000 Palms (of sorts)
1,500 Epacris (to name)	1,000 Cyclamen Persicum
1,000 Boronia megastigma and others	500 Crotons
1,000 Grevillea robusta	500 Clematis Jackmannii

Young ERICA HYEMALIS, E. CAVENDISHII, E. GRACILIS, and others; also GENISTAS, EPACRIS, of sorts, all in 60-pots, for growing on.

The Stock may now be viewed. Catalogues may be had on the premises; at the Seed Warehouse, 51, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Sidcup.

GREAT ANNUAL TRADE SALE, by order of Messrs. Gregory & Evans.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises, the Longlands' Park Nursery, Sidcup, Kent, about 1 mile from New Eltham Station, on FRIDAY, September 16, 1892, at 11 o'clock precisely, in consequence of the large number of lots,

20,000 HEATHS, including Hyemalis gracilis, Vireoscia of sorts, Cavendishii, and Hyemalis alba.

1500 Solanums, well berried	1000 W. A. Richardson in 24-pots
1000 Double Primulas	1000 Niphetos
1500 Maréchal Niel Roses, in 24's, fine plants	500 Souvenir d'un Ami
1000 Perle du Jardin, in 32-pots	1000 Bouvardia, of sorts
500 Safrano	1500 Latanias and Kentias
500 Catherine Mermet	

Large quantity of other mixed plants. The whole will be found in first-class condition.

May be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Tuesday, September 13.

TREE FERNS, DICKSONIAS, and CYATHEAS. **MESSRS. PROTHEROE AND MORRIS** beg to announce that they will include in their ORCHID SALE, on TUESDAY, September 13, a splendid consignment of TREE FERNS, including 14 grand trunks of Dicksonia antarctica, probably one of the finest lots ever sent over, ranging from 7 to 12 feet in length. Also CYATHEA DEALBATA, MEDULARIS, and CUNNINGHAMII; DICKSONIA SQUARROSA; 13 cases, containing 40,000 Seeds of MACROZAMIA SPIRALIS; a quantity of other Ferns in clumps and bundles, the whole received direct for unreserved Sale. On view morning of sale, and Catalogues had.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of fine WINTER-FLOWERING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL BY AUCTION, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on WEDNESDAY, September 14, at 11 o'clock precisely, in consequence of the large number of lots, a large quantity of—

WINTER-FLOWERING and other PLANTS, including—

20,000 Erica hyemalis	2,000 Maréchal Niel, Gloire de Dijon, 8 to 10 feet.
1,000 Tree Carnations	Niphetos, L'Idéal, and other Tea-scented
4,000 Erica gracilis	Roses in great variety
10,000 Genista fragrans	1,000 Deutzia gracilis, established in pots for earliest forcing
6,000 Ampelopsis Veitchii, 4 feet	6,000 Bouvardias, including a lot of President Cleveland
1,000 Epacris	5,000 Solanums, beautifully berried
2,000 Lapageria rosea superba	500 Ivy-leaved Geraniums, best double kinds
6,000 Cyclamen persicum, (Fraser's superstrain)	500 Grevillea robusta
2,000 Passiflora Constante	500 Aralia Sieboldii
400 Araucaria excelsa	200 Tacsonia van Volxemii
400 Large-leaved Ceanothus	500 Boronias, of sorts.
200 Lapageria alba, from layers	
500 New-scarlet Trumpet Honeysuckles	
1,000 Hollyhocks from named sorts with names	

And a great number of ERICA CAVENDISHII, CAFFRA, large-flowering White JASMINES, ABUTILONS, PALMS, and OTHER PLANTS. Also a quantity of young GENISTAS and HEATHS for potting on.

The whole of the Stock is in the best condition, and ready for immediate Sale.

Hoe Street Station, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Clapham, S.W.

GREAT UNRESERVED CLEARANCE SALE of ORCHIDS, in consequence of the expiration of lease.

By order of Messrs. Charlesworth, Shuttleworth & Co. IMPORTANT to ORCHID GROWERS and the TRADE.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, on the Premises, 213, Park Road, Clapham, S.W., on TUESDAY, WEDNESDAY, and THURSDAY, September 20, 21 and 22, the whole of the extensive STOCK of ESTABLISHED and SEMI-ESTABLISHED ORCHIDS.

Fuller particulars will appear next week.

East Grinstead.—Without Reserve.

THIRD ANNUAL TRADE SALE of well-grown STOVE and GREENHOUSE PLANTS, fit for immediate Sale, by order of Messrs. Roberts Brothers.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises, the Moat Nursery, East Grinstead, close to the Railway Station, on TUESDAY, September 20, at half-past 11 o'clock precisely, the following unusually WELL-GROWN STOCK:—

200 Specimen Eucharis, a grand lot of clean plants	50 Maréchal Niel Roses, rods 8 to 10 feet long
600 Solanum capsicastrum	500 Genista fragrans
8000 Mixed Ferns	3000 Roses in pots
2300 Bouvardias of sorts, in 48-pots	1500 Adiantum cuneatum, in 48-pots
800 Cyperus	350 Grevillea robusta
	300 Euphorbia jacquiniiflora

Asparagus tenuisissimus, Allamandas, Stephanotis, Gardenias, Rap-pail Geraniums, Cyclamen, Begonias of sorts, Palms of sorts, Callas, Violets, Spiraeas, &c.—in all, 20,000 plants.

May be viewed two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Henfield, Sussex.

Abutting on the London, Brighton, and South Coast Railway, about ten minutes' walk from Henfield Station.

By order of the Trustees of the late S. Clarke, Esq.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at The Mart, Tokenhouse Yard, London, E.C., on WEDNESDAY, September 28, at 2 o'clock, in three Lots, the exceedingly choice FREEHOLD MARKET GARDEN and NURSERY, most favourably situated, and known as the Henfield Nurseries, Sussex, comprising a modern and convenient Brick-built Residence, 22 Greenhouses and Vineries, all heated; Pits, Brick-built Stabling, and other Trade Buildings; also Cottages, and another Dwelling House, Orchard, and productive Market Garden and Nursery Land, the whole containing an area of about 11 acres. Possession will be given on completion of the purchase.

Particulars and Plans had at the Mart; of Messrs. HOWLETT and CLARKE, Solicitors, 8, Ship Street, Brighton; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, London, E.C.

Catalogues.

MESSRS. PROTHEROE AND MORRIS have PERMANENT LISTS for their VARIOUS SALES, to which they are glad to ADD NAMES at any time for a REGULAR SUPPLY of CATALOGUES on learning the nature of the requirements of intending purchasers.

67 and 68, Cheapside, London, E.C.

GREAT SALES OF NURSERY STOCK.

Preliminary Notice of Forthcoming Auctions.

IMPORTANT to THOSE LARGELY ENGAGED IN PLANTING.

MESSRS. PROTHEROE & MORRIS

have been favoured with Instructions to Conduct the following:—

OCTOBER 3 to 5.—At the GREEN LANE NURSERIES, HEATON NORRIS, MANCHESTER, by Order of Messrs. G. & W. Yates. (Three days.)

OCTOBER 6.—At THE NURSERIES, CHILWELL, NOTTS, by Order of Messrs. J. R. Pearson & Sons. (One day.)

OCTOBER 7.—At the LOUGHBOROUGH PARK NURSERIES, BRITTON, by Order of Messrs. Ponsford & Sons. (One day.)

OCTOBER 10 to 14.—At the WOKING NURSERIES, WOKING, SURREY, by Order of the Trustees of the late Mr. George Jackman. (Five days.)

OCTOBER 17 to 21.—At ST. JOHN'S NURSERIES, WORCESTER, by Order of Messrs. Richard Smith & Co. (Five days.)

OCTOBER 18.—At the SEA VIEW NURSERIES, HAVANT, by Order of Messrs. Ewing & Co. (One day.)

OCTOBER 19 to 21.—At the SUNNINGDALE NURSERIES, SUNNINGDALE, BERKS, by Order of Mr. Chas. Noble. (Three days.)

OCTOBER 25 and 26.—At the NURSERIES, TRINITY ROAD, WANDSWORTH COMMON, by Order of Mr. R. Neal. (Two days.)

OCTOBER 26.—At the NURSERY, PERRY HILL, CLIFFE, ROCHESTER, by Order of Mr. W. Horne. (One day.)

OCTOBER 27.—At the TANGLEY PARK NURSERIES, BUCKINGHAM ESTATE, HAMPTON, by Order of Messrs. Mahood & Son. (One day.)

NOVEMBER 1.—At the HALE FARM NURSERIES, TOTENHAM, by Order of Mr. T. S. Ware. (One day.)

NOVEMBER 8 to 10.—At the celebrated AMERICAN NURSERIES, BAGSHOT, SURREY, by order of Messrs. John Waterer & Sons. Three days.

NOVEMBER 15 and 16.—At the BARNHAM NURSERIES, BOGNOR, by order of Mr. S. S. Marshall. Two days.

Other Sales are being arranged, and the dates will be notified in future announcements.

The Auctioneers desire to call the special attention of those who may be planting largely during the season, to these important Sales. They are now revising their permanent Lists, and will be pleased to add the names of intending purchasers, who may wish to have Catalogues forwarded of all the above or any particular Auction.

Auction Rooms and Estate Offices, 67 and 68, Cheapside, London, E.C.

Monday, Wednesday, and Thursday Next. VERY EXTENSIVE IMPORTATIONS OF BULBS from HOLLAND.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, WEDNESDAY, and THURSDAY NEXT, September 5, 7, and 8, at half-past 12 o'clock precisely each day, a very extensive IMPORTATIONS OF BULBS from some of the most renowned Farms in Holland, consisting of the usual choice assortment; EARLY WHITE ROMAN HYACINTHS and NARCISSUS from France, &c.

On view mornings of Sale, and Catalogues had.

N.B.—None but good and reliable Bulbs will be offered.

WANTED TO PURCHASE, a genuine NURSERY, SEED, and FLORIST'S BUSINESS, in a good provincial Town.—Reply to G. T., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

WANTED, TO RENT, a NURSERY, about an acre more or less, with six or eight Glass-houses on it.—Full particulars to W. BARTLETT, 3, Church Road, East Wickham, Welling, Kent.

SEEDSMAN is open to TAKE OVER a SMALL BUSINESS, in good locality. State turnover, stock, goodwill, &c., to B. B., 41, Wellington St., Strand, W.C.

WANTED, HOT-WATER PIPING.—1000 feet of 4 and 2-inch.—Particulars to—TURNER BROS., Nurserymen, Garston, Liverpool.

TO BE SOLD, a small well situated NURSERY and FLORIST BUSINESS, doing a good trade. Full particulars of D., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE SOLD, the LEASE (14 years), GOODWILL, and STOCK of a small FLORIST'S and JOBBING BUSINESS, in a fashionable S.E. London Suburb. There are seven Greenhouses and fine front Show House, with good Dwelling House attached. A small capital only required. Owner obliged to give up, owing to continued ill health. For further particulars, apply to—THOMAS B. JAMES, Horticultural Auctioneer and Valuer, 12, Bull Ring, Birmingham.

FOR DISPOSAL, a well-known NURSERY, close to Maryland Point Station, Forest Lane, Stratford; in the same hands since 1875; cause of leaving, age and ill health. At the above nursery, in Stock, about 1600 Fruit and Forest Trees and Shrubs; from 4000 to 5000 feet of Glass. Hot-water Pipes in all Houses. Can be seen at any time, Sundays excepted. Price, £200, or Valuation. J. BENT, Forest Lane Nursery, Stratford, E.

TO LET, with IMMEDIATE POSSESSION, near a good Midland Town, and on the main road, a COMPACT NURSERY, principally Glass, 6 Greenhouses, well heated, and in splendid working order. Trams pass every few minutes. Rent and Valuation low. This is a chance seldom met with.—O. P., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Lovers of Gardens. TO BE LET, a charming old MANOR HOUSE, recently restored, added to, and decorated, with very good walled Gardens, fully stocked with a fine Collection of Herbaceous Flowering Plants and Shrubs, and in perfect order; large Lawn Tennis Ground, Conservatory, Greenhouse, and Range of Heated Pits. The House contains ten Bed-rooms, five Sitting-rooms, and usual offices; Stabling for four or six Horses, Dog Kennels, Poultry Sheds, Mushroom House, and Paddock. Two miles from Lewes, Sussex; close to Church and Post; one hour and a quarter from London. Unfurnished; rent, £120. For further particulars, apply to J. HORSLEY PALMER, The Lawn, Bournemouth.

TO NURSERYMEN COMMENCING.—Old-established compact NURSERY and FLORIST'S BUSINESS, on the Main Road, and near Railway Station, comprising about 4 Acres of Land, well stocked with Shrubs, Forest and Fruit Trees. The Glass consists of Propagating-House, Conservatory, 2 Plant-houses, about 40 Frames and Lights, with Office and Potting-shed. Small rent, and a portion of the Land to be purchased. Price for Goodwill and Stock, £500.

For further particulars, apply to EDWARD T. PARKER, Horticultural Valuer, 1, Broad Street, Bristol.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

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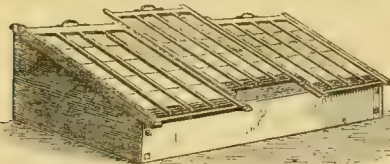
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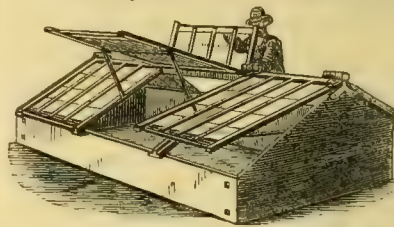
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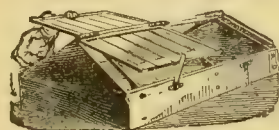


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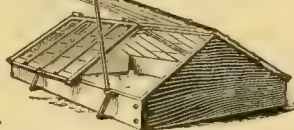


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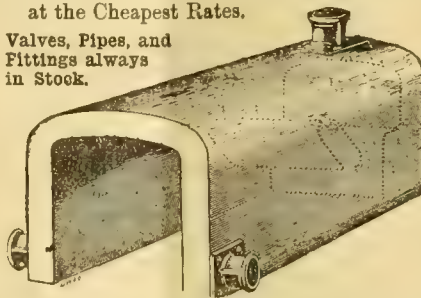
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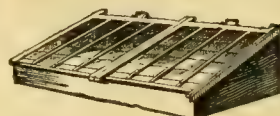
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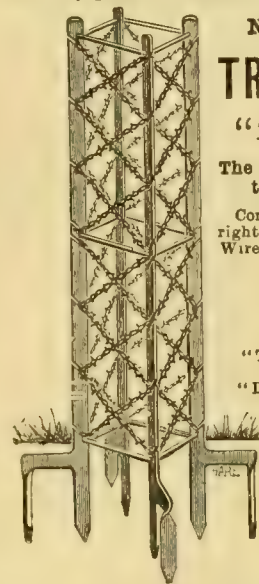
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 3, 1892.

SANDRINGHAM.

ONLY those who have lately visited the gardens of His Royal Highness the Prince of Wales can have any conception of the amount of improvement which has been carried out there during the past year under the direction of the new gardener, Mr. Archibald MacKellar. Of course, there are time-honoured scenes around Sandringham House which it would be almost sacrilege to meddle with, and nothing that could be done could further enhance the natural beauties of the extensive drives through the brilliant Heather, now at its best, past copses full of Bracken, and abounding in game, and through dense woods of aromatic-smelling Fir. Nothing could well replace the stately avenue of ancient Limes running from the Norwich Gate to the mansion, and there is a quiet beauty in the walk under the old Scotch Fir trees leading to the picturesque church, and in other parts of the older garden which needs no improvement. Still, it has been perceived that the large quantities of cut flowers, fruits, and other productions of the garden rendered it imperative that the whole of the more modern parts of the establishment should be put on a proper footing; and so cleverly was the work planned, and so thoroughly was it carried out, that the necessarily heavy expenses may be regarded as so much money well invested. The heating of the whole, on one plan, by a simple and effective arrangement, may be regarded as a good example of horticultural engineering skill, and a specimen of the abilities of Messrs. Mackenzie and Monour, of Edinburgh and Glasgow, who carried out the work. So well was this portion done by them, that not even accidents can seriously interfere with the efficient working of the heating apparatus, or endanger the inmates of any of the glass-houses. Two very simple matters, the non-observance of which have ruined in some places many a valuable crop of fruit, are here strictly carried out, viz., the avoidance of dips in the hot-water piping, and the chambering of all parts where these pipes have to pass: below ground, so that in the event of anything being wrong with them, every foot of it can be easily examined.

The scene of Mr. MacKellar's greatest efforts lay in and around the walled-in kitchen garden, and we purpose touching on a few of the improvements, but, necessarily, our remarks must be brief. First, then, for the general plan of the walled-in garden. Starting from the gardener's pretty house, bright with flowers, we soon come to the scene of the late, present, and future improvements. A broad road runs down one side of a square, the high wall of which forms the back of the new offices (of which more anon), the opposite side being bounded by a wall

which is to be covered with climbers, and in front of which is a raised bank, planted with Roses, and faced with deep rockery edging where appropriate hardy plants are blooming. On the other side of the square is the beautiful and interesting model dairy, and from it a broad smooth gravel-walk runs across the inner garden, bordered on each side with hundreds of Carnations, Roses, Stocks, Mignonette, and flowers of a like nature. This walk is continued through the gates to the outer garden, and has at its termination a new plantation of shrubs, with facing greensward planted with spring bulbs. The other side of the square has its fruit wall, and profusion of flowers along the broad walks, all of which have been newly made. In the edging of these walks some 40,000 Staffordshire edging-bricks have been used, which, being almost indestructible, form the most economical of edgings in the end.

To return to the new works which have been undertaken outside the walls before-mentioned. The whole is arranged to match, and entrance is gained to each division by a door. First, is the boiler-house, whence warmth is obtained for the houses, offices, and, indeed, every place needing it. On the other side of the way is a large newly-constructed underground reservoir for rain-water, holding about 15,000 gallons, which, on being pumped up by a wheel-pump to a smaller tank on a higher level, supplies water to all the houses, &c. Then comes a large potting-shed, neatly fitted, and a well-arranged packing-shed. The next is the painters' workshop, and after that the Grape-room, with its stands, fittings, and inner walls of polished Pitch-Pine, the flooring of which is to be of mosaic. When completed and filled with Grapes, this room will be a sight worth going a long way to see. Beside this room is a compact seed-store, and an office, also fitted with polished Pitch-Pine; and continuing, we come to a large greenhouse filled with showy flowers. Then come the Mushroom-house and a second boiler-house, followed by a fruit-room some 70 feet in length, and lined and fitted also with polished Pitch-Pine. Beyond this last-mentioned room is a range of bothies, with a housekeeper's apartment at the end, and which are probably the most conveniently-arranged gardeners' bothies in existence. They are designed to accommodate 12 young men. All the woodwork is of polished Pine, and the furniture, bedding, and fittings are the best for the purpose which could be obtained. At one end is the foreman's room, from which one passes into the mess-room, and so on to the kitchen, lobby for clothing, &c., in use; and the comfortable sitting-room and reading-room. Upstairs is a commodiously and perfectly, not to say expensively, fitted bath-room and set of lavatories, beyond which are the dormitories, all comfortably furnished alike; each man having his room with a number placed on the door. These examples of comforts for the men employed might in some form and in some degree, at least, be copied with advantage in other gardens of high repute, where the term bothies is only the dignifying title of tumble-down sheds. Beyond the bothies another large boiler-house has been built for the new ranges which are in contemplation. Continuing up the walk, we come to a range of heated frames for vegetable culture, 400 feet in length. At Sandringham there are more than 100 acres of garden and well-kept pleasure-ground, 14 acres being devoted to the kitchen garden, no part of which is allowed to be without a crop, so that the forty or more men which comprise the garden staff require to be ably handled. Of course, during the progress of

large works, many more than these are employed. The kitchen garden strikes one by the large area occupied by each crop, and the general excellence of the methods of cultivation pursued. Veitch's Self-protecting Broccoli and Veitch's Main Crop Onion here, as in other places, come in for a good word. Ten thousand heads of Celery are wanted in a year, and more than that has to be planted. Strawberries in pots are well and extensively grown. Apples and Pears are scarce this year, as are some other kinds on the old trees, but on the strong young trees supplied by Messrs. J. Veitch & Son last spring, and in 1891, and especially the Plums and Cherries, there has been an abundance of fruit.

THE GLASS HOUSES.

The first range entered was a long one, consisting of vineries with Vines well cropped. Many of the old vineries have been condemned, but the sacrifice of even unsatisfactory Vines is a thing not to be done hastily where supplies must be kept up. The next block we came to consisted of forcing-houses. Here we found 1500 Poinsettia pulcherrima, and in others Tomatos were growing and carrying good crops of fruit; then comes a range of Melon-houses, with plants in fruit in all stages, and a number of fine Crotons of sizes suitable for table decoration; and with these were Gardenias grown for cut blooms. The next that we entered was a range in three divisions, containing in the first division Gardenias in fine health; in the second Crotons, Dracenas, and other decorative plants; and in the third a wonderful show of Eucharis grandiflora, the whole house being full of plants in full bloom.

After this, an Orchid range in three divisions was visited, in the first being Odontoglossums, Masdevallias, and other cool Orchids; in the second, Cypripediums, Dendrobium, &c.; and in the third, Cattleyas and Lælias, all in a condition promising rapid improvement. Entering the next, a lofty house with the wall beautifully furnished with Ferns and foliage plants, we found tall Palms and many Dracenas. Then a range intended for Orchids was noted, but at present it is only partly occupied with these plants. There were likewise houses and frames in which the most noticeable thing was the enormous stock of plants of Souvenir de la Malmaison Carnations in the best condition. These flowers are favourites at Sandringham. Turning again to the fruit-houses, we find range after range of vineries, and Peach and Nectarine-houses were remarked, most of which have been newly planted, and with trees which bear or have borne good crops this year; and, continuing, we find large quantities of Cyclamen, Primulas, Chrysanthemums, Cinerarias, and other flowers for autumn and winter use, and abundant evidence of succession stock on every hand.

Passing to the terrace in front of the hall, the newly laid out geometrical garden was aglow with scarlet, pink, and other Pelargoniums, besides other bedding plants, the salient points being marked by pyramid golden Yews, which form a fine feature in the garden, and which will greatly improve with age. From this point the eye takes in the beautiful grounds with its fine Oaks and the many interesting trees planted by Royal visitors. Here also a view is to be got of a part of the chain of lakes which flow into each other, and empty into a large lake in a more distant part of the grounds. These stretches of water upon which Mr. Pulham was engaged some few years ago, are being thoroughly cleansed, are furnished with rockeries at certain points, and they are connected with each other by rocky

rivulets constructed in a very natural and pleasing manner. Mr. MacKellar is taking much pains with the planting, which should, on its becoming established, give an admirable effect. On the edge of one of the lakelets is a fine aged Weeping Willow, and near by are grand specimens of Sequoia gigantea, which still retain their perfect form, although they are of such large proportions.

Following the lakes round to the Bachelor's Cottage, now being renovated and enlarged, the keeper's house appears. This building is bright with flowers in front, and creeping plants on the walls, the beautiful greensward between it and the pheasantries, kennels, &c., being excellently kept. Beyond this point is the deer park with its hundreds of deer; near by is a maze formed of Thuia gigantea; then comes the wild garden, an orderly wilderness, very beautiful of its kind, and then across the large tennis court. By this time we had come to the conclusion that Mr. MacKellar had done much good work in the short period of time that he has been at Sandringham. It may now truly be said that Sandringham gardens take rank with the best in the world.

NEW OR NOTEWORTHY PLANTS.

DISA COOPERI, Rehb. f.*

THIS pretty Orchid, of which we give an illustration (fig. 45), was imported and flowered by Messrs. F. Sander & Co., of St. Albans, and exhibited by them at the Royal Horticultural Society on February 9 of this year, when a Botanical Certificate was awarded for it, this being in all probability the first time that the plant has been seen alive in Europe. Afterwards it was sent to Kew, and a drawing of it has been made for the *Botanical Magazine*, in which a coloured plate of it will shortly appear. It is a native of the eastern part of South Africa, and was discovered by Mr. T. Cooper in the Orange Free State in 1862, and although Reichenbach did not publish his description of it until 1881, it was about the year 1868 when, on purchasing the first set of Mr. Cooper's collection of South African Orchids, he pronounced the name it was to bear, for upon looking through that collection he came to this one, when, in his characteristic manner (as Mr. Cooper himself told me the next day), he held up his hands and exclaimed in (as nearly as I can recollect at this distance of time), some such words as these:—"Ah! what a beauty; that is new, and I will name it *Disa Cooperi*." Although it does not possess the brilliant colours of some of the species, it is nevertheless a very attractive Orchid, and the long, slender, nearly erect spurs give the flowers a very quaint and not ungraceful appearance, quite distinct from any other species at present in cultivation. The plant grows from 15 to 24 inches in height, and is quite glabrous. The leaves are 4 to 7 inches long, $\frac{3}{4}$ to 1 $\frac{1}{4}$ inch broad, lanceolate acuminate, and clothe the stem to the base of the flower-spike, gradually passing into the bracts, which are from $\frac{3}{4}$ to 2 inches long, and $\frac{1}{2}$ to $\frac{3}{4}$ inch broad. The flower-spike is from 6 to 12 inches in length, with numerous rather closely-placed flowers about 1 inch in diameter. Dorsal sepal helmet-shaped, tapering into a straight or slightly flexuose, nearly erect, slender spur 1 to 1 $\frac{1}{2}$ inch long; the colour is pale rosy-carmine, or white tinted with carmine; lateral sepals $\frac{1}{2}$ to $\frac{3}{4}$ inch long, oblong obtuse, with a short dorsal horn at the apex, spreading and somewhat reflexed, rosy-carmine. Petals obliquely rhomboidal, clear greenish-yellow, standing erect at the inner sides of the dorsal sepal. Lip shortly clawed, triangular, with the angles obtusely rounded, flat, slightly keeled down the centre, rather thick and fleshy, of a clear greenish-yellow, and hanging down in front of the ovary, so as to be very conspicuous.

* *Disa Cooperi*, Rehb. f. in *Flora*, 1881, p. 328.

The following specimens of it are in the Kew Herbarium:—Orange Free State, Cooper, Nos. 1098, 1871; Transvaal, Dr. Atherstone; Matutiele, Griqualand East, Tyson, No. 1606; Oliviers Hoek, sources of the Tugela River, Natal, Allison, No. 27; Natal, Fanin, No. 2. It grows among grass at an elevation of about 5000 feet above sea-level, and, according to Mr. Allison, in wet soil, flowering in January and

and of which we give an illustration (fig. 48), is undoubtedly one of the most beautiful annuals that has been introduced into cultivation for some years past. It is remarkable that it has not found its way into our gardens long before this, for, although it was described over half a century ago, this appears to be the first time it has been cultivated in Europe. Possibly this may be accounted for by its being a local

lanceolate or linear, distantly toothed, and quite glabrous on both sides, the radical leaves narrowed into a stalk, those on the stem sessile and opposite. The flowers are in compact corymbs, terminating the stem, and its branches lengthening into racemes as the flowers fall away. The bracts, pedicels, calyx, and outside of the corolla, are all glandular-pubescent. Sepals linear oblong, spreading, free nearly to the base. The corolla is from $\frac{3}{4}$ to 1 inch in diameter, two-lipped, the upper lip being 4-lobed and glabrous within; the lower lip has a short, broad spur, and a broad transverse front lobe, notched at the apex, hairy within, especially in the throat. The colour of the flowers is exceedingly variable, being white, ochreous, pale yellow, deep yellow, orange, orange-scarlet, magenta, carmine, light rosy-purple, orange stippled with orange-brown and shaded with mauve, &c., the throat being dotted with blackish on a yellow ground, and the outside is often veined and marked with purple.

This variation in the colour of the flowers is one of the most interesting features of the plant, for plants which vary in a wild state to such an extent as this species does, are very few indeed. As this is its first introduction into cultivation, the variation is in this case not a product of the gardener's art, and the dried specimens show that it varies in the same manner in Nature. There are many plants that vary to the extent of two or three colours in a wild state, but it is exceedingly rare to find them indulging in such wholesale variation as this *Nemesia* does. I have seen sixteen varieties of colour, all of them very brilliant and beautiful, and a bed of them mingled must be a very charming sight; the flowers being large, showy, and abundant, it is certain to become a very popular plant. There are many other species of *Nemesia*, all of them free-flowering, and several that are well worth cultivating; the different species have white, yellow, blue, or purple flowers, but, so far as the dried specimens show, each species has its own colour, and does not vary like the present plant. *N. E. Brown.*

[The construction of the flower is curious, the corolla, as above described, is tubular, and irregularly two-lipped, the upper lip consisting of four obtuse segments, with two purple spots at the base of each; the lower lip is of a single segment only, but much larger than the other four, at first rolled inward, afterwards unfolded and prolonged at the base into a broad, obtuse, somewhat two-lobed spur, the whole corolla more or less covered with spots and hairs. The stamens at the base are connate, with the corolla-tube in pairs, two long, two short, one pair above the other, and in the same vertical plane. The posterior stamen is missing. The two-lobed anthers open just about the level of the purple blotch at the base of the upper lip of the corolla. The young fruit consists of two carpels, placed in the front and back of the flower, compressed from side to side with divergent, falcate tips, between which the short style is placed. Seeds numerous, tubercled and bordered by a deep membranous wing. In two-lipped corollas, the upper lip is usually of two, the lower of three combined petals. The infolded lower lip reminds one of some *Calceolarias*. Messrs. Sutton are to be congratulated on the introduction of so desirable a plant. We subjoin for comparison the figure of *Nemesia cynanchifolia*, introduced by the late Lieut. D'Ombra. (See *Gardeners' Chronicle*, August 2, 1879.) Ed.]



FIG. 45.—DISA COOPERI: COLOUR, ROSY-CARMINE. (SEE P. 268.)

February. It is stated to be very fragrant. The Kew plant was scented something like Cloves. *N. E. Brown.*

NEMESIA STRUMOSA, Benth.*

This charming plant, which was exhibited by Messrs. Sutton & Sons, of Reading, at a recent meeting of the Royal Horticultural Society at the Drill Hall,

* *Nemesia strumosa*, Benth., in *Companion to the Botanical Magazine*, vol. 2, p. 18 (1836); and in *De Candolle, Prodrum*, vol. 10, p. 260.

plant, like very many other members of the great South African flora, for it is a native of the south-western part of Cape Colony, and grows in the neighbourhood of Saldanha Bay, and at Doornhoogde; but, to judge from the material in the Kew herbarium, it does not appear to have been met with by any collector since the time of Drege and Zeyher.

Nemesia strumosa is an annual, growing from 6 inches to 2 feet in height, the upper part of the stem covered with glandular hairs. The leaves are

ORCHID NOTES AND GLEANINGS.

LÆLIA ANCEPS ALBA VARIETIES AT TRING PARK.

A HOUSEFUL of large specimens of the various forms of white *Lælia anceps* in Lord Rothschild's collection will shortly be a fine sight, the plants being in matchless vigour and plentifully set with stout flower-spikes. Among them is a very fine specimen *L. anceps Williamsii*; and all the other varieties are equally good. One of the favourites is *L. a. Schroderæ*—perhaps the most massive, and purest white flower of any of

these varieties. Mr. Hill grows the plants in a tolerably sunny house, which is kept rather warmer than most growers favour, and to which he attributes much of his success with them. The fact of their young leaves being so firm and of such a rich green shade of colour, shows that the conditions afforded agree with them, to say nothing of their abundant flowering. Cattleyas are as well done as *Lælias* at Tring Park, and a fine show has been witnessed there of good forms of *Cattleya Hardyana*, *J. O'B.*

NEW CATTLEYA.

A remarkable natural hybrid (*C. gigas* × *aurea*) is now blooming with M. J. Vincke-Dujardin, at Bruges. The sepals and petals are the same size as those of *C. aurea*, but the colour, instead of being rosy-lilac, like that of *C. gigas*, is pinkish, the ribs and veins plainly traced out in white. The lip is in size different to that of *C. gigas*; in shape and size it is like that of *C. aurea*, the lip of *gigas* having two yellow marks, which in the hybrid spread to the centre; a beautiful velvety golden-yellow suffuses it everywhere, but in the lip reaches only to the centre; the base of the lip is rosy-purple, the top of it the colour of *C. gigas*, or, rather, a shade intermediate between that of *C. gigas* and *C. aurea*. In a second variety this secondary tint is of the same blackish-purple as in *C. aurea*, velvety, and of great richness.

CYPRIPEDIUM CALLOSUM VAR.

This, one of the best varieties known, is also in bloom with the same orchidist. The lip, of great size, has strongly-marked streaks of purple; a charming shade of purple also spreads between the stripes, and is exceedingly effective against the white ground.

CYPRIPEDIUM SP.

The above-named orchidist has also just flowered an imported *Cypripedium* for the second time. In form it resembles *C. Godefroyæ*, the flowers are pure white with spots all along the veins; these marks are purplish-lilac, larger than in *C. Godefroyæ*, better arranged, less straggling, and not confused with the white. The edges of the parts are delicately fringed. The lip is egg-shaped, pure white, unspotted outside, inside delicately speckled with the same shade. The white staminode is also speckled, with a pretty bright yellow spot in the centre. The flower is of excellent size, measuring nearly 3 inches across; it is borne on an erect, straight, and sturdy peduncle, differing from those of *C. Godefroyæ* and *C. bellatulum* in length, in fact, it measures from 4 to 5 inches. The leaves are much longer than those of *C. Godefroyæ*, which are 6 inches by 1½ inch; they are glassy-looking, clear green, blotched with greenish-white, very firm in texture. The plant is more vigorous than *C. Godefroyæ*. *Ch. de Bosschère*.

PINE-APPLE CULTURE.

SINCE foreign Pine-apples have become plentiful in our markets, the cultivation of this noble fruit has been discontinued in many gardens. This is, I think, a pity, for good home-grown fruits are much better in quality than imported ones. They can also be had at any season in the year, which is not the case with their rivals, while their culture incurs less trouble than that of some other indoor fruits; but pains are sometimes taken in this particular which are unaccompanied by tantamount results. Low, light structures are important factors to the successful culture of the Pine-apple; it is also essential that they should be thoroughly heated, and placed in a sheltered, sunny situation, for although this plant, when under glass, requires to be slightly protected from powerful sunshine, it nevertheless enjoys abundance of warmth and light. A suitable soil is another necessary requirement; that which we use is a light fibry loam, skimmed from a stony old sheep pasture, situated on a border of the Forest of Dean, and stacked for about nine months before it is used. Soils of this nature are best used in a moderately dry, warm, and rough state, having any fine particles removed; and they should be enriched with Thomson's Vine Manure, or a similar fertiliser, to the

extent of an 8-inch potful to one barrowload of soil. Grand Pines can, however, be grown by the use of liquid manures, without the aid of other manurial agents, although we find a manifest improvement is made by their assistance.

It is advisable to grow only a selection of varieties, and a good one is the Queen for summer use; whilst Smooth-leaved Cayenne and Charlotte Rothschild are excellent for winter fruit. Plants may be readily raised either from suckers or crowns; the former are most easily procured, and usually produce fruits in a shorter space of time than the latter—at the same time, I have a liking for crowns, as they form very compact plants with stout stems, and we invariably gather our best fruits from them. Queen suckers are generally plentiful about the end of August, when sturdy, mature ones should be selected and prepared for potting by having their jagged ends and a few of their bottom leaves removed, clean, efficiently-drained 8-inch pots, with a layer of moss, coated with soot, over the drainage, having been prepared, the suckers should be placed in them, and the compost be made sufficiently firm about them to keep the plants perfectly steady. The pots should then be firmly plunged in a bed of decayed leaves or tan, placed over hot-water pipes, and having a steady temperature of 85°, and the soil be moistened through with tepid water. The temperatures may now vary from 65° at night to 75° by day, with a moderate rise from sun-heat, and during the brightest part of the day, until the suckers are rooted, thin shading must be provided, and the suckers be gently syringed early in the afternoon. The object now in view should be to keep the plants robust, and to this end air must be given whenever the weather permits, with only a moderate amount of atmospheric moisture, and sufficient water to keep the soil moist. Towards the end of October the temperatures may be gradually lowered, until they reach by the middle of November, 55° at night, and 60° by day, the bottom-heat being 75, and these will suffice during the resting period.

In February the plants will show signs of growth, and having their soil moist, and fairly filled with active roots, will be in fit condition for shifting into their fruiting pots. In this operation the compost and pots (12-inch) should be prepared in a similar way to those recommended for suckers, a few of the bottom leaves be separated from the plants before turning them from their pots, and the surface of the old soil covered an inch in depth with the new compost. I also advocate very firm potting, provided the soil is of the nature and condition recommended. If the pots are properly plunged 2 feet asunder in a firm bed of decayed leaves, they need not be moved again until after they have fruited; indeed, this is our practice, and we find it preferable to re-plunging at a later period, after the plants have become large, as this cannot be accomplished without incurring some injury to the plants. The spring and summer treatment will be of a routine character. Water must be very moderately supplied until the roots have made considerable progress, when it may be more liberally used, and be slightly enriched with guano, but over-watering must be rigidly avoided. The temperatures should be gradually increased until they reach 70° at night by the middle of April, and from 75° to 80° by day, the bottom-heat being 85°; and air may be carefully admitted when the thermometer touches 78°, and then regulated according to the weather. The necessary moisture can be maintained by damping the pathways at 6 a.m., again at noon, and by gently syringing the plants and surface of the bed when the house is closed for the day. The shading must also be carefully attended to, and all suckers removed. Plants treated as directed make rapid progress in August and the early part of September, when a carefully-regulated circulation of air is necessary to prevent an attenuated growth. In October the moisture must be gradually reduced, and the temperature also, until by November it falls to the point that was recommended for suckers during winter.

In order to have ripe fruits for the London season,

a time when Pines are valued, the temperature must be raised to 60° or 65° at night, and 70° by day, and the bottom-heat to 85°, by the first week in January; and should the plunging-material have become severed from any of the pots, the defect should be rectified. The atmospheric moisture must likewise be correspondingly increased, and more frequent attention to watering with tepid guano-water will be needful. Where practicable, a top-dressing of Thomson's Manure at this time, and again subsequently, when the plants have blossomed, will be of great benefit. Once the plants show fruit, the temperature should be raised to 70° at night, and 75° to 80° during the day, and a moderately dry state of the atmosphere must be upheld during the flowering period; the latter particular must be vigorously carried out, otherwise an imperfect set may ensue, and, consequently, deformed fruits. The subsequent treatment, until the fruit begins to change colour, may be similar to that advised for successional plants, except that overhead syringing may be discontinued, as this causes an enlargement of crowns; and a few suckers should now be left to supply future wants. When the fruits commence to change colour, a gentle circulation of air, both night and day, should be preserved, with less moisture in the air; and water withheld from individual plants as their fruits commence to ripen.

Cayennes and Rothschilds treated as above, ripen fruits about a month later than Queens; and strong suckers, potted in February, and a month or two later, or crowns rooted at intervals during winter, afford a supply of fruits in the autumn and winter months. *Thos. Coomber, Hendre Gardens, Monmouth.*

OUR DOCTOR'S GARDEN.

WHETHER it be that botany being formerly among the prescribed subjects in the curriculum of an embryo doctor, or that the result is merely due to a liberal education, the fact is patent that next to the parson's, the doctor's garden is best in most villages and towns, and not infrequently next before the "rectory garden."

In the little town which has been my home for some thirty years, our doctor's garden is *facile princeps* "the garden," and under the care of Mr. John Tabor, the head gardener, aided by the encouragement supplied by Dr. Wilks, everything is well done. Within a space of about 2 acres is concentrated as complete an establishment as is not often to be found.

The lawn is irregular in shape, with a broad sloping border round, now planted with gay bedding plants, with the exception of that portion along the front of the vinery, which is planted with dwarf foliage plants, *Alternanthera*, succulents, *Coleus*, &c. One bed on the lawn discloses the leading passion of the proprietor, as, though only 4 feet in diameter, I noted no fewer than forty growths of *Cypripedium* spectabile, each showing a strong bloom-spike, and some already of the colour in bud. This bed had only a slight protection during the winter with cocoa-refuse, and a little shade is given now. *C. calceolus*, although tried, has not been so successfully grown.

On the east side of the lawn is the fruit garden, and on the north a small kitchen garden, judiciously cropped, with all that is necessary for a small establishment; but even this is invaded by a young army of *Chrysanthemums*, the second leading feature here, this cadet force being kept in order by some veteran old plants, which took the prizes last year in open competition. These, Mr. Tabor says, will be of great value to him in the early autumn for decoration, as they throw a great wealth of fair-sized flowers, and are earlier than the yearling plants. Here, too, under a south wall are a few large specimen *Ericas*, already promising a fine display of bloom.

The walls are well furnished with Peaches, Nectarines, and other stone fruits, and a few Pears, all of which are holding a plentiful crop, which is fortunate, as the Peaches in the Peach-house are not fruiting, the probable cause being the specimen

Chrysanthemums were housed here, and their success was not compatible with the welfare of the Peach trees.

Here in the shade were the foreman and his assistants busy putting Chrysanthemum plants on their umbrella-shaped trainers, a form of growing done here with marked success. Grapes are grown in this and another house, but they are not a leading feature.

As a warning to beginners, it will be judicious to mention, that the Vines were on one occasion slightly sponged over with a sponge from which all superfluous paraffin oil had been squeezed, and this was successful. Following this up, however, with a more copious application, the result was that the Vines were killed back, and only with the greatest difficulty was enough uninjured wood found to refurbish the house. Moral.—Beware of paraffin oil!

In this house, under the Vines and Peaches, were

with some fine Loquats, a plant of *Mackaya bella*, *Agapanthus umbellatus*, and a nice specimen pot of the white-flowered *Agapanthus*, some clean plants of *Ipomœa Horsfalliæ*, with some little plants of hybrid Javanese *Rhododendrons*, with here and there zonal and large-flowered *Pelargoniums*. On the warm side of the house was *Lasiandra macrantha*, which, grown in small pots, is starved into free-flowering habit. Nor would a well-flowered bulb of *Eurycles australasica* allow one to pass without notice, nor could I fail to be attracted by a specimen of *Anthurium Scherzerianum* carrying twenty-eight well-developed spathes, and a still finer specimen of *Cypripedium villosum*, these being staged here to retard them; while on a slate shelf at the side, cool and shady, was a small and select batch of that fickle but lovely terrestrial Orchid, *Disa*, in variety, looking happy and promising.

Dr. Wilks, being an ardent musician, gives during

the plants are staged, their pots are screened and partly hidden by pans of *Fittonias*, *Selaginellas*, and such-like plants.

The Orchids have three houses devoted to them, and taking first the cool-house, our constant friends, the *Odontoglots*, claim first notice. Here are numerous *O. Alexandræ*, *O. Pescatorei*, *O. vexillarium*, and *O. cariniferum*; besides happy-looking plants of *O. Cervantesii* and *O. Edwardsii*; *Masdevallias* in robust health, but, with the exception of the "Bottle Imp" variety (*M. chimera*), now past flowering; *Dendrobium infundibulum*, with a good spike; and pots of strong pseudobulbs of *Calanthe natalensis*, giving variety to the collection.

Of *Dendrobes*, some eighty varieties are under Mr. Tabor's care, while such useful kinds as *D. nobile* and *D. densiflorum* are grown in quantity, to give a long succession of flower. In suspended and staged pots and pans are some good examples of *Cœlogyne cristata*, this being grown largely, as the flower is a favourite button-hole with "the Doctor." Here, too, are *Saccolabiums*, *Vandas*, and *Aërides* in fine examples and variety, while along the ridge of the West India Orchid-house is trained the gorgeous *Hibiscus rosa-sinensis*, now in full flower, and paling everything near by its brilliant colouring. Nor must a fine plant of *Dendrobium Dalhousieanum*, with eight flower-spikes, and a similar plant of *thysiflorum*, be unrecorded. *Cypripedia* are represented by no fewer than seventy varieties, some being fine examples of successful culture, the best being *C. caricinum* in a shallow pan; *C. Curtisi*, very fine; *conchiferum ciliolare*, and *Hartwegii*, these being now in flower, *Thunias* are well done, *Marshalli* showing flower, and *Bensonæ* in flower; while *Calanthes* are largely grown, their winter-flowering being a great desideratum here.

But without attempting to emulate the length and dryness of an Orchid catalogue, it would be a grave omission to leave unnoticed a few other genera that are well done, as the *Brassias*, *Maxillarias*, *Aërides*, and *Epidendrum*, all of which in leading and many rare kinds find a place in this collection. Here, too, is a good plant of that not easily done *Grammatophyllum Ellisi*, and to somewhat relieve the sameness here and there a good specimen Fern is introduced. A fine plant of *Adiantum Williamsii*, *Gymnogramma Alstonii*, and *Peruviana argyrea*, of which the head gardener says he lost two bought specimens, but to his joy he found they had left a legacy of countless seedlings behind, and these make healthy and vigorous plants, which he attributes to their being acclimatised. Here, too, are *Impatiens Hawkeri*, but having too much pot-room, only sparsely flowered; and a fine and vigorous plant of that very rarely well done *Liliad Gloriosa superba*, carrying plenty of its grotesque flowers.

There I finished my inspection, well pleased with all I had seen, and more than ever convinced of what may be done where the master and man work together with one common aim. *T. B., Ashford, June.*



FIG. 46.—HYBRID BETWEEN BLACK CURRANT AND GOOSEBERRY. (SEE P. 277.)

the specimen *Azalea indica*, *Camellias*, and such plants making their growth; while three good specimens *Dipladenias*, *Breareleyana* and *amabilis*, were promising soon a rich display of flower.

In a little inside structure in this range were growing and looking delightfully cool and comfortable on this particularly hot June afternoon, a pretty representative collection of filmy Ferns, the best being *Leptolepis pellucida*, *plumosa*, and *superba*, a fine piece of *Trichomanes radicans*, and *Hymenophyllum demissum*, *crispatum* and *nitidum*, with them being associated a few *Selaginellas* and *Aspleniums*, which seem to revel in similar treatment to the filmies.

The large show house was gay and fragrant, except in one corner, where the bizarre but foetid *Aristolochia gigas* was in flower, and diffusing its abominable odour around, making more welcome our approach to two or three well-flowered and clean *Stephanotis floribunda*. Here, too, were several well done pieces of the elegant Japanese *Astilbe* (*A. astilboides*), which had been gently forced, while the central stage is filled up

the year a series of concerts; the contents of his glass-houses are requisitioned to decorate the orchestra, so that his friends and the public not only have a musical treat, but really a good flower show also.

For this purpose many large specimens are grown, among which may be noted standing on the floor of this house, *Pandanus Veitchii* in fine colour; *Anthuriums crystallinum*, *Veitchii*, and *Warocqueanum*, a grand plant of *Medinilla magnifica*, *Clerodendron Balfouri*, well-flowered, and the older but handsome *C. speciosum*. Some beautifully-furnished plants of *Lomaria gibba* lend their graceful greenery, and contrast strongly with the monster specimens of *Eucharis amazonica*, the length of foliage to them averaging 2½ feet, which give good promise of a wealth of their lovely pure white flowers in season. We have here also large specimens of some Orchids—for instance a *Vanda insignis tricolor*, with fifteen leads, averaging thirteen pairs of leaves each. *Vanda Batemanni*, almost as large, with a grand spike of flower now coming, and large masses of *Vanda teres*, now, of course, out of flower. Where

TREES AND SHRUBS.

SCIADOPITYS VERTICILLATA.

The Japanese Umbrella Pine is one of the finest Conifers yet introduced. Its fine bold commanding foliage marks it as one of the most distinct trees from Japan. In its natural habitat it is said to grow from 80 to 100 feet high, but in England I am not aware of plants more than 20 feet. We read in *Veitch's Manual of Coniferae*, the first living plant was received at the Exeter Nursery in 1853, but in a weak state of health, and soon afterwards died; but eight years later, Mr. J. G. Veitch sent home seeds which germinated successfully. Being of a slow-growing nature, it is considered by some to be a difficult subject to manage satisfactorily. It should have well-drained ground, good peat soil, and be protected from east winds. Under such circumstances it will be found to thrive well. A very important item in the successful transplanting of this or any

other tree is to take it up with as good a ball as possible, so that the roots may not be disturbed, and that the plant suffer no check by the operation; the hole for its reception should be ready before the plant is moved, and if the soil is poor, a good addition of peat and leaf-mould added. If the plant is to be taken far, mats or tiffany should be placed round the ball to protect the roots from drying winds; and if the ball falls to pieces, as it often does if the soil is light, and the roots get injured, protect the plant from the sun for a time until it gets hold of the new soil by placing tiffany over it, giving it a damping occasionally. It is very partial to leaf-mould, which should be served as a top-dressing annually. During its growing period it should be kept moist at the roots, but great care should be taken not to over-water it, as it will soon show it by wearing a sickly appearance. It is well worthy a place in the grounds of the most select garden. Standing as single specimens on the lawn, it has no equal amongst the numerous Coniferae, and it is suitable for all kinds of ornamental planting. Its very handsome rich shining green leaves are thick and narrow, measuring from 3 to 5 inches long; they are arranged in whorls, varying in number up to about forty. It was introduced in 1861. *H.*

BRITISH FERNS UNDER GLASS.

UNDOUBTEDLY much of the neglect to which our native Fern varieties have been subject is due to the fact that, in the majority of cases, they are treated no better than the normal forms, and hence, have had little or no opportunity of developing the much greater delicacy which many of them possess. The comparatively coarse common specific forms do well enough out-of-doors, provided only that they are not located in a very temple of *Aeolus*, where they are blown to rags, or in a baking southern aspect, where they are burnt up by the blazing sun. Given, however, moderate shade and protection, they can be massed to great decorative advantage in many situations where a general effect of feathery verdure is a desideratum. When, however, we examine the more delicate abnormal forms in question, we shall find a large number which, under the climatal conditions of most of the British counties, especially the drier eastern ones, absolutely require the protection of glass in order to be able to assume their full character, their finely-cut foliage being ill-fitted to stand the wear and tear of occasional storms, the brunt of which would be well-borne by their robust relatives. With many of the heavily-tasselled varieties, too, the accumulated weight of water in the crests is not only sufficient frequently to break them down, but the density of these crests is often such that the water does not evaporate from their centres, and rottenness is apt to ensue; so that plants of these classes, when exposed, are bound in time to assume a stunted growth, which makes them poor representatives of their true selves. Hence, those who make a specialty of our British Ferns, unless they dwell in very congenial localities indeed, such as are found in our ferniest western districts, are usually compelled to devote either a cold house or frames to a portion of their collection.

For such a purpose, the ideal fernery is a sunk house, a sort of cutting roofed in with glass, as in such a structure we have the best guarantee for that persistent cool and humid state of the atmosphere in which Ferns delight. Ample top light and little or no sunshine should be aimed at. Inside such a house as this, which should not be heated in any way, the Ferns can be accommodated, either (1), in the soil itself in tastefully arranged rockwork; (2), in pots sunk in the soil; or (3), it may be provided with staging in the usual way. In our experience, however, it is well to choose the middle course, i.e., to sink the pots in the soil or mask them with the rockwork, rustic pots of course aiding considerably the more natural aspect aimed at. Some of the larger plants can, of course, be planted with advantage in the soil; but if all be so treated, they cannot be so easily shifted and readjusted, when a change of

position is found desirable owing to the disappearance in winter of the deciduous species, or the rapid growth in spring and consequent crowding, which, under congenial conditions, is certain to occur. In building up the rockwork, suitable nooks and pockets are easily constructed for the various sorts of pots, ordinary, rustic, flat-sided, and so on, so that with a little care and taste, the general natural aspect of the rockwork need be little interfered with, while the advantages of easy shifting as the Ferns develop will speedily manifest themselves.

As we have stated, no heating apparatus should be used. All our native species, with the exception of the Sea Spleenwort (*Aspl. marinum*), and the Maidenhair (*Ad. Capillus-veneris*) are perfectly hardy, and are even benefited by being subjected to the usual rigours of winter. To exclude frost by artificial heating prevents them from resting thoroughly during the winter; hence it will be found that in January or February they are apt to start into premature growth, the effect of which will be certainly evidenced in weakened development, and probably vermin galore in the proper growing season. In our own fernery, which underlies our article as a text does to a sermon, all the plants are frozen hard from time to time during the winter; but with the exception of the two tender species already named, we have never lost a plant on account of the weather. Care must, however, be taken, especially with the dormant deciduous Ferns, such as the Lady Fern, some of the *Lastreas*, and others, which are peculiarly liable to get overlooked, that none of the species suffer from drought.

Although they are asleep, drought at this period saps their vitality terribly, and if we look to Nature as our guide, we shall learn that it is precisely at this season, under natural conditions, that they are kept at their wettest, most habitats being absolutely in a soaking condition all through the winter months. Our practice, in conformity with this teaching, is to keep the crowns constantly well damped, the benefit of which is speedily seen by their plump appearance in early spring prior to rising into vigorous growth in April or May.

Naturally, even in a perfectly cold house, the protection afforded and the elevation of temperature due to confinement on sunny days, have a slight forcing influence, inducing a week or two earlier start than out-of-doors. This, however, has no detrimental effect, as it merely gives them the climatal conditions of the warmest localities in which they are indigenous, and where, indeed, they thrive to the utmost.

Watering, when the fronds are up, should never be on the overhead system. Showers, heavy and light, are certainly afforded by Nature out-of-doors, but it must not be forgotten that she also gives an ampler circulation of air, and engenders a hardier growth than is arrived at under glass. The crested and heavy plumose forms too, are, as we have already indicated, liable to be broken down and seriously damaged by being drenched with water. Most of our own Ferns have never had a drop of water upon their fronds, and yet they are beautifully fresh. As regards water at the roots, that in all cases must be ample, but drainage must be provided, and glazed saucers on no account used, since, even if plenty of drainage be in the pots, if it stands constantly in water, sourness is apt to be engendered, and then, good bye to the health of the plants.

With regard to temperature, in hot dry weather all means should be taken to keep the temperature as low as possible by means of judicious ventilation and shading, but the ventilation should not mean draughts, nor the shading mean gloom, since the more light, bar burning sunshine, the greater the health and beauty of the Ferns. In the shadiest portion of the house, a few *Wardian* cases would be at home for the accommodation of a collection of Filmy Ferns, of which besides our native *Hymenophyllum* (*H. tunbridgensae* and *unilaterale*), and the Bristle Fern (*Trichomanes radicans*), of which latter there are several marked varieties, a number of charming exotic forms are hardy enough to stand our climate. Among these, the two gems *Todea*

superba and *T. pellucida* form grand specimens in a comparatively short time, and are seen to best advantage when given a case to themselves. Lumpy sandy peat mixed with pieces of sandstone, and amply drained, suits all we have named and most of the others.

Various methods of masking the walls may be used with advantage. We have seen a wall covered with slabs of brown fibry peat, kept in place with galvanised wires fixed to the wall by nails. This speedily becomes alive with young Ferns arising from spores. Moulded wall tiles are also made to affix to the walls, and contain soil, and a very pretty effect can be obtained by judicious use of these. Cork is a very handy material for the formation of pockets and artificial rustic work, but it is not quite the right thing in the right place, being so impervious to moisture as to be apt to breed sourness in enclosed soil, and in course of time also woodlice find too much harbourage in it for the good of the installed plants. For hanging-baskets, galvanised, or better still, copper-wire frames filled with peat and moss, are the most natural-looking, if we may so speak of contrivances that are never found in Nature. Great care must, however, be exercised that these do not get dry, which, owing to their exposed position, is very likely to happen. A small porous pit embedded in the centre, corked and kept filled with water, is a great safeguard against a thorough drying out. These should not be suspended over other plants, but over the paths, since the drip from them is likely to damage the plants beneath. Should they become dry, they must be taken down and soaked, as all water supplied when once drought is established simply runs off or through, as if the basket were a duck's back.

Should vermin appear in the shape of aphids, thrips, white-fly or others of the tribe, we have found nothing so effectual for their extermination as *Lethorion* cones, which, moreover, do not appear to have the least detrimental effect upon the young foliage. Early in May is the time to look carefully for these pests, which by that time have generally all hatched from the previous season's eggs, and have not themselves reached the egg-laying stage. Hence, if wiped out at this time, they only reappear if re-imported. Aphides, as we know, propagate in a manner peculiar to themselves, and hence are somewhat outside our last remark as regards the eggs, though not entirely so; even these, however, succumb to *Lethorion* vapour *in toto*, and will not recur if the plants be healthy. *Chas. T. Druery, F.L.S.*

THE CAMPHOR TRADE OF CHINA.

A good deal of interest has of late been centred around the supply of Chinese camphor to the English market, in consequence of the demand exceeding the supply. We learn, however, from a recent report from Tamsin, that the export of camphor, which in 1890 amounted to only 7717 cwt., sprang in 1891 to 19,953 cwt. At one time the Hong Kong market went so low as to show a slight loss on every shipment, but the local firms continued buying, and were eventually rewarded for their perseverance by a rise in the market, which once more placed the camphor trade on a favourable footing. It experienced a more serious check, however, in the autumn, when an outbreak occurred among the savages, who, unable to distinguish between the Chinese caretakers of the camphor stoves, built with foreign capital, and their usual foes, attacked the Chinese generally, and destroyed numbers of stoves. Nothing could be done, the Chinese being quite unable to protect the stoves, or punish the savages; so one resident, who had considerable capital, invested in the business, boldly penetrated into the interior, at a time when the government troops and savages were at daggers drawn, and managed to make satisfactory arrangements about the balance of his money and stoves. What were destroyed will, doubtless, be a dead loss; but it is interesting, though not, perhaps, consoling to the losers, to see that a solitary foreigner can

safely venture, with a Chinese interpreter, into territory which the government troops do not dare to approach. If this rich and lovely island, most aptly named Formosa by the Portuguese, who probably knew much more about it than we do, were ever to fall into the hands of a civilised foreign power, there would be no difficulty in coming to friendly terms with the aborigines, who welcome a foreigner with the name of "brother."

The adventurous foreigner mentioned above, it is said, was not an Englishman, no British firm having as yet taken up the camphor trade.

THE CULTIVATION OF RICE IN CHINA.

IN a report on the trade of Tamsin for the year 1891, the British Consul gives an interesting account of Rice planting. He says the hardest work is in the Rice fields. Two crops are sown and gathered in the year, harvest times being in the fifth and tenth months of the Chinese year, or about June and November. With such a short rest for the soil, heavy manuring is indispensable, and the neighbourhood of Paddy-fields at such a time is anything but desirable. From sunrise to sunset, the plodding native is busy, whatever the weather may be, ploughing up the fields with the assistance of the patient but hideous water-buffalo, and manuring them in readiness for the coming crop, which is meanwhile gradually springing up in little wet nurseries carefully sheltered from the north wind by straw screens. When the fields are sufficiently ploughed, irrigation has to be carried out, and a familiar sound at such times is the harsh squeak of the clumsy-looking but ingenious water-wheel, which is worked by the feet with revolving treadles, on which the native walks, as it were, from one to the next, whilst he hangs with his arms over a horizontal bar, fixed at a convenient height. In this way, he pumps up water from a lower to a higher level, and when his day's work is done, walks home with his wheel over his shoulder.

The economy of the Chinese prompts them to make use of every little patch that is conveniently near a stream, and in such little patches, where there would be no possible room for the clumsy buffalo to get round with a plough, a most ingenious contrivance is adopted for breaking up the lumpy wet surface into a level smooth enough for transplanting. The labourer tramples all over the wet patch with huge wooden skates, as they might be called, but having four deep wooden blades instead of one; also, instead of fastening such heavy things to his feet, a long loop of rattan from the skates to his hands enables him to hold them tight to his feet, and thus equalise the labour of legs and arms. The result is all that can be wished. With regard to the transplanting, the rapidity with which this is carried out is wonderful. Little bundles of the young shoots are brought from the nurseries by boys to the men, who are standing up to their ankles in mud and water, and as many as twenty shoots can be planted in a minute, or at the rate of 1200 in an hour. The average rate is doubtless much less, but the rapidity and skill with which these men plant the shoots with the right hand only, the left holding the bundle of shoots, is marvellous.

After the transplanting, much remains to be done in the way of constantly clearing out weeds and other obstructions to growth, which is done almost entirely with the hand, the labourer either squatting or grovelling on his hands and knees in the deep mud. Finally, when the rice is fully grown, the water is drained off the fields, the grain quickly ripens, and the harvesting begins. In this, as in everything else, the procedure is primitive in the extreme. A large deep wooden tub is brought into the field, at one side of which is fixed a rude screen formed by three or four Bamboos, and a piece of as cheap sacking as can possibly be procured. A man standing in front of this tub thus screened receives bundles of the rice from the reapers, and holding a large double handful brings it down with a smart thwack inside the tub. This repeated once or twice

threshes out the grain, and the straw is thrown aside to be afterwards piled in straw stacks, that reminds one of the ricks at home. Thus, no threshing floors are used, but every farm-house has its smooth mud plastered floor, on which the rice is laid out to get thoroughly dried in the sun. When ready for the market the rice or paddy sells for an average price of 1 dol. 40 c.—or about 4s.—a picul of 133½ lb. avoirdupois. *J. R. Jackson, Kew.*

FLORISTS' FLOWERS.

DAHLIAS.

THE Dahlia is easily damaged by wind, and the plants should be looked over weekly, and made secure, and such as are intended to produce exhibition blooms should be kept steadily growing, being kept moist at the root. It is good practice to mulch the soil first with decayed manure, and apply water afterwards. In hot dry weather the leaves should be kept clean with the garden engine. Earwigs must be caught before the flowers gain much size, or they will sadly mar their beauty; pieces of Bean stalks, or small flower-pots filled with hay, placed on the end of the Dahlia stakes, and emptied every day, will catch great numbers of these troublesome insects. The small and weak lateral shoots, which will not produce good blooms, should be cut off, and if these be cut through below a joint, and placed snugly in small pots, they will form roots readily in a frame with a mild bottom heat, as do Hollyhock cuttings at this season. When well rooted, repot into 48's, when they will form tubers by the end of the growing season. Exhibition Dahlias must have four or five stout sticks placed to the main side shoots; it is bad practice to tie these growths to one stake only, as they rock about sometimes, and get twisted and broken. Weak liquid manure water is beneficial after the flower buds are formed.

THE GLADIOLUS.

I have found that the fine garden varieties of *G. gandavensis* do best when the soil has been well exposed to the weather, it being not enough to trench it over late in the season—say October or November—and let it lay fallow. I recommend the trenching and manuring to be done in August, and the manure to be placed at least 6 inches below the surface. I place a layer of it at a depth of 18 inches, and another at 9 inches. Some persons may not care to have so long a fallow, but I believe the late M. Souchet, who established a world-wide reputation for himself by his success in raising new varieties of, and cultivating Gladiolus, used to let one portion of his ground lay fallow for an entire season, turning it over during the summer and winter, and keeping it free from weeds. Plants in growth should have sticks placed to them to prevent the wind snapping them off at the bulbs, or even throwing the plants out of the ground. Fertilise good flowers if seed-saving is practised. Seedlings from the March or April sowings will need but little attention this season if they are in the border, except a good watering in dry weather, as will the flowering plants, for no good spikes will be obtained, even from full-grown bulbs, unless they are sufficiently watered. Weak guano water is excellent for producing healthy deep green foliage and strong spikes. A species of green caterpillar sometimes lodges upon the spikes, and thrives amazingly upon the half-opened flowers; it can be caught feeding at night, or may be found safely enconced in the day-time in the axils of the leaves.

THE POLYANTHUS.

I have given up all hopes of successfully growing the finer named varieties of the laced Polyanthus in our dry district, it being impracticable to keep the leaves free from red-spider. It is easy enough to raise seedlings, and when a good strain has been obtained, some very fine varieties are produced. They must not be grown in juxta-position with the fancy varieties, the pollen from these seeming to be the more potent, and laced varieties, if crossed with the fancies, are spoiled, as you get a new class of bright-

coloured fancies; but that is not what is wanted. The young seedling plants of laced varieties and fancies have been planted out in the open border, and are growing freely, and need to be kept free from weeds by means of the Dutch hoe. A space of 12 inches between each plant is enough. *J. Douglas, Great Gearies, Ilford.*

THE CULTURE AND TRADE IN TOBACCO IN GERMANY.

REFERRING to the cultivation of and trade in tobacco, at Frankfort, during the year 1891, Consul-General Oppenheimer gives the following interesting facts:—"In July, in consequence of the wet mild weather, the young plants looked very healthy, and the accounts of them were very cheerful; but, on the rain continuing, and the thermometer falling, the plants stopped growing, and there were loud complaints. The price of old tobaccos rose, but that was no comfort to the peasant, as tobacco is rather an expensive crop to the grower. It takes a great deal out of the soil, which, consequently, requires to be very highly manured; and the labour in planting and keeping the field clean, is also considerable. At the beginning of August the plants looked worse still, and the first gatherings of the new crop, towards the end of the month, were very unsatisfactory. Happily, September was a beautiful, sunny month; the harvest was therefore postponed, and lasted on till the close, and the tobacco was plucked and hung in a good, dry condition. On being taken down and tested, the leaf, although deficient in colour, turned out to be of much better quality than had been anticipated. The prices paid by manufacturers and dealers to the villagers in Baden and the neighbouring lands varied considerably; but the whole crop was bought up in a comparatively very short time. Less tobacco had been planted, and the new leaf burnt well, and was of mild flavour. Germany cannot produce sufficient tobacco for its own constantly-increasing consumption. Nevertheless, the peasants in Baden and in the Palatinate complain that it hardly pays them now to grow Tobacco. They declare that the German leaf, which is subject to a government tax of £1 2s. 6d. per 100 kilos., cannot compete with the Java, Sumatra, and Brazilian tobaccos that are subject to an import duty of £4 5s. per 100 kilos., and demand that this tax shall be raised to £6 5s. per 100 kilos. while others propose that the German tobacco shall be relieved of all burdens. To make tobacco growing free would a radical measure, which is hardly likely to be carried out; the German governments, however, are solicitous for the welfare of the peasant growers, and so something will probably be done. It is, indeed, not easy, as with the increasing wealth of the country the demand is growing for cigars of better quality, and for such the Palatinate tobacco is unsuitable. For Baden the tobacco question is of considerable importance.

FOREIGN CORRESPONDENCE.

WASHINGTON, D.C., U.S.

August 15.—The heat here just now is very hard to bear, and one takes to fruit naturally as a palliative . . . Scanning the *Gardeners' Chronicle* market lists—from Covent Garden to rejuvenated Farringdon—the other day, it struck me a few notes might not prove uninteresting. So far we have had few fruits here—only Blackberries (Brambles, as we call them at home). There are few Apples to be seen; the Peach is scarce; Pears are good, but I think they come from the South—they cost 1½d. each. Cabbages sell according to size—from 4d. to 6d. each. Grapes are always cheap here—carts go round when the fruit is in season—selling in boxes of 10 lb. at from 7½d. to 1s. per box. Potatoes fetch from 8s. to 12s. 6d. per barrel of about 3 bushels; but they charge me on delivery 4s. to 4s. 9d. per bushel. Onions sell at about 1½d. per lb. Of course, the supply affects the prices—thus Apples

can sometimes be bought as low as 6s. 3d., and again at not less than 12s. 6d. to 17s. per barrel, in the market here. Tomatoes, native, 40 to 50 cents; Beans (white N.Y.), 7s. to 7s. 6d.; Lima Beans, 1½d. per lb.; Peaches (mountain), 8s. to 12s. per box; do., 2s. to 5s. per basket; do. Southern Clingstones, 3s. to 6s. 6d. per box. Plums, blue, 4d. to 5d. per quart; Water Melons, 32s. to 66s. per 100; Cantaloupes, 4s. to 6s. per barrel. L. P.

SOUTHERN CALIFORNIAN NOTES.

To one unaccustomed to the various shades of yellow, gray, and brown of the dry hills and plains of Southern California, the aspect of Nature during the long dry summer is not pleasing, the lush and brilliant greens of the vegetation of lands where summer rains occur is wanting; to old residents, however, there is a charm about the summer that grows on one as residence in the country continues. The mornings are nearly always cool and fresh, and dews precipitated over night cause the various dry growths to exhale a delicious odour; the days are brilliant with ardent sunshine, and as the shadows of evening draw across the land, the rocky masses of the sierras assume rare tints of golden-brown and pink, deepening to richest purple.

With the advent of the winter rains, however, a rapid transformation takes place; innumerable grasses spring up within a week, and as early as the first week in February, many of our beautiful wildings are above-ground, and commencing to bloom; quantities of *Calochortus*, *Dodecatheons*, *Eschscholtzias*, and others, can be gathered in half-an-hour's walk from Los Angeles. Nearer the base of the sierras, however, the number of species increases greatly; several beautiful *Pentstemons* occur, and *Mimulus*, *Phacelias*, *Nemophilas*, and *Delphiniums* are particularly abundant; while among shrubs, the beautiful *Ceanothus* is almost ready to burst into bloom. Later on, the vast army of white and yellow Composites take the field, and in some places the superb *Romneya Coulterii* can be seen after May, with stems 10 to 15 feet in height covered with its splendid flowers.

Regarding operations in the garden, it may be interesting to some of your readers to refer briefly to climatic conditions which are highly favourable to horticultural work, always allowing that an ample water supply is at hand. The year is divided into the dry and wet seasons, which latter corresponds to the winter of the States lying east of the Rocky Mountains. The mean summer temperature is about 70°, with an extreme range of from 55° to 100°. Winter or the wet season has a mean temperature of 55°, with an extreme range of from 35° to 80°; these extremes occur but perhaps half a dozen times during the season. Generally the range during December and January is from 40° to 65°, while in low-lying places light frost occurs a few times. In summer the figures given above are not common, the temperature generally ranging from 65° at night to 85° during the warmest part of the day. It will be seen, therefore, that with water for summer use, gardening easily grows to be a passion with anyone fond of plants and flowers.

Already the Dutch Bulbs have come and gone, here and there a patch of *Narcissus regales* us with its fragrance, while Violets and Carnations are at their best, and Calla Lilies everywhere. Soon the Cape Bulbs will be in bloom; and, indeed, the sweet-scented *Freesias* are already commencing to blossom. A little later on we will have *Ixias*, *Sparaxis*, *Babianas* and *Gladiolus*, though the first three cannot be said to be common in gardens as yet. Cape bulbs find congenial conditions here, and I fancy there are few that cannot be grown in some situation about the garden. *Himantophyllum miniatum* grows and blooms finely in a partially shaded position, where the hot sunshine cannot reach its leaves. With the exception of a very few, we find the tropical bulbous plants succeed admirably. I have several *Pancratiums* and *Crinum*s, such as *C. amabile*, *C. pedunculatum*, *C. giganteum*, *C. americanum*, and some others, the names of which we would much like to know.

Several varieties of *Amaryllis*, *Zephyranthes*, *Vallotta*, and others are more or less common. Last year I planted out *Alpinia nutans*, and it now looks perfectly thrifty, and I hope to see it in flower this summer. In a few places can be seen some good plants of *Plumeria alba*, truly a tropical shrub, which flowers beautifully every summer. In a shady corner of our garden, we have fine plants of *Franciscea latifolia* and *Rogiera gratissima* in vigorous health, and covered with buds and panicles nearly ready to open; the latter we prize very highly, its perfume being so agreeable, while in full sun we have a grand old plant of *Tabernaemontana coronaria*, double-flowered variety, 5 feet high, with a trunk as thick as one's arm. Every summer it bears hundreds of its choice blooms. With *Ixoras*, however, "it is not to be," they gradually die away—perhaps the nights are not hot enough, or the air too dry.

Roses bloom more or less all the year, excepting, of course, the remountants; but you should see them during the early months of the year, the Teas and Noisettes especially, grand old *Lamarques* smothering the verandahs in bloom and foliage, patriarchs they are, with trunks 6 inches or more in diameter. In a few choice gardens a good many tropical plants can be seen, such as *Stephanotis*, *Bignonias*, and *Bougainvilleas*. In our own garden we have these and some others, notably *Schubertia grandiflora*, planted last spring as a small plant. Before autumn it had grown some 20 feet, flowering finely, and is now pushing its new growth; also *Aristolochia elegans* and *Stigmaphyllon ciliatum*. We have also a plant of *Quisqualis indica*, which wintered through nicely, though losing a good many of its leaves. I observed the other day, however, that it is already breaking away, and we hope to see it in flower this summer.

As I sit by the open window this sunny afternoon writing this letter to you, I occasionally raise my eyes from the work in hand, and look out upon a few plants now in bloom, notably a large mass of *Poinsettia*, brilliant with its scarlet bracts; nearer at hand drooping clusters of richest orange, the gifts of *Bignonia venusta*, hang gracefully from the eaves; some *Bouvardias* and the Chinese *Hibiscus* add further colour, but the enticing odours from Violets, *Freesias*, *Daphne*, and the delightful fragrance of the *Olea*, coupled with the spirited carolling of our regal songster, the mocking bird, in a large *Ficus* hard by, protest against further inside work. J. C. Harvey, Los Angeles, Cal., February.

NURSERY NOTES.

MR. E. C. GILBERT'S NURSERY, SPRINGFIELD, HASTINGS.

WHEN an exhibitor of stove and greenhouse plants is so very generally successful at flower shows, one is always desirous of ascertaining "how it is done," and with some such intent, the writer of the present note wended his way up the picturesque High Street of the Old Town, and out into the villa-lined hilly road leading to Orme. About half a mile from the end of the High Street stands Springfield Nursery, quite a small place, nestling in a fold of the ridge on the western side of the valley.

At the lower part of the ground evergreens, fit for furnishing window boxes and forecourts, &c., interspersed with a few trees, weeping, and others, were found.

The houses and offices are situated at the higher end of the piece of land, and are of all sizes, shapes, and aspects, just such structures, indeed, as an exhibitor requires. Here a small one for growing Heaths, there another, still smaller, where *Crotons* may be accommodated with the high degree of heat they require whilst growing, and an unshaded roof.

In another place or two we found some plants that may be said to have been damaged in the various contests they have engaged in—a hospital, in fact. Some of these old combatants looked much the worse for wear, and as if they would need a whole year to recruit their strength.

Some of the houses are utilised for retarding, some for wintering, some solely for accommodating plants whilst making active growth. This must be so where exhibiting is followed up as a business, apart

from the other occupations of the nurseryman; and those who have seen Mr. Gilbert's exhibition plants—his *Allamandas Wardleana* and *grandiflora*, the latter a beautiful flower of soft yellow colour; *Stephanotis grandiflora*; the *Ericas*, so capitally bloomed; *Tremandras*, *Bougainvillea glabra*, Tree Ferns and Palms, will bear witness to the skill with which they are cultivated, and brought to exhibitions at the right moment.

Large quantities of Tomatoes, of a most prolific variety, were growing in some of the long span-roofed pits, in others were observed zonal *Pelargoniums* and general furnishing materials, for which there is a good demand in the town. Large pots or tubs of zonal *Pelargoniums* are much in favour, and such robust, fine trussed varieties as *Henri Jacoby*, *John Gibbons*, and *F. V. Raspail*, are those mostly grown. *Roses* and *Chrysanthemums*, in pots, for furnishing cut bloom were remarked in quantity, the latter being particularly robust, and well-furnished with foliage.

Another plant that is much in demand is *Cocos plumosus*. It is a species of Palm, of graceful appearance, tall and slender, doing well for a long time in quite small pots, and therefore very suitable as a furnishing plant. The first or seed leaf remains on the plant for four or five years, contrasting singularly with the true foliage, which is pinnate.

We understood that a nursery for nursery-stuff of larger growth had been established some few miles distant. We came away from the place with the notion that fine houses, the newest thing in hot-water piping, fads in ventilation, perfect floors and staging, were not absolute necessities in the production of first-class exhibition plants, but that unremitting attention to the requirements of the plants at all seasons, the right kinds of soil, and good water, are the essential points.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

THE PINERY.—If a hotbed has been got in readiness, the suckers which are the strongest may be detached by twisting them from the old plants, their butt ends being cleared with a knife of the bruised tissues. Beyond this amount of preparation, only a few of the smaller leaves may be pulled off, so that the soil may come in immediate contact with the rootlets already formed about that point. The compost may consist of fibry yellow loam, to which a fair sprinkling of wood-ash and a bone manure may be added, and this soil should be placed in the Pine-stove or other warm place to be warmed before use. For the larger suckers 7-inch pots are suitable, a smaller size being employed for the small sizes, and these pots should be well-drained with crocks and rough siftings. If space can be afforded, it will be an advantage to allow most of the very small suckers to remain on the parent plant for some time longer, growth being then quicker than when they are detached at that early stage. Put the potted suckers low down in the soil, making it firm about them with a rammer; plunging the pots up to their rims in the hotbed, affording a thin shade during sunny days, giving less and less as the autumn advances, and maintaining a humid atmosphere in the structure.

VINES.—Vines which were forced early should have the lateral growths cut back to within 1 foot of the main rods, so as to concentrate the remaining efforts of the Vine in plumping up the buds that will be next year's fruit producers. All Vines which have been allowed to extend their lateral shoots unrestrained are most benefited by this course of treatment, and it is for those who may have adopted this method of Vine culture that these remarks are intended. As moisture at the root of the Vine is indispensable at all times, see that the borders do not lack this factor, and when it becomes necessary to afford water, some kind of suitable manure should be applied at the same time. Late Vines, too, will most likely stand in need of watering, the drying days we have had lately having materially exhausted the supplies of moisture in the soil. The hours of the early morning of a day that is likely to be sunny should be chosen for this job, so that the surface of the soil may get dry before night; at the same time, a brisk warmth should be kept up in the heating apparatus, and the ventilators kept wide open. The lateral growths of late Vines should be shortened whenever a bunch of Grapes is removed.

CUCUMBER SEEDS may now be sown of some good and prolific varieties for the winter and spring supply. I have found Tender and True good for this purpose, but I intend to try a seedling from it which bears an excellent character as regards hardiness and free-fruited properties.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

CABBAGES AND COLEWORTS.—A good breadth of the strongest plants of the first-named, if planted now, will afford Cabbages in December. The plants should be put out in rows at 18 inches apart, and half that distance, or less space, from plant to plant.

COLEWORTS.—The Hardy Green variety may be planted rather close together for early spring cutting. They will thus come into use before the autumn-sown Cabbages, and often prove of great service after severe winters.

TURNIPS.—Seed for the autumn and early winter supply of Turnips will have already been sown about one month ago; but a sowing may now be made of Golden Ball and Chirk Castle varieties. The sowing should be made on land in good heart—a piece just cleared of Potatoes would suit them admirably, and would need merely to be cleaned and raked over before sowing it; and if it be light land, Turnips may be obtained from this sowing all through the winter, and where Turnip-tops are consumed in the spring-time, these roots will afford a supply. A quick growth in the Turnip may be secured by sowing the seed in moist weather, and keeping the soil moist till the true leaf appears, and by sprinkling fish-manure or guano between the rows just before rain.

SPINACH.—If seeds of the Improved Round-seeded Spinach be sown at the present time, some useful produce may be secured when the earlier variety, which, owing to the size of the leaves, is more affected by hard frost, affords but little. This late sowing is generally to be trusted to furnish leaves fit for consumption even in the severest winter. The drills need not be more than 15 inches apart, and care should be taken not to sow on land which is infested with the grub or wireworm.

EARLY POTATOS.—Those left to mature for planting purposes may now be lifted, sorted, and placed on a dry border on boards, &c., to become green. The Ashleaf varieties will all be ready for digging at this date, as will many of the second earlies, and nothing is gained by leaving the tubers in the earth after the tops have decayed. Take care that every tuber, however small, is collected when digging them up, otherwise it is almost an impossibility to keep the stocks pure.

MUSHROOMS.—If manure has been prepared, the present is a good time to begin the making of beds in the house. If woodlice or beetles abound in the house, use dilute carbolic acid about the floors and shelves, and limewash the walls. Materials for later beds may be prepared, a new bed being made each month to maintain a constant supply of Mushrooms. When a large quantity of Mushrooms is required in a short space of time, the production may be hastened by inserting some spawn taken from beds in good bearing, taking care to have the beds at the proper temperature. Exhausted beds may sometimes have their fertility revived by watering them with warm liquid manure from the cowyard, or by watering with very weak salt water.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

CYCLAMEN.—One and two-year-old plants, which have been stood out in the open, or in cold frames, and are starting into growth, should now be repotted. Use two parts of rich fibrous loam, one of decayed cow manure, and one of leaf soil, with sand in proportion, and remove all the old soil from around the corms; any pots into which the corms can be conveniently placed will be large enough for a time. After repotting, it is much safer to place them in a cold frame, than allow them to remain in the open, on account of heavy rains, which cause the soil to become saturated, and the plants to become stunted.

PROPAGATION.—Seeds may now be sown, using finely-sifted soil, consisting of two parts loam and one of leaf-soil, and sand in proportion. Sow the seeds evenly over the surface, afterwards covering them with about a quarter of an inch of soil. The pans should then have a piece of glass placed over them, on which put a little damp moss to prevent the soil from drying up too quickly; place the pans in a

structure where the night temperature is not allowed to fall below 65°.

WINTER-BLOOMING SOFT-WOODED PLANTS.—Such plants as *Salvias*, *Solanums*, &c., which have been planted out in the open, should now have their roots cut round, so as to prepare them for lifting, and if this operation is performed again in the course of a fortnight's time, the plants will not receive much check.

WINTER-FLOWERING CARNATIONS.—Plants of these which have been planted out in the open, should now be lifted and potted up, if it is intended for them to bloom during the winter. The operation should be executed with great care, so that the roots may not be unnecessarily injured. Any that have been in pots during the summer, and have filled the same with roots, may now have a little assistance given them in the shape of weak manure-water. In cases where the stock for next year is deficient, a batch of cuttings may still be put in, placing them on a gentle hot-bed, where the bottom-heat can be maintained until they have struck root, and by no means try to strike them in a cold frame at this season, as it is sure to end in failure.

CELOSIA PYRAMIDALIS.—Plants raised from seed sown late, to furnish plants to bloom during late autumn, should be moved into pots in which it is intended for them to bloom, 6 or 7-inch will be found large enough, as a great deal may be done in the way of giving the plant the required strength, by applying weak manure water; also syringe the foliage freely when closing the ventilators in the afternoon, as a preventive against red spider, which is very partial to these plants.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

THE FLOWER BEDS.—The heavy rains of late did damage to the plants and beat the flowers to pieces. Carpet-bedding was also affected by the deluge of rain, when they were so bright and gay. However, should we again be favoured with fine weather, all the beds will become bright and attractive once more. In the meantime, all damaged flower-trusses and dead and withered leaves must be removed speedily, the lawn and gravel walks swept and rolled, and everything that tends to tidiness performed with all speed. The flowers of *Cineraria maritima* and other foliage plants must be removed as fast as they appear on the plants, and the shoots of *Perilla nankiensis* and *Iresines* should be pinched back and pegged to the earth as occasion arises. Beds of *Verbena*, *Petunia*, *Gaillardia*, *Phlox Drummondii*, and the like will require to be rendered symmetrical by pruning rampant growth and thinning the shoots, so as to enable the flowers to be seen to advantage. Trimmings of *Mesembryanthemum*, *Alternanthera*, variegated *Alyssum*, *Gnaphalium*, *Pelargonium*, and *Verbenas* may be used for increase, putting the cuttings rather thickly together in well-drained 6-inch pots, filled with light soil, and having a surfacing of silver sand. Stand the pots closely together on a worm-proof bottom in a pit or frame, and near to the glass, affording water through a fine rose to settle the soil. Keep the frame close, and shade the cuttings from the sun till roots form.

HERBACEOUS PLANTS.—These, too, bear evidence of the recent rough weather, and the removal of broken shoots and stems, and the securing of the plants to their supports should have early attention. *Michaelmas Daisies*, *Phloxes*, perennial *Sunflowers*, and *Anemone japonica*, are good wet weather flowers, and the rain has hurt them but little. The same may be said of the *Montbretias*, which, with their pretty grass-like foliage, and branching spikes of bright yellow, orange, and scarlet flowers, are very effective, either as cut flowers, or growing in clumps in the borders.

ROSES.—Remove root-suckers from worked plants as soon as they can be handled, also spent blooms, so as to throw the strength of the plants into the later blooms.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

Those intending to plant fruit trees extensively in the coming autumn, providing the land is at liberty, should set about the work at once, and get the ground thoroughly prepared, and in good order for the reception of the young trees and bushes, so that the planting may be pushed forward as early as possible after it is safe to lift the roots, because the earlier the trees are planted the better chance will they have. Fruit trees should always be planted

on well-drained land, with a fairly good depth of loam. If possible, it should be well trenched up, or worked thoroughly with the steam cultivator sufficiently deep to break up the hard bottom. Before planting-time arrives, particular attention should be paid as to the best and most suitable sorts for the various purposes, and a visit to some of the large nurseries or large orchards in full bearing will materially assist the planter in his selection. Of Apples, Lord Derby, Lord Grosvenor, Red Hawthornden, Eckinville, Worcester Pearmain, Lane's Prince Albert, Fillbasket, Tower of Glamis, Golden Spire, New Hawthornden, Stone's Stirling Castle, Cox's Pomona, Altriston, Bismarck, Summer Golden Pippin, Pott's Seedling, Bramley Seedling, Warner's King, Wellington, Northern Greening, Cox's Orange, and Gladstone are all good and satisfactory croppers; so are King of the Pippins and Golden Knob.

MORELLO CHERRIES.—With careful netting for keeping out birds, these fruits will hang and keep in good condition a long time after they are ripe, but so soon as they are gathered, the foliage should be thoroughly syringed with weak Gishurst compound, or soap-suds, and should the foliage be black, a wineglassful of petroleum added, and thoroughly well mixed, will in a great measure remove it, leaving the leaves bright and healthy. All trees from which the fruits have been gathered, and are infested with scale, may be washed repeatedly with petroleum and soapy-water, at the rate of a wineglassful to 4 gallons of water, keeping the contents well mixed together as it is being used. It is better to be on the safe side when using insecticides, and to do the trees over a few times in preference to one or two heavy dressings.

FIGS.—These should be gone over once more, and all the soft useless shoots trimmed off; light and air being essential to well-flavoured fruits. Some of the points of shoots bearing much fruit may be nipped out to hasten ripening; but at intervals all over the trees, some should be laid in at full length to fruit next year, while shortening should not be practised on short-jointed wood that usually ripen and produce good crops of fruit. In narrow restricted borders, the roots may require further attention with regard to water and nourishment.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

SEEDLING ORCHIDS.—Young seedling *Cattleyas*, *Dendrobiums*, and *Cypripediums* are best pricked off into thimbles (1-inch pots) as soon after germination as it can safely be done. I prefer to do so when the first tiny leaf is made, as during further growth of the pseudobulb new roots are emitted into fresh, clean material. These small seed-pots should be half-filled with crocks, then filled to the rim with chopped sphagnum-moss, best fibrous peat, and sharp silver-sand, mixed well together, and made rather firm. I then generally press down the compost all round by means of a pointed stick close to the rim of the pot, so as to leave a slight ridge just deep enough to steady the half-dozen small seedlings, which I place in it on the point of the stick; the compost should be well watered previous to receiving the seedlings, after which the watering is a delicate operation, and must be done with great care until the little plants are steadied by their own roots. It is best to place a number of the small pots containing seedlings into a shallow pan containing sphagnum moss, and suspend them near the glass, but well shaded from the sun. If the sphagnum moss be kept wet, it will greatly assist the young seedlings by keeping them cool and moist. In the case of *Cattleyas* and *Cypripediums*, this transplanting may be safely done now; but I would not advise the removal of *Dendrobiums*, *Calanthes*, *Thunias*, and the like after this date, but rather let them rest with the plant on which they were sown, which is usually a *Dendrobium*, and pricked off when growth commences in the spring.

THE CATTLEYA-HOUSE.—*Lælia elegans* and its varieties grow best if suspended in baskets or pans near the light; the typical variety frequently makes two pseudobulbs, and flowers twice during the year. *Lælia elegans prasiata* is one of the most beautiful of the type, and is now in flower; the sepals and petals are of a beautiful dark rose colour, the lip round the column pure white, tipped with crimson, and the disc of the lip deep magenta. *L. e. Turneri* is another beautiful variety, being the darkest-coloured of all. A few plants of *Cattleya Leopoldi* are serviceable for flowering at this season, and grow well in this house, as do also the new *Cattleyas Victoria Regina* and *C. Alexandrae*, of which we know but little at present.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY	SEPT. 6	Royal Horticultural Society: Committee Meetings, at the Drill Hall, James Street, Westminster.
WEDNESDAY	SEPT. 7	Royal Caledonian Society, Edinburgh (two days).
THURSDAY	SEPT. 8	Paisley Horticultural (two days).
FRIDAY	SEPT. 9	Earl's Court Exhibition: Show of Autumn Flowers.

MEETING.

FRIDAY	SEPT. 9	Dundee Horticultural Association.
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SALES

MONDAY	SEPT. 5	Dutch Bulbs at Protheroe & Morris' Rooms, at 12 o'clock. Dutch Bulbs at Stevens' Rooms.
TUESDAY	SEPT. 6	Dutch Bulbs at Protheroe & Morris' Rooms, at 12 o'clock. Clearance Sale of Horses, Carriages, &c., at Steel's Nurseries, Kew Road, Richmond, by Protheroe & Morris, at 2 o'clock.
WEDNESDAY	SEPT. 7	Dutch Bulbs at Protheroe & Morris' Rooms, at 12 o'clock. Dutch Bulbs, Crocuses, &c., at Stevens' Rooms.
THURSDAY	SEPT. 8	Dutch Bulbs at Protheroe & Morris' Rooms, at 12 o'clock. Dutch Bulbs, Crocuses, &c., at Stevens' Rooms.
FRIDAY	SEPT. 9	Dutch Bulbs at Protheroe & Morris' Rooms, at 12 o'clock. Unreserved Sale of a valuable Collection of Established Orchids, at Protheroe and Morris' Rooms, at half-past 12 o'clock.
SATURDAY	SEPT. 10	Dutch Bulbs at Protheroe & Morris' Rooms, at 12 o'clock.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—59°1.

The National Co-operative Flower Show at the Crystal Palace.

THOUGH the black Friday of the 19th ult. did its worst to throw a wet blanket over this annual festival of labour, the shadows vanished on the following morning, when from 30,000 to 40,000 visitors, mostly devotees of horticulture or members of friendly societies, or co-operative, profit-sharing enterprises visited the show. Year by year the entries become more numerous, and what is higher proof of success, the quality of what is shown improves. Exhibitors are gradually learning, not only to grow flowers, fruits, and vegetables, but to appreciate to what perfection others can and do grow them. Example here as elsewhere, that is, object-teaching, has proved its power, and pulls up the ignorant and the laggard to a high level of excellence. True, there have been a few failures. But even these have proved potent to raise the level of industrial cultivators to a more uniform excellence. Inferior samples of sorts or of cultivation are gradually disappearing from these great National Co-operative Flower Shows.

At some of the earlier shows, experts often longed to hide half the exhibits staged under the tables. Now, there is scarcely one shown that is not worthy of its place, though from the fact of its being one in a large number of

fifty lots shown for three, four, or more prizes in a class—it cannot always command a prize. This will be still more obvious when it is stated that 300 tables, extending to a total length of half a mile, were filled to repletion with the products of over 300 exhibitors.

These exhibits came from all quarters of the United Kingdom. For the purposes of this show, the latter was divided into eight districts, as follows:—

Class 1.—Northern District.

Class 2.—North-Western District.

Class 3.—Midland and Eastern Districts.



FIG. 47.—NEMESIS CYNANCHIFOLIA. (SEE P. 269.)

Class 4.—Metropolitan District, within a radius of thirteen miles of Charing-Cross.

Class 5.—Southern District: counties of Essex, Hertford, Bedford, Buckingham, Berks, and Oxford.

Class 6.—Southern District, No. 2: counties of Surrey, Sussex, Kent, Hants, Wilts, and Isle of Wight.

Class 7.—Western District.

Class 8.—Scotland and Ireland. The wide geographical range here indicated accounts for a great variety of quality though the difference from this cause is less pronounced than might have been expected, toil and skill being far more influential in originating or developing quality than geographical position. So far as

we know, the promoters of this show have been the first to offer special prizes for special classes and districts; and this particular feature of their programme deserves more support than it has yet received.

We understand that difficulties as to speed and cost of transit place obstacles in the way of a wider competition for these geographical prizes. But, surely, most railway directors would gladly remove such difficulties once a year in favour of the industrial exhibitors at the National Co-operative Flower Show.

Last year, if we remember rightly, one of the finest exhibits came from Aberdeen. This year Scotland and Ireland had but one indifferent exhibit between them. The other divisions ranged from three to eight exhibits each of six varieties of vegetables, neatly arranged. The metropolitan district had seven collections, all good, some specially so; and, with the exception of the absence of the milky whiteness that distinguished the provincial Cauliflowers, few could have told that these collections of fine crisp-looking vegetables had all been grown within 15 miles of Charing Cross.

Partly through the weather of the previous day, more, perhaps, through the lateness of the season, the number of exhibits hardly equalled those of 1891. But the extraordinary advance in quality of the show of this year carried it ahead of all that had preceded it. In the fruit and vegetable classes, one might have counted the inferior exhibits on the fingers of one hand. There were two of Carrots, one of red Currants, and one of Onions. The latter were a lot of five of the finest Onions in the show, with one more, a monster, with a large decayed spot on one side. Another lot consisted of five perfect Turnips instead of six, and which could not be made into six by the search of the jurors, police, and others. We name these facts for two reasons—to give emphasis to the general perfection of the 4000 exhibits, and, for the hundredth time, to remind those not much accustomed to exhibiting, on what small things success or failure in the winning of prizes may depend.

Progress was even more marked in the classes for the development of beauty than for the growth of utility. The Fuchsias, Begonias, Lobelias, and Stocks, have made great progress. Among cut flowers, Roses at this great show have advanced from very indifferent specimens indeed to almost first places at the National or other shows. Taste has also more than kept pace with culture. The baskets of Roses, bouquets, vases, epergnes, &c., all attest to the rapid growth of more cultured taste.

But the main obstacle in the way of the more perfect artistic arrangement in flowers, and groups of plants likewise, not only at the Co-operative Flower Show, but in most other places, lies in the excess of material and of colour. The toning down of glare, and breaking up of tiresome monotony should be effected through the use of a greater quantity and larger variety of verdure. The Swanley College made a brave display of its manifold products, and especially its preserved fruits, in many forms.

FUNGUS FORAY.—The hundredth meeting of the Yorkshire Naturalist's Union will be held on Wednesday and Thursday, September 14 and 15, and in a great measure will be devoted to a fungus foray in the charming district of Castle Howard. Dr. M. C. COOKE and Mr. G. MASSEE, of Kew, have consented to be present, and mycologists from other parts of Britain will be cordially welcome. The secretary, Mr. W. D. ROEBUCK, Sunny Bank, Leeds, will be glad to supply particulars.



FIG. 48.—NEMESIA STRUMOSA. (SEE P. 269.)

HYBRID BETWEEN BLACK CURRANT AND GOOSEBERRY.—Mr. CULVERWELL has kindly sent us a fruiting specimen of this curious hybrid. "You will see," says Mr. CULVERWELL, "that the fruit resembles the Currant in the 'hanging,' but the leaves are like those of the Gooseberry." Mr. ARTHUR SUTTON, who has seen the bush, says that "the bush looks like a Gooseberry bush, with Currant-like leaves, and the fruits are like small Gooseberries in bunches of two, three, or four, on one stalk." The general character of the hybrid is sufficiently shown in the accompanying illustration (fig. 46). The artist, however, has omitted to show what is obvious enough in the specimens before us, the racemose character of the inflorescences, which are borne on spurs from the old wood as in the Gooseberry and which gave to the plant more of the general appearance of the Black Currant than is here shown, and he has likewise omitted the hairs by which the fruit was covered. We append some notes taken from the fresh specimens, and showing the differences in the shoots and foliage of the hybrid and of the Gooseberry and Currant:—

Gooseberry.—Rind of young wood, ash-grey, spiny; leaf-stalk slightly dilated at the base, with a few coarse hairs; blade without glands, cordate at the base, lobes widely spreading, disc 3-nerved, orbicular, 3-lobed, lobes nearly equal, crenate, narrowed at the base.

Black Currant.—Rind of young wood, pale fawn-coloured, smooth, without spines; leaf-stalk much dilated at the base, with a few coarse hairs and glands, blade with a few yellow glands on the under-surface, cordate at the base, 5-nerved, basal lobes rounded less widely divergent than in the Gooseberry; disc broadly ovate acute, 3-lobed, lobes ovate, slightly narrowed at the base, crenate, dentate, central lobe larger and wider than the side-lobes, narrowed at the base.

Hybrid.—Rind of young wood, fawn-coloured, becoming ultimately smoky-brown and cracked, without spines, leaf-stalk only slightly dilated at the base, and with a few hairs; blade destitute of glands, lighter in colour than in the Gooseberry, oblong-ovate or roundish, base scarcely cordate, or, in most cases, wedge-shaped; disc 3-lobed nearly to the centre, lobes broad at the base, crenate, dentate, central lobe scarcely narrowed at the base, slightly larger than the side-lobes.

The fruits of the hybrid were of the size of black Currants, but in colour like a red Gooseberry, beset with fine hairs, and destitute of seeds. The flavour partook of that of the Gooseberry mixed with that of the black Currant, an improvement on both, as it seemed to us. If Mr. CULVERWELL can succeed, as he seems likely to do, in growing Gooseberries in clusters of an improved flavour, and with no spines he will be a benefactor to his race.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Society will take place in the Drill Hall on Tuesday, September 6; and at 3 P.M. a paper on "Root Pruning" will be read by Mr. G. BUNYARD, which ought to evoke some discussion among gardeners.

GLADIOLI.—Amateur growers of these plants ought to be in force on the above occasion, as the Council have offered substantial prizes to the best-grown varieties, as have also Messrs. KELWAY for the best British-raised forms of *Gladiolus gandavensis*.

TORQUAY DISTRICT GARDENERS' ASSOCIATION.—We have to record the formation recently, in Torquay, of an association of gardeners and friends of horticulture, under the presidency of Mr. W. LAVERS, and with Mr. F. C. SMALL, 1, Knowsley Avenue Road, Torquay, as Hon. Secretary. The aim of the Association will be the mutual instruction of its members by meeting together at stated times to read original papers or essays on subjects of interest to the gardening profession, to discuss the same, and, in any similar way to promote the welfare and improvement of gardeners.

THE VEGETATION OF MARS.—There is a story to the effect that a local editor, much depressed by a continued absence of sensational news, begged his

reporter to "go and kill something." If the editors of the London dailies do not go quite so far as this, they certainly carry out the theory by starting, in the dull season, some more or less idiotic subject, on which a great many people, with more time on their hands than brains in their heads, avail themselves of saying something in print. These sort of discussions lead nowhere and end in nothing, partly because scarcely two individuals agree on any one point. This season, however, a matter of very great and universal interest has, for a wonder, been "taken up" by newspapers, the planet Mars, to wit. A good deal of nonsense has been written and printed, even on this abstruse topic, and many of these gross exaggerations have just been pointed out by Mr. W. E. PLUMMER, astronomer to the Mersey Docks. From this gentleman's letter to the press, we extract a paragraph relative to the colour of the leaves of the trees in Mars. He says:—"The dim veil which has been described as sometimes hiding restricted areas on Mars, is directly traceable to the presence of clouds in the Martial atmosphere, and, however plausible such a suggestion may seem, and which would very fairly explain the appearances which certain astronomers of repute have observed, it does not seem quite so warrantable to conjecture that these clouds are collected in order to scatter a beneficent moisture over a red vegetation. Many may refuse to receive this explanation of the red colour of the planet by supposing that it is due to red foliage; but there is much the same proof or absence of proof for this last suggestion as for those others which more readily commended themselves to our judgment. Perhaps the suggestion that the formations which have been compared to 'canals' are required for the purposes of commerce is not intended to be taken seriously, or that at a time when these 'canals' were thought to be double, it was the result of engineering processes undertaken on Mars to facilitate commercial enterprise, or to attract the attention of the denizens of this planet. But the joke, if joke it be, would not be warranted unless the way had been paved by loose assertion and fanciful speculations."

NARCISSUS GROWING AT SCILLY.—In the Islands of Scilly it is not a rare sight to see hundreds of thousands of beautiful Narcissi in bloom in the field in February and March months, and the Narcissi crop now takes precedence of the Potato. Many who grew Potatoes largely a few years ago, now grow none at all. One grower, Mr. FRANCIS WATTS, will have under cultivation this season 20 acres of Narcissi alone, comprising over one hundred varieties, at prices varying from 20s. to £30 or £40 per 1000.

A FLOWER SHOW IN BETHNAL GREEN.—A flower show in Bethnal Green recalls something of the Palace of Delight, to which Mr. WALTER BESANT refers in his *All Sorts and Conditions of Men*. Time was when Bethnal Green was a delightful village, with florists' gardens by the side of green lanes; but where RAWLINGS and others once grew Dahlias and other florists' flowers, there are lines of streets and a dense population, and all traces of country life have disappeared. Bethnal Green abounds with carpenters, cabinet-makers, and other handicraftsmen, and in 1891, a few of these having in their hearts a love for flowers, formed what is known as the East London Amateur Floricultural Society, the main object sought being the extension of the cultivation and love of flowers in East London. The operations of the Society are confined to within 3 miles of the Bethnal Green Museum; but the main of the plants and flowers are drawn from dwellings near to the Museum. The Society has now fifty members, who subscribe 2s. 6d. annually; and a summer exhibition takes place in August, and one for Chrysanthemums in November. The Oxford Mission in Bethnal Green allow the use of the Oxford Hall, which is just behind the Museum, for the exhibition, and the summer one took place on the 22nd ult. What astonished one was the quality of the plants largely grown in small and homely structures erected in meagre back

yards, with the walls of houses frowning upon them around. Groups of plants comprised Cannas, Plumbago capensis and its white variety, Fuchsias, zonal Pelargoniums, Begonias of the metallica type, Gloxinias, Ferns, succulents, Liliun auratum, and Liliun speciosum. Several groups were shown, the principal prize being the Bronze Medal of the Royal Horticultural Society, and there was a great desire to obtain it; the winner was Mr. ROBSON, a carpenter, living near to Cambridge Heath Station; the 2nd prize going to Mr. RANSOM, Stepney, a dock labourer, and the 2nd ran the 1st very close. Three remarkably good zonal Pelargoniums were shown by Mr. BASS, a Potato dealer, of Green Street, who has to cultivate his plants in a very dark back yard; and a collection of six plants was shown by the dock labourer, who put up a little greenhouse, and finds in it much pleasant recreation during the enforced hours of leisure. Coleus, Fuchsias, Cannas, and such like, were very good, regard being had to the conditions under which many of the plants are grown. Some well grown and flowered double Petunias were shown by Mr. RICHARDS, a cabinet-maker, who has the advantage of dwelling near the Victoria Park. A brace of capital Cucumbers was shown by Mr. BONE, a boot-maker, who has a small arrangement in glass, heated by means of a hot-water pipe from the kitchen boiler. A model garden, shown by a Mr. PYNE, the master of the National School, Peel Grove, Bethnal Green, some 4 feet or so square, was an admirable product, worked out by means of tiny plants of various kinds, all rooted, and some in flower. It received a prize of 8s., but was well worthy the Silver Medal of the Royal Horticultural Society. Some capital Tomatoes were shown, grown and ripened in the Seawardstone Road. Here was an exhibition full of human interest, and could it be multiplied a thousand times in the more crowded parts of London, the social benefits conferred would be of the greatest value. No recipient of a Medal of the Royal Horticultural Society ever before gained it with so much of joy and thankfulness as did the carpenter ROBSON, of Cambridge Heath, at Bethnal Green on the 22nd ult.

MELON-CUCUMBER.—Mr. BARRON sends us a portion of the bine of a Cucumber bearing, in addition to young fruits of a Cucumber, another of the size of a turkey's egg or rather larger, and of an ovoid shape, like a Melon. A similar case was figured in our columns in 1873, p. 1335. The facilities for cross-breeding in Cucurbits are so great, that we are not surprised to meet with great variations; but in this particular instance the change, for reasons to be presently assigned, is not likely to be due to any cross-breeding, but to some other unknown cause of variation. The young Cucumbers are studded with small prickly hairs (white spine), while the Melon-like fruit is destitute of such appendages. The outer rind, however, consequent on the rapid swelling of the tissues in the interior, is cracked and covered with chaffy scales of dead epiderm, almost as in a netted Melon. Under ordinary circumstances, Melons and Cucumbers are sufficiently distinct; nevertheless, they present so many points of similarity, that it would not be unreasonable to suppose that they might have descended from a common ancestor. In Numbers, xi., 5, we find in our translation the two mentioned separately:—"We remember the fish which we did eat in Egypt freely, the Cucumbers and the Melons, and the Leeks and the Onions and the Garlic;" but it would be very hazardous to suppose that the words used had the same precise signification then as now. That something of the Gourd kind was meant is all that we can assert definitely. HEHN, in his *Wanderings of Plants and Animals*, shows that the earlier references apply to Gourds of some kind rather than to Melons proper, evidences of which, according to him, are not forthcoming of earlier date than the later period of the Roman Empire. As specially bearing on the fruit sent us by Mr. BARRON, we quote the following passage from HEHN:—"PLINY relates that in Campania there arose accidentally a Cucumber of the

nature and golden colour of the Quince, which was then propagated by sowing the seeds; that the wonderful thing about these 'Melo-pepones,' besides their shape and odour, was, that as soon as they were ripe they detached themselves from the stalk. Here, for the first time, we hear of the odour of this fruit; its Greek name, from *melon*, Quince, originated in Grecian Campania; and afterwards, when the fruit became generally known, was popularly shortened into melo. No one will believe that the Melon was produced from the Cucumber in Campania by a freak of Nature." With reference to this latter statement, we own we see nothing unreasonable in the supposition that the Melon might have so originated—quite the contrary. "Freaks of Nature" are things the actuality of which we do not believe in. It is simply a phrase meaning that "we do not know" how a particular result has been attained. That there is anything like caprice or freak in the works of Nature is inconceivable by a naturalist. M. NAUDIN, whose practical researches into the natural history of these plants are of far more value than *à priori* speculations, declares, as the result of his experiments, that the Cucumber and the Melon belong to distinct species, and cannot be made to intercross. While the origin of the Melon is a matter of conjecture, that of the Cucumber is more distinctly traced to some Indian species like *C. Hardwickii*, a plant growing wild in Kumaon and Sikkim. M. COGNIAUX, the latest monographer of the Cucurbitaceæ, like NAUDIN, keeps the Melon (*Cucumis melo*) and the Cucumber (*Cucumis sativus*) as distinct species. In his analytical *Conspectus Specierum* (of course, avowedly only an artificial guide to the student), M. COGNIAUX divides the species into those which have a smooth or downy fruit, in which he classes *C. melo*, and those which have a spiny or tubercled fruit, under which latter he classes the Cucumber. Were the learned botanist to visit a show of vegetables nowadays, he would find far more smooth than spiny Cucumbers; so that, judging from that point alone, most of the Cucumbers of the present day would fall in the same category with the Melon!

THE LATE PROFESSOR JAMESON.—We have already called the attention of our readers to the sad case of Miss JAMESON, as detailed in the letter of the British Minister at Quito, forwarded to us from the Royal Gardens, Kew (see p. 218). An interesting account of the career of the late Professor, from the pen of the late Mr. ANDERSON HENRY, will be found in our pages, December 7, 1872. JAMESON, after graduating in Edinburgh, went to Baffin's Bay as a surgeon in a whaling vessel, and returning thence, proceeded, in 1820, to South America in an old smack, the management of which he had eventually to undertake himself from the incapacity of the skipper. Afterwards we hear of JAMESON at Lima and at Guayaquil, at which latter place he practised as a physician, but, contracting fever, he was advised to betake himself to Quito in 1826. In this city, 10,000 feet above the sea, he resided forty-four years, being appointed Professor of Botany and of Chemistry in the University, and in 1832 Assayer of the Mint. Had Mr. WHYMPER recollected the fact that JAMESON was a Professor of Chemistry as well as of Botany, he would not, in his *Travels amongst the Great Andes*, have indulged in the sarcasm as to the appropriateness of appointing a botanist as Master of the Mint. JAMESON'S *Synopsis Plantarum Equatorensium* was published in 1864 in an unpretending form, but one which rendered it available for the generality of botanists and of travellers, which is more than can be said for the costly and bulky publications sometimes issued under Government auspices. In 1872, Dr. JAMESON revisited his native land, and, returning to South America, again contracted fever at Guayaquil, from the effects of which he died in 1873. JAMESON was the correspondent of the HOOKERS, LINDLEY, indeed, most of the botanists of his time. Many plants were introduced by him through the late Mr. ANDERSON HENRY. To show how the labours of Dr. JAMESON are appre-

ciated by those best qualified to judge, we append a translation of a letter received from our distinguished colleague, M. Ed. ANDRÉ:—

"The last number of the *Gardeners' Chronicle*, p. 218, contains an urgent appeal from the British Minister at Quito to the active sympathy of all who knew Professor JAMESON, of Quito. One of his daughters, whom I had the pleasure of seeing at Quito, is at present reduced to the direst poverty. Few botanists and horticulturists [of the present generation] are aware of the services rendered to Botany by Professor JAMESON. Not content with having explored a large portion of the Equatorial Andes, and to have largely contributed to our knowledge of the Flora of those regions, he never ceased sending living plants from gardens and hothouses. If reference be made to the volumes of the *Botanical Magazine* from 1840 to 1860, the portraits of numbers of plants introduced by him will be found. His daughters have always led a most honourable life, and as fortune has not befriended them, I take it to be the duty of all those who are interested in the doings of the true friends of Botany to come to the assistance of Miss JAMESON. Allow me to be among the first to send you my modest offering, &c. Ed. André."

This letter of M. ANDRÉ is peculiarly grateful to Englishmen, not only as a mark of sympathy for the unfortunate, but as a token that the bonds of science are not confined within the limits of any particular nationality. We shall be pleased to transmit to the proper quarter the contributions of those who may be disposed to follow the generous example of the editor of the *Revue Horticole*.

THE WEATHER.—The recent rains which visited the southern parts of England must have been of inestimable benefit in refreshing the flagging vegetation in parks, orchards, and gardens. Timber trees were rapidly getting thin in foliage, and showing signs of autumn six weeks in advance of the usual time. One of our contemporaries ascribes this early defoliation to the airlessness of the town, by which he probably means stagnation of the atmosphere, which is surely a mistake, as this is usually a concomitant of dampness of the soil, and does not favour evaporation from the latter or from the leaves. The great dryness of the soil is due to the lessened rainfall of 1891 and 1892, and the incessant drainage of the soil caused by the excavations, often at a great depth, for sewers, railways, houses, &c. The soil round about these is not consolidated like the undisturbed subsoil, and doubtless it serves to drain off a great deal of the water over large areas, and this, too, in spite of the immense tract of clay which underlies London.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—This Society will hold its meeting next year at Chester, on Monday, June 19, and four following days. It has been decided by the council that prizes shall be awarded for the following exhibits:—Jams, and preserved fruits and vegetables (all of 1892 growth): Collection of whole fruit jams, collection of bottled fruits, collection of preserved fruits for dessert purposes, collection of preserved Peas, French Beans, Tomatos, and Mushrooms, for cooking purposes; collection of dried or evaporated fruits and vegetables for cooking purposes. Cider and Perry (to be made from fruit grown in 1892. Open to both makers and growers): Cask of not less than eighteen, and not more than thirty, gallons of cider made in the autumn of 1892; twelve bottles of cider made in the autumn of 1892, twelve bottles of cider made in any year before 1892, and twelve bottles of perry. The prizes range from £3 to £1 in the case of fruits, and from £5 to £1 for cider and perry.

EVAPORATED FRUIT.—At a recent flower show at Ledbury, Mr. RICARDO, of Bromesborough Place, Ledbury, exhibited a case of evaporated fruits and vegetables, grown and prepared by his gardener, Mr. W. TROTTER. The exhibit comprised samples of Apples, Pears, Plums, Apricots, Cherries, Damsons, Peaches, &c., as well as French Beans, Green Peas, and other vegetables of last year's growth. Their flavour, when cooked, it was stated, was in every case equal to that of the fruits and vegetables in their original state. The drying of the fruits and vegetables was done by one of PH. MAYFAIR & Co.'s "American" Evaporators. Mr. TROTTER informs us that he will be happy to supply any information that may be desired by such of our readers who may be interested in this useful invention.

"THE GENUS MASDEVALLIA."—The third part of this useful illustrated work, comprising figures of M. Armini, Carderi, caudata, coccinea, coriacea, Davisii, Estradae, polysticta, triangularis, and Wageneriana, has just been issued. The work is founded on the collections of the Marquess of Lothian at Newbattle, and the plates and descriptions are executed with care and fidelity by Miss WOOLWARD, with notes by Consul LEHMANN. We shall probably advert more at length to this important monograph; in the meantime, we may point out the inconvenience that arises from the circumstance that neither the plates nor the sheets of text are numbered.

OXFORD UNIVERSITY EXTENSION.—The course of study of botany, which has been attended by a considerable number of County Council scholars, has just ended. Under the direction of Mr. CLARIDGE DEUCE, M.A., the students have attended twenty-eight lectures, each followed by a botanical excursion in the vicinity of Oxford. The neighbourhood of the city has been visited within a radius of some miles by the students under guidance. Near the remains of Godstowe Nunnery, the conductor found in a ditch a specimen of the plant *Nitella mucronata*, which has only been discovered three times in England, viz., about 1720 by Professor DILLENIUS at Isleworth, next by WILLIAM BORRER, in Sussex, about 1830; and, thirdly, near Bedford, in 1884. The students have studied the natural orders and been shown how to collect, to dry, and to arrange a herbarium. In the excursions, about 250 plants were named and described. The attendance was remarkably uniform throughout the course. In view of the fact that a large number of scholars sent up by county councils are attending the lectures, some prominence is being given to topics of technical interest. For example, a lecture was given on "Bees and Beekeeping," by Mr. W. J. ANSTEE, of the Oxfordshire Beekeepers' Association, and a lecture will also be given on "Farriery" before the meeting ends.

MISSOURI BOTANICAL GARDEN.—The third annual report of this garden is now published. It was, we may recall, founded by the munificence of an Englishman naturalised in the United States. Mr. HENRY SHAW not only left this fine garden for the public use, together with funds adequate for its maintenance as a scientific institution, but, like a true Briton, he also provided that once in each year a banquet should be held, to which representative horticulturists and botanists shall be invited, and another banquet expressly for gardeners. The report before us contains an account of the proceedings at these festivities, which will, doubtless, in course of time, evolve into something beyond a meeting for the promotion of good fellowship, though that in itself is no mean object. An announcement at the banquet, made by the Hon. J. W. NOBLE, Secretary of the Interior, will be read with pleasure wherever a love and reverence for trees exist. "I have had," said the Secretary, "an opportunity given me to say that the *Sequoia gigantea* shall no longer be ravaged by the herder, nor consumed by the fire of the man that wants to make a camp, regardless of those wonders of the world that future generations ought to be allowed to admire." The same gentleman has been instrumental in adding to the famous Yellowstone Park 20,000 square miles (they do things on a grand scale in the States), "that the trees there might preserve the sources of our rivers and fertilise our plains. It is my purpose, if I can, to have this ground so guarded by force that the grand flora of the United States . . . may once more bloom, and not be made the herbage for the sheep from Mexico." Professor LAWSON, of Nova Scotia, alluded to the School of Horticulture established in the Garden, and was followed by Professor RILEY, both of whom expressed their sense of the value of the services of Professor TRELEASE, the Director. Professor COULTER combated the general notion that a botanic garden is a sort of place for the propagation of nosegays. The festal record is followed by a revision of the American species of *Rumex* (Dock),

which is certainly rather a leap and a bound. We may incidentally call attention to the great waste at present committed in not turning to account the seeds of these plants. No one who sees the profusion of seed, and notes its richness in starch, but will regret that this should be reserved for the use of the sparrows only. Professor RILEY follows with a summary of his observations on the fertilisation of *Yucca* by the *Yucca* moth, *Pronuba yuccasella*, and this interesting paper has appended to it some notes on the botany of the genus, by Professor TRELEASE, including a list of the species, illustrated by numerous figures scattered through the volume.

HOW DO FLOWERS ATTRACT INSECTS?—In considering the effect which the colour and odour of flowers produce in the sense-organs of insects, we are too apt to assume that the things which please human beings please also the lower types of life. It may be doubted whether too much has not been taken for granted in the prevalent theory of the part played by the bright colour and sweet scent of flowers in attracting insects for the purpose of pollination. Can we not at once call to mind instances of odours and flavours which though absolutely repugnant to the senses of human beings, are apparently enjoyed by animals. And why is this? Perhaps, because of the fact that the visual and olfactory organs and perceptions of many animals are very different from our own. Prof. T. CARNUEL, in a recent series of papers in the *Bot. Centralblatt* (vide, xlix., 1892, pp. 232, 263, 299, and 360), discusses a number of well-authenticated instances in which the effects of odours and flavours upon animals are entirely different to those of the same odours and flavours upon the sense-organs of human beings. He also calls attention to the facets on the eyes of insects and to their ocelli, and especially dwells upon their extreme sensitiveness to the ultra-violet rays of the solar spectrum. In these respects insects are widely different to human beings, and it is probable that we have yet to discover the function of flowers in attracting insects.

ABSORPTION OF WATER BY LEAVES.—Most people are under the impression that plants can absorb a good deal of the moisture necessary to their existence through the pores of their leaves, but this is, in the main, an error. It is, generally speaking, only the "rootless" Epiphytes and certain xerophilous plants that can take in water in this way. Sufficient observations have not yet been made upon tropical plants to enable a generalisation to be safely made, but Herr A. BURGENSTEIN has come to the conclusion that, although the absorption of moisture may take place to a certain extent through the epidermal cells, the stomates, and the hairs, it is of no physiological importance, at least as regards the flora of Europe. For details, vide *Bot. Centralblatt*, xlviii., p. 186.

STONE EDGINGS.—In Canon SWAYNE's garden at Salisbury, some of the beds of Alpines are edged with blocks of stone placed not as usual parallel with the margin of the bed, but more or less at right angles to it. Thus between stone and stone, a little pocket is formed, in which the plants luxuriate according to their kind. The formality of straight lines is thus delightfully obviated, whilst the careful selection of suitable plants which is so marked a feature of this garden is a safeguard against the over-vigorous growth and encroachments of fast-growing plants.

PUBLICATIONS RECEIVED.—*Proceedings of the Agri-Horticultural Society of Madras.*—*Proceedings of the Agricultural and Horticultural Society of India, April–June.*—*Report on the Hills of Louisiana.*—*Bulletin of the Agricultural Station, Louisiana State University.*—*Agricultural Gazette of New South Wales.*—*Annales Agronomiques.*—*The Genus Masdevallia*, plates and descriptions by Miss F. H. WOOLWARD. Part III. R. H. PORTER, 18, Princes Street, Cavendish Square.—*Möller's Deutsche Gärtner Zeitung.*—*Report of the Department of Agriculture, Cape of Good Hope.*—*British Mosses*, by the Right Hon. Sir EDWARD FRY (WETTERBY & Co.).

HOME CORRESPONDENCE.

CARNATIONS AS EXHIBITION FLOWERS.—In a review of the *Carnation Manual* which appeared recently in the *Gardeners' Chronicle*, the exhibitors of this flower were exhorted to attempt some other method of displaying the flowers at Carnation shows than that generally adopted. I think it will take years to induce Carnation exhibitors to depart from the old way, and I am not at all certain that there is any pressing necessity why they should do so, because the cultivator for exhibition looks upon the flower from an altogether different standpoint to that of the writer of the review; and while others are at liberty to adopt what methods they please, the florist may be left to take his particular way to reach the end he has in view. That the present mode of exhibiting the blooms does not display them to the best advantage as mere decorative agents no one will deny, and therefore, any attempts in this direction should be encouraged, and it can be done without interfering in any way with the methods of the strict florists, who go to a considerable expense to obtain stands and boxes for the purpose of exhibiting his flowers. At an exhibition held recently at Kingswood, near Bristol, there was a class for twelve varieties of Carnations and Picotees, three blooms of each, and a stand from Mr. F. Hooper of Bath, which gained the 1st prize, appeared to suggest a way by which the decorative value of the flowers can be enhanced. Mr. Hooper's flowers were remarkably good for the season, and they were arranged in the form of a triangle, two blooms forming the base, and one the apex. Mr. Hooper arranged his flowers with excellent effect; they were exhibited on a box, the stems of each bunch in a tube of water, and most attractive they were. They were not backed by their foliage, and I do not think the flowers lost anything in the way of effectiveness through its absence. I think the committee of the National Carnation and Picotee Society, acting upon the suggestions thrown out by the writer of the review, might attempt such a class as at Kingswood another season, and with advantage. They have tried the experiment of plants in pots as decorative agents, and they can now fairly make an attempt with cut blooms. *R. D.*

TOMATOS.—It is one of the anomalies incidental to Tomatos that whilst market dealers in these fruits will not have large ones at any price, judges at exhibitions, when Tomatos are exhibited for prizes, will show no respect for other than large fruits. Presumably, judges will say, "We cannot concern ourselves with what may be the needs or prejudices of the market trade. If we find allied to size in Tomatos great beauty as well as fine form and colour, we must give to such features the highest awards," and to such reasoning there can be barely any rejoinder. Still, it may be assumed that just as Melons are judged, not for their size or appearance (than which nothing can be more misleading), but for their flavour, why not Tomatos. To that there is this obvious reply, that whilst flavour in Melons admits of the widest differences, a few being really good and pleasant eating, the many being comparatively nauseous or tasteless, in Tomatos flavour is comparatively indeterminate, because it is a quality that is far from being prominent, and varying only in a very indefinite degree. Some Tomatos seem to be rather brighter and more piquant than others, much, however, depending upon the period of maturity arrived at by the fruit, also as to how long gathered. A fruit picked fresh and eaten at once is often much better flavoured than is one that has been gathered several hours. Also fruits that are just ripe are usually better than are fruits left to become more highly coloured, but still rather over ripe. Then, I am sure, it is a fact that the best of what flavour Tomatos have is not found in the largest fruits. The best Tomato joke perpetrated was that of the old gardener of Burghley, who, in sending up the biggest fruits ever seen to the Fruit Committee not long since, added a flask of hock to be employed in helping the members of the committee to discover the inherent flavour lying deeply hidden in these gigantic samples. Possibly, it might have been thought that the alcohol would rather assist to destroy what natural flavour the fruits possessed, but it was difficult to kill what was already dead. If the smaller kinds of Tomatos are ever to find favour on exhibition tables, it will only be by the insertion of classes for clusters, say, six of any one or more varieties; and that some such classes should be

promoted, seems obvious, in face of the fact that fruits which weigh from four to five in the lb. are far more acceptable in the market than are the bigger ones of two to the 1 lb. or three to 2 lb. The beautiful golden or orange-coloured varieties, some of which are apparently of the best flavour, are shut out from honours entirely when they have to compete on equal terms with red ones, whilst separate classes for them, or classes which made a portion of the dishes to be yellow compulsorily, would be of great use. The day may yet be some way off when we shall see Tomatos accepted everywhere as dessert fruits, but were such the case dishes of the yellow, as well as red, would very much enhance the beauty and variety of a dessert course. We have in such varieties as Ham Green Favourite, Sutton's Al, Challenger, Conference, Cluster, Chiswick Red, and others, a red colour that comes into this category, and there are some yellow ones, especially the beautiful Golden Nugget, which was certificated at Chiswick in 1890, a fine bunch or cluster variety, so that it would be easy to make up collections of several forms for exhibition, or a succession of sorts if desired to give variety to the dessert course. *A. D.*

PAULOWNIA IMPERIALIS.—Though the Paulownia is a deciduous tree, with the habit and general appearance of *Catalpa syriaca*, it is, nevertheless, very distinct, and belongs to a different natural order Scrophularinæ. Its flowers, borne in large bunches, in form, size, and colour, resemble those of the Foxglove (*Digitalis purpurea*)—individually, they are extremely beautiful, and, indeed, quite unique. Introduced from the southern provinces of Japan by Siebold in the year 1837, he named it after the hereditary Princess of the Netherlands. In Japan, the tree grows to heights of 30 or 40 feet. It is recorded that a plant planted at the above date in the Paris Jardin des Plantes was, after three years' growth, or in 1840, nearly 12 feet high. I have looked through a modern work on French gardens, but find no reference to growing examples. [Some of the Paris streets are lined with it. *Ed.*] I am able, from personal knowledge, to say, the Paulownia will grow to goodly proportions even in this country, between the occasionally very severe winters we experience. A tree near my present abode, having attained to a height of 15 feet with a considerable bole, was only destroyed by the excessive severities of a few winters ago. As young trees are obtainable at from 1s. 6d. to 5s. each, further trials should be made. Besides, it is not difficult to twist haybands around their straight, smooth boles and branches on the approach of severe frosts. *William Earley.*

LILIUM AURATUM.—The plant in question of this grand Lily is no doubt a good specimen, and better than is generally seen; but what would "W. D." say if he had seen the specimen that has just done flowering in these gardens? It is in a 28-inch pot, and threw about forty shoots, and carried 218 blooms, the majority of them being larger than any I have seen before. It was not potted this year, but had a strong top-dressing of peat, sand, and cow-manure, and when it was in full growth it was fed with manure-water every time it was watered. We intend putting it in a large tub next season. *H. Kempshall, Patshull Gardens, Wolverhampton.*

ONIONS.—I saw the other day in the fine kitchen garden at Hackwood Park, and a splendidly-kept and cropped garden, too, at once one of the finest ordinarily-grown crops of Onions, and the finest samples of Onions, I think, I have seen anywhere. The large samples were of Ailsa Craig, Anglo-Spanish, Wroxton, and Lord Keeper, but the first-named were by far the finest. These were grown on a south border, where plants, raised from seed sown under glass in January, and dibbled out early in April, in rows 18 inches apart, had produced bulbs weighing, of the best, from 2 to 2½ lb., and very handsome also. These will have to take their chance, however, with other fine samples at the Banbury Onion competition next month. Of course, they are useful chiefly for exhibition, but are also very valuable for seed stocks, as these picked bulbs develop the finest strains. The ordinary stocks of Onions were of Main Crop, Wroxton, Sutton's Al, Brown Globe, and Anglo-Spanish. The bed comprised twenty-eight rows each, 38 yards long, a total of 1056 yards, or nearly three-fifths of a mile. The rows were 15 inches apart, and the bulbs, all of which when pulled would be of the best average size, were standing in the rows as close as possible. When so much is heard of maggot and mildew, such a bed as this

seemed to be a perfect wonder. The seed was sown on March 21, a good time, if the weather and soil be both in good form. The stems had just been laid all one way with the greatest precision; allowing three bulbs to the foot run, the numbers should be close upon 10,000, and Mr. Bowerman expects to find from fifty-six to sixty bushels, at the very least, after the bulbs have been cleaned. The Onion crop is always made to follow on Autumn Cabbages, or some similar green crop; then the soil is trenched and well manured. It is naturally stiff, and is to some extent lightened by a free use of leaf soil, which seems to form the staple manure for the Potato crops. *A.*

HORSE PLUM.—One of your correspondents asks about the Horse Plum; the kind known in this neighbourhood as such is a red oval fruit—it is, I should say, an old English kind. If he wishes it, I will send him a specimen. *J. Marshall Sturge.*

UPRIGHT v. SPREADING VARIETIES OF APPLES.—This may not be perhaps the most seasonable period at which to discuss the varieties of Apples to plant next autumn, but it is undoubtedly the best time to take note of the various styles of growth which different kinds adopt with a view to the future arrangement of the trees and kinds. In looking down the long rows of bush trees in a market garden noted for its good Apple culture, where all the best and newest kinds are tested side by side, I could not but notice the manner in which many grew, and what object-lessons they provided. For instance, Worcester Pearmain and Lady Sudeley grow almost erect in habit, occupying but little space as compared to Lane's Prince Albert or Warner's King, which have a spreading habit. Just for a moment consider the space required to plant a number of the latter as compared to that of the former sorts, and note the advantage there must be in planting the two sorts side by side, which are so diverse in character of growth, resulting in a decided saving of space, and the advantage of the trees individually. One does not rob the other of light and space. The subject which I have here touched upon is well worthy of considerable attention, and at no time can the habit of different varieties be so well studied as when they are in full vigour of foliage, and carrying a full crop of fruit, which tends to spread the branches out to their fullest extent. *E. M.*

IN PRAISE OF THE FAN.—Some few years ago plant-training having gone mad, was very generally condemned by good judges in matters of taste, with the result that endeavours were made by plant cultivators to do without trellises as much as possible; but, finding that some species of plants could not be made presentable without something to which the shoots, young and old, could be secured, the balloon form of trellis became the fashion. Now, this seems to be a pity, as, by its use for all kinds of plants, only a part, say one-half, of any plant can be seen unless tilted up toward the spectator, as at exhibitions, when a bird's-eye view is obtained of the part where most of the bloom is to be found. On a flat or a stepped stage, only the side is visible. Would not most climbers of the stove and greenhouse look to greater advantage if trained on a trellis of a fan-shape? Each flowering-shoot would then be seen at full-length, and the flowers would be seen all on one side. It may be said that it is a dreadfully artificial style of training. I reply, so is the balloon, and if you must have a trellis, there is no escape from artificiality. Peas and Beans are supported by rough dead sticks, but no one condemns the practice of sticking, unless it be the urban cultivators, who are far from plantations, and find their Pea-sticks expensive. The fan favours extension, and it, therefore, would admirably suit the Allamanda, Bougainvillea, Stephanotis, Lapageria, &c.; and if the ribs are neat, and painted dark green in colour, they are nearly invisible, even where they are not clothed with shoots and leaves; and it is, moreover, certain that the deadly uniformity of exhibition plants would disappear if we were to introduce this form of trellis in place of the balloon. Moreover, the practice of fastening the growths of some of these plants to strings fixed close under the roof would no longer be needed, as a fan-trained plant could be so placed that it would enjoy the sun's beneficent rays to the utmost. *A. Fanner.*

ABNORMAL PEACHES AND NECTARINES.—We have to-day gathered five fine Peaches and two small Nectarines from a pot tree of the Violette Hâtive Peach which stood in rather a shaded position. We

are aware that this is not unusual, but the remarkable part to us is, first, that the Nectarines, though growing in the best position at the top of the tree, were very small, weighing only 2 oz., while the Peaches were 5 oz. each. The latter had the true rich sweet flavour inherent to the variety, while the Nectarines were of Elruge flavour, and a little bitter, and only differed from the type in being redder at the stone, and the colour had run more to the skin than is usual in Nectarines. Although we have grown these subjects for years, a similar case has not been observed. *George Bunyard & Co., August 26.*

VANDA CÆRULEA.—*Apropos* of the remarks on this species at p. 247, it will interest Orchid-growers generally, and especially those who doubt the possibility of growing and flowering *Vanda cœrulea* on an improving scale, to know that the two large specimens in Lord Rothschild's collection at Tring Park, Tring, are kept in fine condition by Mr. Hill. There are twenty-five strong spikes of bloom on the one, and twenty-two on the other plant. A quantity of smaller plants are also sending up their flower-spikes, even the smallest pieces showing for bloom. The large violet-netted Tring Park variety, which is the most beautiful dark form of *V. cœrulea* known, will be in bloom again shortly. *J. O'B.*

DEW, AND ITS ACTION ON PLANTS.—The assertions of Professor Wollny are not likely to derive much support from arguments such as are contained in the letter of your correspondent "T. H." With reference to Professor Henslow's experiments (an interesting account of which appeared in your issue of June 25 last), "T. H." contends that "as there was a heavy dew on at the time, it is very probable that the moisture was absorbed by the stalk of the leaf, and not through the cuticularised surfaces of many of the leaves." The value of this "contention" is, however, reduced to *nil*, by the statements contained in the last two clauses of the same sentence: namely, that (1) "it is a well-known fact, that these surfaces are well-nigh impervious to water;" and (2) "the amount of moisture that would be required to enable any of the leaves (in the list he supplies) to regain their normal condition, would be very small indeed." It is perfectly obvious that if the amount of moisture required be "very small indeed," it is quite possible that such necessary amount may be absorbed by surfaces which are only "well-nigh" impervious—for the term "well-nigh impervious" implies some degree, however small, of perviousness. With all deference, I should like to be allowed to paraphrase "T. H.'s" concluding sentence thus:—"It is scarcely necessary to say, that when contentions of this kind are engaged in, the utmost care is necessary; for if some of the primary rules of logic are overridden and ignored, we cannot expect to arrive at true and correct results." In view of the importance of the subject to gardeners, it is much to be regretted that Professor Wollny or his disciple, Mr. Matthewman, has not seen fit to favour the readers of this journal with some account of the Professor's experiments, and a summary of the deductions drawn therefrom, set forth in logical sequence; for with them lies the onus of proof. I pointed out in a previous communication, and now beg to repeat that, in the absence of serious argument, the refutation of the new-fangled doctrine is out of the question, and, I might add, quite unnecessary. *C. W. Herbert Greaves.*

—On page 219, "T. H." quotes from a work on Physics, by a Mr. J. Aitken, respecting dew, thus:—"That the greater part of true dew is formed from the vapour that rises from the heated ground, and has been trapped by herbage and other cold objects." If so, one would naturally expect to see dew on the under-part of leaves when not present on the upper surface, and it certainly should be more copious, but such is not the case. I have no work on Physics to quote from to refute Mr. Aitken, nor to support what I said in a previous letter, or what I may say in this. Mr. Aitken in the quotation says that, "the drops seen on grass and leaves are not dew at all, but moisture exuded from the living plant." Last Saturday morning was one of those unusually dewy mornings, with the thermometer nearly down to freezing, frost having actually been formed on the grass in low situations. On such mornings I have noticed dewdrops every inch or two on the lower side of some hundreds of yards of stretched wire the thickness of an ordinary lead-pencil, the remaining portion of the wire being covered with a film of mois-

ture interspersed with particles of various sizes, like so many tears, exactly like those on the Cauliflower, Cabbage, and Seakale leaves near by. Where the leaves of these plants were moderately flat, globules of water, the size of a sixpence or a shilling, lay in their crinkled recesses, and those of the Seakale were notably so, but not so much film and drops on their surface. The presence of the film and drops on the strained wire I attribute to the same natural law as produced those on the plant-growth, and to convince me otherwise, I must have more evidence than a mere statement of Mr. J. Aitken, or the solitary experiment of Prof. Wollny in that distant puddle of his. I further observe that Mr. Aitken states that "dewdrops are only found at the extremities of leaf veins," &c. My observations are, that they are not confined to the leaf veins, but are indiscriminately distributed over the intervening spaces as well. If, however, the accuracy of my observations is questioned on this point, there are the drops on the strained wires to be explained. *W. P. Roberts, Cuerden Hall, Preston.*

LETTUCE-GROWING BY ELECTRICITY.—Without further tests on this side of the water of the alleged value of the electric light as an aid to vegetable growth in the winter months, I must regard the statements copied from an American journal by the *Gardeners' Chronicle* as being rather hypothetical. There are, besides, the doubtful advantage of making plants grow when they should be resting; and a surely somewhat erroneous statement that the plant "headed-up better under the light," and that the "quality is superior." Now, as the area of the house specially mentioned is given at one-third of an acre, i.e., 1493½ square yards, or 1,934,928 square inches, and the number of plants 24,000; a simple-division sum will show that each Lettuce plant stood on a space of 8½ square inches—not, be it remembered, a space measuring on each side 8½ inches, which is something very different. As all practical men know, this small space of 8½ inches is all too small for even a moderate-sized Lettuce, say of the Tom Thumb or All the Year Round, or any varieties of small Lettuces that we are acquainted with in this country, leaving the larger-growing Cos varieties out of the question, to grow and form a head. Indeed, I should greatly doubt the possibility of growing Lettuces to form a head—even when the smallest-growing varieties are chosen—on less space than a square of 6 inches, i.e., 36 square inches, or four times the space given in the quotation from the American journal. Planting Lettuces closer than this would mean excessive etiolation from lack of light, and great loss of plants from damping off, which would be all the greater owing to the thinness of the leaves. The removal of the fertile top-soil also seems to me to be an error in practice, unless some other equally fertile top-spit be substituted for it. And why fear the germs of fungi, as necessitating its removal, if properly cultivated? Moreover, it must be a particularly skilful ploughman, too, who would turn his team on the "headland" of such an englassed field, without smashing the glass walls of the house, or playing havoc in other ways. The fact is, the whole thing smacks rather of the desk than the practical cultivator, and as I said at first, it needs further test and more "light." *A Non-believer.*

BEANS AND CABBAGES AT CHISWICK.—A large selection of Runner Beans and Cabbages is grown for trial at Chiswick this season. On a recent visit of inspection it was seen that the Runner Beans included, white-flowered, several varieties; scarlet-flowered, numerous; and French Runner and Butter Beans, even more abundant. Of the first-named, or white-flowered forms, the best were Jubilee (Carter), a very fine greenish-podded variety, and free; and Giant White, very like the former. Both these obtained three marks. The very large broad-podded Czar obtained two marks. Then, of scarlet-flowered forms, Hill's Prize and Sutton's Prize-winner, both very handsome forms, or selections of Ne Plus Ultra, obtained three marks. So also did Veitch's Giant, apparently a scarlet-flowered form of Jubilee. The stocks of Ne Plus Ultra, really not good ones; and Giant Titan and Invincible, a fine long-podded sort, but having on many of the pods a reddish colour, received two marks. The names given to some of these Beans, Gigantic, Elephant, Mammoth, Giant Titan, &c., evidence the undue dimensions of the pods of some of the more recent selections. The French climbing types were very varied, and included some having blue and violet coloured pods that are very handsome, and

would look very effective if employed solely for the covering of arches or trellises. The best of the section was Sutton's Tender and True, really a climbing Canadian Wonder Bean, very handsome and productive; this had three marks; so also had Fillbasket, a very fine tender fruiting form of the old Case-knife, but much better. The best of the Butter Beans were Hungarian Butter (Vilmorin), delicious soft, marrowy flesh, and delightful if cooked for children; Mont d'Or, so well known as one of the best; and Flageolet Wax, a very free, delicious Bean, of a rich golden hue; a fourth variety, Emperor Frederick, secured two marks. Of the entire number, a quantity of the most promising were selected and part cooked whole. The above awards were given after these had been tasted. The white Cabbages grown included some thirty varieties, and it was agreed that the marks granted last year be confirmed, as none were new. Amongst the best forms were L'Etampes, Early York, Improved Nonpareil, Oxheart, or as known in the Midlands, Spratborough, sent as Little Pixie; All-heart, very fine and good; Wheeler's Imperial, Atkins' Matchless, Sutton's Earliest, and Barr's Best of All were all excellent stocks. Of Savoy Cabbages, Crock's Favourite, Earliest Dwarf Vienne, Earliest of All, Early Ulm, and Dwarf Green-curl were the best of the early section. These, however, would all be better sown later, so as to heart-in during October rather than in August. The Cabbage trial is an excellent one, and, having the advantage of being practically public, offers capital opportunity for gaining information respecting Brassicas.

SOCIETIES.

THE INTERNATIONAL FRUIT SHOW.

AUGUST 26, 27.—The much-talked of fruit show at Earl's Court has come and gone, leaving the impression that it was one of the best, taking things all round, that we have witnessed. If one may make comparisons, we should say that it was not quite so good in Grapes as the Caledonian Society's show of last year in the Waverley Market, Edinburgh; but that in Pine-apples, Apples, Plums, Pears, Figs, Peaches, and Nectarines, and especially in the home-grown and foreign market produce, it exceeded that capital fruit show of the North.

It was a remarkable fact that California was able to send us Bartlett (Williams' Bon Chrétien) Pears as good in flavour and higher in colour than our produce of the same variety, in spite of having been fourteen days in transit. These fruits, and any others which they may send us, cannot be sold at higher prices than our own, and it will be a curious upshot of our endeavours to increase our fruit supplies, if the foreigner 10,000 miles away should be enabled to send fruit to our markets at any profit to himself. It is a race in which he, with dear labour, cheap land and carriage, but with much time lost in transit, has to compete with the home grower, who, it seems to us, is handicapped by dear land, uncertainty of tenure, dear labour, and high freight charges by land. If three of these factors—tenure, rent, and freight charges—which are all within our means to remedy were, as regards the first, removed and the others lightened, we could compete on more equal terms.

With regard to the quality of the hardy fruit shown, it was remarked that the samples were, although late, pretty fairly developed. As regards Apples and Pears, these have six weeks longer in which to reach full size. Peaches, Nectarines, Plums, and Figs, from out-of-door trees were good in flavour, size, and colour, and remarkably free from all forms of fungus growths. Some of the Peaches, and these of large size usually, had the shrivelled, burned appearance at the apex, which some growers attribute to want of water at the root as the fruits approach ripeness. The heavy bloom on Plums and on Grapes was a subject of general remark. As regards these last-named fruits, we have seen much heavier bunches of nearly all varieties shown, and the colour and finish of Muscat of Alexandria was in no case up to the standard—a fact, doubtless due in the main to the early date at which the show was held—in another month the much-admired golden tint will be more generally found on this variety.

Collections of Fruits.—For collections of fruit of not less than twenty dishes, which should include

four varieties of Grapes, two Pine-apples, two Melons, two dishes of Peaches, two of Nectarines, and two of Plums, the remainder to be distinct—1st, Mr. McIndoe, gr. to Sir J. W. Pease, Bart., Hutton Hall, Guisborough, with an exceedingly fine lot. The following were the kinds and varieties shown in it: Charlotte Rothschild and Queen Pine-apples, Negro large and brown Turkey Figs, Golden Eagle and Violette Hative Peaches, Laxton's Noble Strawberry, Elrue and Humboldt's Nectarines, Pears Bon Chrétien and Souvenir du Congrès, Bigarreau and late Duke Cherries, white and red Dutch Currants, Best of All and Exquisite Melons, Magnum Bonum and Kirke's Plums, Duchess of Gloucester and another Apple, Exquisite Orange, Imperial Lemon, Whinham's Industry Gooseberry, and fruits of Passiflora edulis. The Grapes consisted of Golden Champion, large sprawling bunches; Gros Maroc, nice in every way, as were the black Hamburgs; and Duke of Buccleugh, good compact bunches. So far as we were able to judge, these fruits were in the best condition for consumption. The 2nd prize fell to Mr. Goodacre, gr. to Lord Harrington, Elvaston Castle, Derby. Particularly good examples were the dishes of Royal George and Barrington Peaches, Moorpark Apricot, Victoria Nectarine, Morello Cherries, Muscat and Barbarossa Grapes, Queen and Smooth Cayenne Pines, and Vicomtesse H. du Thury Strawberries. 3rd, Mr. H. Ward, gr. to Earl Radnor, Longford Castle, Wilts, who had very nice Gros Maroc, Buckland Sweetwater, and Madresfield Court Grapes, Brunswick Figs, Sea Eagle and Walburton Admirable Peaches, Pine-apple Nectarine, and Morello Cherries. Only three competitors entered in this contest.

For twelve dishes, distinct.—1st, Mr. R. Parker, gr. to J. Corbett, Esq., with Grapes Muscat of Alexandria, Alnwick Seedling, very fine examples; Princess of Wales Peach, Elrue Nectarine, Apricot Large Early, two Melons, smooth-leaved Cayenne Pine, Morello Cherries, and Kirks' Plum; 2nd, Mr. G. Reynolds, gr. to Messrs. Rothschild, Gunnersbury Park, Acton, with very fine La Grosse Sucrée Strawberry, Gros Maroc, Muscat of Alexandria, and Golden Esperion Grapes, &c.; 3rd, Mr. T. Coomber, gr. at The Hendre, Monmouth, whose smooth-leaved Cayenne Pine, Gros Maroc Grapes, and Bellegarde Peach were very good examples.

For the collection of eight dishes, Pine excluded, 1st, Mr. McIndoe, with very fine Duke of Buccleugh and Black Hamburg Grapes, Golden Eagle Peach, and Humboldt Nectarine, &c.; 2nd, Mr. J. Dumble, gr. to Sir C. Phillips, Bart., Haverfordwest, his best dishes being Elrue Nectarine, Black Alicante and Muscat Grapes, and Sea Eagle Peach; 3rd, Mr. J. Dawes, gr. to M. Biddulph, Esq., M.P., Ledbury, who had fine Barrington Peaches, La Favourite Melon, Bigarreau Napoleon Cherries, very fine Roman Apricot, Gros Maroc Grapes, and extra large Humboldt Nectarines; 4th, Mr. A. Ocock, gr. to Mrs. McIntosh, Romford.

Collection of Grapes.—Ten varieties, two bunches of each.—1st, Mr. McIndoe, Guisborough; these consisted of Lady Downes, Golden Champion, Gros Maroc, Gros Guillaume, Duke of Buccleugh and Black Duke (a very promising seedling variety out of Gros Guillaume), by Duke of Buccleugh, amongst his best examples; besides the above were Alicante, Black Hamburg, Trebbiano, and Gros Colmar. 2nd, Mr. G. Reynolds, Gunnersbury Park, with large well-coloured Muscat of Alexandria, Alnwick Seedling, Gros Maroc, very fine and large; a seedling variety from Muscat of Alexandria, and Black Hamburg, with a large globular white berry. Mr. Goodacre was 3rd, and Mr. H. W. Ward the 4th.

In the collection of five varieties of Grapes, Mr. W. Allan, gr. to Lord Suffield, Gunton Park, was 1st; Mr. Elphinstone, gr. to E. M. Mundy, Esq., Shipley Hall, 2nd; Mr. J. Bury, gr. to C. Bayer, Esq., Forest Hill, being 3rd.

In the class for Black Hamburg Grapes, three bunches, Mr. J. Gibson, gr. to Early Cowley, Esq., Chippenham, was 1st; Mr. G. Reynolds, 2nd, with a very symmetrical lot of bunches, perfect in colour; Mr. J. McNaughten, gr. to Earl Tankerville, Kingston-on-Thames, 3rd.

For the best three bunches of Muscat of Alexandria, 1st, Mr. G. Reynolds—large bunches of an even size, ripe, and high of colour; 2nd, Mr. J. Dumble, with larger bunches, but smaller berries; 3rd, Mr. W. Elphinstone—good, well-coloured fruit.

The prize for the best Gros Colmar, three bunches, fell to Mr. McIndoe, 1st, with typical bunches, of fine colour and size of berry. No other prize was awarded in this class.

The best Madresfield Court Muscat were shown

by Mr. J. Gibson, with perfect, symmetrical bunches of large size; Mr. G. Elliott, gr. to P. Graham, Esq., Molesey; and Mr. J. Bury, Forest Hill, the prizes falling to them in the order of their names.

Black Alicante Grapes were well shown by Mr. T. T. Wright, gr. to C. Lee Campbell, Esq., Ross, 1st; Mr. J. Hollingworth, Uttoxeter, Derby, 2nd; and T. F. Rivers & Sons, Sawbridgeworth, 3rd.

Grapes of any other white variety were shown by Mr. P. E. Kay, Finchley, 1st; W. Elphinstone, with Cannon Hall Muscat, 2nd; Mr. T. Osman, Chertsey, with Mrs. Pearson, large bunches, but small berries, 3rd. Grapes of any other black variety, 1st, Mr. G. Reynolds, with fine Gros Maroc; 2nd, Mr. T. Coomber with the same variety, very big berries and bunches, and jet black; 3rd, Mr. W. Iggulden, gr. to the Earl of Cork, Marston House, Frome, with the same, with symmetrical bunches of fine quality.

The next class, that for a basket of Grapes containing 12 lb. packed for transit by railway, and delivered at a distance of not less than 10 miles, was a very important one, and here Mr. J. Hudson, Gunnersbury House, Acton, was adjudged the winner. His Grapes, which had in reality travelled to Croydon and back to the exhibition, i.e., about 46 miles, were simply laid in a cross-handled basket, secured merely by a piece of twine connecting the stalks; there was no sign of rubbing as to cause loss of bloom. Mr. C. Sutton, gr. to Earl Stanhope, Sevenoaks, was 2nd. His Muscats had travelled well in a like basket. Messrs. T. F. Rivers were 3rd. In this instance the bunches were secured by their stalks to the sides of the basket.

For the best boxes of Grapes, conditions as in the previous class, 1st, Mr. J. Turton, gr. to J. Hargreaves, Esq., Erlegh, Reading. These bunches were secured to the sides of the box, which measured 15 by 10 by 7 inches, and held 10 lb. The 2nd prize was not awarded, and Mr. J. Dawes, Ledbury, was 3rd; his box was rather larger than the other, and heavily wadded at the sides and ends.

Mr. A. Methven, gr. to W. Keiller, Esq., Wimbledon, was 1st for one Pine, a Smooth Cayenne, weighing about 5 lb.; Mr. R. Nicholas, gr. to Earl Fortescue, South Molton, being 2nd.

Mr. Wallis, gr. to R. Sneyd, Keele Hall, took 1st prize for three dishes of Figs; and Mr. J. Evans, gr., Melchet Court, Hants, was 1st for a single dish.

In the following eighteen classes, the fruit must have been grown and ripened in the open air. Peaches and Nectarines were shown in excellent quality, and competition in all the classes was very keen. Sir W. M. Collet, Bart., Sevenoaks (gr., R. Potter), was 1st for three dishes, showing good and highly-coloured fruit of Grosse Mignonne, Dr. Hogg, and Crimson Galande; Mrs. S. Clarke, Croydon (gr., William Carr), was 2nd, with Royal George, Dr. Hogg, and Noblesse; whilst the 3rd prize was gained by the Earl of Radnor, Longford Castle, Salisbury (gr., H. W. Ward).

For two dishes, the 1st place was taken by W. Biddulph, Esq., Herefordshire (gr., J. Dawes), with Abies and Violette Hative, the latter being very fine; Early Grosse Mignonne and Violette Hative were those shown by Mr. Haine, Highworth, who came 2nd; whilst Lord Foley, Ruxley Lodge, Esher (gr., J. Miller), was 3rd, with Noblesse and Bellegarde.

There were twelve entries in the class for one dish of Peaches, and the quality in most of them was first-rate. Fine, large, and well-coloured fruits of Hale's Early, brought Mr. J. Austen, Witley Court Gardens, Stourport, the 1st position. Sir M. W. Collet, Bart., was 2nd, with Crimson Galande, and Lord Gage, Lewes, Sussex (gr., G. Helman), was 3rd, with Early Beatrice.

For three dishes of Nectarines, the 1st prize was obtained by Sir M. W. Collet, Bart., for admirable examples of Rivers' Orange, Spencer, and Elrue; Mrs. S. Clarke was 2nd with Elrue, Lord Napier, and Princess Orange; and the Earl of Radnor, 3rd.

For two dishes, W. Biddulph, Esq., Hereford, was 1st with Lord Napier and Humboldt; and Lord Foley with Violette Hative and Pitmaston Orange, was 2nd. W. Biddulph, Esq., was 1st again for one dish, showing good even, well-coloured fruits of Lord Napier; J. Hargreaves, Esq., Reading (gr., Thos. Turton), was 2nd, with Humboldt; and Lord Napier secured the 3rd position for Lord Ebury, Rickmansworth (gr., J. C. Mandell). There were twelve entries in this class.

Plums.—In all of these classes competition was remarkably strong, eighteen to twenty entries having been staged in many of the classes, and many superb dishes of Plums, culinary and dessert, formed one of the strongest features of the exhibition.

The 1st class was for three dishes (distinct) of red Plums, and the premier position was attained by

Sir J. W. Pease, Guisborough, York (gr., J. MacIndoe), whose exhibits of Pond's Seedling, Victoria Denyers, and Sultan, left little or nothing to be desired. Messrs. T. Rivers & Son, Sawbridgeworth, followed with Sultan, Belle de Louvain, and Victoria; whilst good fruits of Magnum Bonum, Victoria, and Pond's Seedling, obtained the 3rd place for E. H. Watts, Esq., Chiswick (gr., A. W. Porteous).

Mr. W. Lane showed the best three distinct dishes of purple Plums, which were Kirke's Black Diamond and Englebert. The Earl of Cork (gr., W. Iggulden) was 2nd with Kirke's Czar and Blue Perdrigon; and Sir J. W. Pease was 3rd.

Plums, green or yellow, three distinct dishes.—The Earl of Cork, Somerset, was 1st for these, showing Early Transparent Gage, Golden Drop, and Washington; 2nd, Sir J. W. Pease, with Golden Gem, Green Gage, and Jefferson; the Earl of Radnor was 3rd.

Lord Braybrook, Saffron Walden (gr., Jas. Vert), was 1st for one dish of dessert Plums, showing fine coloured samples of Jefferson's; the Messrs. Rothschilds (gr., J. Hudson) was 2nd, with Kirke's; and Messrs. Rothschild (gr., Geo. Reynolds) 3rd, with Golden Emperor. There were seventeen entries.

One dish of culinary Plums.—The Earl of Radnor (gr., Mr. H. W. Ward), was 1st, with Diamond (red); J. Hargreaves, Esq., 2nd, with Victoria (purple); and Sir J. W. Pease, 3rd, with Magnum Bonum (yellow). Nineteen entries.

Apples.—These were shown in better condition than might have been expected, seeing that the crop is rather under the average. The 1st class was for six distinct dishes of cooking Apples, and there were ten entries. The 1st position was taken by J. Hargreaves, Esq., who had Peasgood's Nonsuch, The Queen, Catshead, Ecklinville Seedling, Warner's King, Lord Suffield, and Waltham Abbey Seedling; F. Cornwallis, Esq., Maidstone (gr., J. Mackenzie), was 2nd with Grenadier, Lord Suffield, Catshead, Emperor Alexander, Frogmore Prolific, and Lord Grosvenor, Messrs. Rothschild (gr., Geo. Reynolds), were 3rd, for a lot which included Gloria Mundi, and Pott's Seedling.

For the three best Apples, 1st, Mr. C. Slade, gr. at Workshop Manor, Notts, with very nice ripe fruits; 2nd, Mr. T. Coomber; 3rd, Mr. J. Fry, gr. to Captain Edwards, Pinner.

For three distinct dishes of cooking Apples, Mr. Will Tayler, Osborn Nursery, Hampton, Middlesex, was 1st with Lord Suffield, Warner's King, and the Queen; 2nd, E. H. Watts, Esq., Chiswick, with Peasgood's Nonsuch, Lord Suffield, and Warner's King; 3rd, G. Thompson, gr. to Messrs. W. E. Wells & Co., Hounslow.

For one dish of cooking Apples, J. Hargreaves, Esq., was 1st, with specially fine Peasgood's Nonsuch; F. Cornwallis, Esq., Maidstone, was 2nd, with Grenadier; and Mr. Will Tayler, 3rd, with Lord Suffield. There were twenty entries.

Mr. Geo. Goldsmith, was 1st, for three distinct dishes of dessert, showing Beauty of Bath, Lady Sudeley, and Astrachan Red; 2nd, Messrs. Rothschild (gr., G. Reynolds), with Duchess of Oldenburgh, Lady Sudeley, and Red Astrachan. J. Hargreaves, Esq., was 3rd.

Mr. A. Hester, Plumstead Common, was 1st for one dish of dessert, with Red Astrachan; Earl Stanhope, Sevenoaks (gr., C. Sutton), 2nd, with Lady Sudeley; and Mr. A. Wyatt Hutton, with Irish Peach, 3rd.

Pears.—Three dishes of dessert, 1st, Sir M. W. Collet, Bart., with Williams' Bon Chrétien, Souvenir du Congrès, and Clapp's Favourite. 2nd, Lord Gage, Lewes, with Beurré de Amanlis, Clapp's Favourite, and Williams' Bon Chrétien. In the classes for Pears, the effect of the bad season was strikingly seen, and the entries were but few.

For one dish, Mr. G. Helman obtained 1st for Clapp's Favourite; 2nd, Lord Ebury, with Albertine; and 3rd, Mr. Richard Parker.

The remaining classes were open to fruit grown under glass, or outside, and in the classes for dessert Apples or Pears, the fruit was to be ripe and fit for table.

For three distinct dishes of cooking Apples, the prize was awarded to J. Hargreaves, Esq., who had excellent fruits of Lord Suffield, Warner's King, and Peasgood's Nonsuch; Sir J. Pease was 2nd, with Peasgood's Nonsuch, Emperor Alexander, and Mère de Ménage, which were hardly inferior to the 1st exhibit; J. W. Wells, Esq. (gr., Mr. J. Nicholson), was 3rd, who included Yorkshire Beauty.

Messrs. Rivers & Son were 1st for one dish of cooking Apples, with wonderfully fine Peasgood's Nonsuch; J. Hargreaves, Esq., 2nd, with Lord

Suffield; and Mr. J. Nicholson, 3rd, with Peasgood's Nonsuch.

For three distinct dishes of dessert Apples, Sir J. Pease was 1st, with Jefferson's Worcester Pearmain and Gravenstein; J. Hargreaves, 2nd, with Irish Peach and Red Astrachan; and C. Lee Campbell, Esq., Ross, Herefordshire (gr., S. J. Wright), 3rd.

Messrs. T. Rivers & Son, were again 1st for one dish of dessert Apples, showing excellent specimens of Cox's Orange Pippin; Sir J. Pease, 2nd, with Ribston Pippin; and Lord Stanhope, 3rd, with Lady Sudeley.

Pears.—Messrs. T. Rivers & Son, took the 1st prize for three distinct dishes, with Souvenir du Congrès, Clapp's Favourite, and Williams' Bon Chrétien; 2nd, Mr. J. Nicholson; and 3rd, Sir J. Pease.

For one dish, Messrs. Rivers were again 1st, showing Pitmaston Duchess; Messrs. Rothschild (gr., Geo. Reynolds), 2nd, with Clapp's Favourite; and 3rd, Sir J. Pease, with Souvenir du Congrès.

Tomatos.—For six distinct dishes of Tomatos, the 1st prize fell to Mr. Ed. Ryder, for Optimus, Ignotum, Ham Green, Stamfordian, and Golden Favourite; Mr. J. Hill, New Maldon, was 2nd, with Sutton's Perfection, Conference, Trophy, Ham Green, and Challenger.

For three dishes of Tomatos, there were nine entries, Mr. J. Roberts, Shepperton, being 1st, for Webbs' Jubilee, The Cardinal, and Early Ruby; C. Boyer, Esq., Forest Hill (gr., J. Bury), 2nd; and Messrs. W. & E. Wells, 3rd.

For one dish of yellow Tomatos, Mr. Ed. Ryder was 1st, with Golden Sunrise; C. Boyer, Esq., 2nd, with Sutton's Golden Perfection; and Captain Ed. Pinner (gr., Jas. Fry), 3rd, with Blenheim Orange.

Mr. Jno. Hill, New Maldon, was 1st for one dish of red, showing Sutton's Perfection; Mr. J. Roberts 2nd, with Webbs' Jubilee; and Mr. J. Dawes 3rd, with Ham Green. Some very large fruits of Royal Sovereign, from Mr. Gilbert, Burghley, failed to score.

MISCELLANEOUS AND NON-COMPETING EXHIBITS.

At the end of one of the rooms were a few large Palms, staged by Messrs. Wills & Segar; and in the front of these a large and magnificent group of double and single Begonias, staged by Messrs. Laing & Son, Forest Hill, which was awarded a Gold Medal. This was the finest group we have seen this season; both the arrangement and the quality of the plants left little to be desired. The best of those staged were the following, all of which received First-class Certificates:—Mrs. French, Lady Theodora Guest, Lady Grimthorpe, Lord Escher (a large double), Duchess of Teck, Henshaw Russell, and Stanstead Gem, another lovely scarlet.

Messrs. Wm. Paul & Sons received a Silver-gilt Medal for a group of Peaches, Nectarines, and Figs, in pots, in very fine condition; the Peaches were left unpruned, illustrating on a small scale the extension system of growing fruit trees. Messrs. J. Cheal & Sons, Crawley, a Silver Medal for cut flowers of Dahlias, &c. Mr. J. F. McLeod, gr. to J. S. Morgan, Esq., Roehampton, staged a very pretty group of Crotons, intermixed with Ferns, and other dwarf foliage plants. The plants were exceptionally well-coloured, dwarf, and in small pots. Amongst the best of them were Thompsoni, with almost the whole of the broad leaf a bright gold colour; C. chrysopœcilis, another of the finest of the broad leaf section (Silver-gilt Medal).

Messrs. E. D. Shuttleworth & Co. had a large group of Palms, Crotons, Dracenas, Lilioms, &c., in fine condition, at the end of one of the rooms, and were awarded a Gold Medal. Mr. Wythes, gr. to the Duke of Northumberland, showed a pretty group of Campanula pyramidalis in bloom, and was awarded a Silver Gilt Medal. Mr. McMillan, gr. to Jas. Currie, Esq., a collection of Chrysanthemum blooms (Bronze Medal). Messrs. Cannell & Sons, Swanley, a fine stand of Dahlia (Cactus) blooms, and some very good Cannas (Silver-gilt Medal). Another collection of Dahlias came from Mr. C. Turner, Slough, and included some very fine show blooms; also a collection of herbaceous Sunflowers, Roses, &c. (Silver-gilt Medal). W. Marshall, Esq., Auchinraith, Bexley, sent a fine collection of hardy Ferns in pots, including the specimen Polypodium vulgare var. trichomanoides, which was awarded the prize for the best Fern exhibited at the Fern Conference at Chiswick last week (Gold Medal). The same exhibitor obtained a First-class Certificate for his Begonia Madame Alcangy. An extra prize was awarded Mrs. W. Hodgkins, Didsbury, for a stand of ornamental skeletonised leaves. Messrs. Kelway & Son, Langport, staged a magnificent collection of

Gladiolus, and obtained a Silver-gilt Medal and five Certificates.

Messrs. J. Veitch & Sons showed sprays of ornamental shrubs and trees, including Hydrangea quercifolia, Quercus cuspidata, Q. pedunculata concordia, Cydonia japonica bearing fruit, Cornus alba Späthii (First-class Certificate), Castanea vesca dissecta, &c. Also Seedling Streptocarpus (First-class Certificate) and Rhododendron javanicum jasminiflorum hybride, some of which secured First-class Certificates, viz., Minerva, Souvenir de J. D. Mangles, Ruby, President, and Imogene (Silver-gilt Medal).

Messrs. Wm. Paul & Son, Waltham Cross, a large collection of cut flowers of herbaceous plants; also Roses, Dahlias, &c. (Gold Medal).

Messrs. Herb & Wille, John's Hill, E.C., staged an interesting collection of Pine cones of some number of species. The nomenclature, however, required revision (Silver Medal).

Messrs. Webb & Brand, Saffron Walden sent a lot of single blooms of Hollyhocks, and obtained a Bronze Medal.

Mr. J. Hudson, gr. to Messrs. Rothschild, Gunnersbury House, showed a fine lot of specimen Pelargoniums (scented varieties), and was awarded a Gold Medal. Also a specimen of Asparagus deflexus (First-class Certificate). Mr. J. R. Chard, Stoke Newington, was awarded a Silver Medal for his Arcadian decorations. Messrs. J. Laing & Sons, a very large collection of herbaceous flowers (Silver Gilt Medal). Mr. Arthur Rawlings, Dahlia Nursery, Romford, Essex, a collection of show Dahlias, Pompons, &c. (Silver Gilt Medal). Messrs. Wm. Cutbush & Sons, Highgate, a collection of herbaceous plants (Silver Medal). Mr. G. Reynolds, gr. to the Messrs. Rothschild, obtained First-class Certificate, for a new seedling Carnation, Madame Leopold de Rothschild. Messrs. T. Rivers & Son, Sawbridgeworth, showed some fruit trees in pots, including Pears, Apples, Plums, Peaches, and Nectarines. The trees were exceedingly healthy, and carrying fine crops of fruits. This was awarded a Gold Medal. Mr. W. Shingler, Melton Constable, exhibited a new Grape (black), Lady Hastings. Messrs. Jarman & Co., Chard, Somerset, sent a very extensive collection of vegetables, including fine Celery, Potatoes, Onions, &c.; also of fruits, amongst which were two heavy bunches of Black Hamburg Grapes, a dish of first-class Cherries, &c. (Two Silver Medals). Messrs. H. Lane & Son, Berkhamstead, received a Gold Medal for an excellent lot of pot Vines, bearing good bunches of ripe fruit: the varieties included Black Hamburg, Alicante, Buckland Sweetwater, Foster's Seedling, and Gros Maroc; also a collection of fruits of Apples, Nuts, Plums, &c. A few good smooth Cayenne Pines came from the Duke of Newcastle, Workop (gr., Mr. C. Slade) (Silver-gilt Medal).

Messrs. Collins, Bros., & Gabriel, Waterloo Road, London, S.E., received a First-class Certificate for their new Tomato, Collins' Challenger, said to possess wonderfully good flavour. For a collection of spring-sown Onions, Mr. J. Gibson, The Oaks, Carshalton, was awarded a Bronze Medal; they were exceptionally fine and firm, especially a variety called Rousham Park. A collection of very fine Apples, in twenty-four varieties, came from Mr. J. Walker, Ham, Surrey, Duchess of Oldenburgh and Lady Sudeley being especially good (Silver-gilt Medal). Messrs. J. Cheal & Son, Lowfield Nursery, Crawley, exhibited a collection of Apple trees in pots, most of them cordons; also an immense number of fruits (Silver Medal). Messrs. Geo. Bunyard & Co., Maidstone, also had a large collection of Apples and Pears; of the latter, Triomphe de Vienne, Souvenir du Congrès, Pitmaston Duchess, and Beurré de Amanlis were very fine (Silver Medal). Mr. J. Miller, gr. to Lord Foley, Ruxley Lodge, Escher, had an ornamental basket of fruits, including some good Peaches, Melons, Grapes, Apples, &c. Mr. J. Wallis, gr. to R. Sneyd, Esq., Keele Hall, Newcastle, Staffordshire, exhibited Peaches Walburton Admirable and Bellegarde, also Lord Napier and Stanwick Elruge Nectarines, all very fine—grown under glass. Messrs. R. N. White & Co., Covent Garden, exhibited a collection of foreign fruits, as they had come packed to this country, and included Grapes from Spain and Portugal, Melons from Spain, Pears (good) from California, Peaches, Pears, and Plums from France, and Onions from Portugal and Spain (Silver-gilt Medal).

A large collection of finest English fruit, that had been sent to Mr. Geo. Monro, salesman, Covent Garden, was exhibited by Messrs. Butt & Son, in the condition in which they had arrived in London. Included were Grapes, Tomatos, Melons, Figs, Peaches, Pines, Plums, and Mushrooms, &c. (Gold

Medal). Mr. A. H. Rickwood, Twickenham, showed a collection of Peaches, and was awarded a Bronze Medal.

A quantity of rather poor Grapes were shown by Mr. J. Clarke, Albion Nursery, Farnham, as having been grown without fire-heat. They consisted of the more popular market varieties, and would have been better had the grower shown more mercy to his Vines and not let them bear forty-five to sixty bunches each.

NEW PLANTS.

The occasion was utilised by several nurserymen for exhibiting novelties in plants. Messrs. B. S. Williams & Son, Holloway, had Pachystoma Thompsonianum, a neat pretty species of Orchid, with white sepals and petals, and narrow lip of magenta colour, the side lobes of which are green, with brown spotting. It is a plant of dwarfish habit. Angraecum grandiflorum, a curiously tailed flower of green and white with a trough-like lip; several Dracenas, viz., D. indivisa Veitchi variegata, with leaves 2 inches wide, white and green, except at the base, where they are reddish; D. H. E. Milner, bronzy-green, in the old foliage creamy-white in the heart-leaves; D. Miss Glendinning, D. Alex. Laing, and D. Mrs. Laird, were narrow-leaved varieties of crimson and bronze; Pandanus consens, narrow green leaves, with a brown edge and spines, semi-pendent in habit; Cupania elegantissima, a pretty foliage plant; Carludovica palmifolia, a free-growing subject, with a leafed stem, and numerous aerial roots; and several novelties in ornamental-leaved Begonias.

A table of new or noteworthy plants, of considerable merit, was contributed by Messrs. F. Sander & Co., St. Albans. A fine form of Odontoglossum Roezli, with triangular purple patches at the base of the petals; Lælia elegans Schrodera, Vanda Hookeræ, Renanthera matutina, not quite new, but a remarkably striking flower—a large well-bloomed specimen; Cattleya Parthenia nobilis, Odontoglossum Wattianum, figured recently in the *Reichenbachia*, a flower which seems to combine the features and colouring of several distinct species.

Several of Mr. Maynard's seedlings of Cypripediums were shown in this collection, some of them being very pretty, and all are distinct from anything at present in existence. We may mention the following: The Waddesdon variety of Cattleya Schofieldiana, Vanda Sanderiana, Lælia Gravesiæ, named after Mrs. Graves of New Jersey, and a result of a cross between Cattleya crispa and Lælia purpurata. It is a pretty thing, but it being the first flower on a plant flowering for the first time, its true characteristics are not developed.

In the evening a large party of gardeners dined together, under the presidency of Mr. William Thomson, of Clovenfords, who, in his speech gave an interesting retrospect of the condition of gardening and of gardeners for the last sixty years. He enlarged upon the salaries paid to high class gardeners, which are certainly very low in proportion to the forethought and responsibility exercised. The Secretary of the Royal Horticultural Society concurred in the remarks of Mr. Thomson, but did not say how matters could be improved, though indirectly, at any rate, the Society might do a great deal to raise the social position of gardeners and to secure a better education for beginners. The line between gardeners and garden-labourers needs to be drawn more clearly.

NEWCASTLE-ON-TYNE HORTICULTURAL.

AUGUST 24, 26.—After the disastrous event on the eve of the large summer show intended to be held last year, which resulted in its abandonment, it was no doubt a moot point whether the Society would resuscitate itself. That this has, however, been done is an undisputed fact, and the executive are to be congratulated upon the superior quality of the show, and also upon the ready response made to their appeals whereby they have been placed in a better financial position. The show was in all points an excellent one, and there were many indications of superior culture manifest in the exhibits.

Plants.—These were staged in considerable quantity. For eight stove or greenhouse plants in flower, Mr. Nicholas, gr. to the Earl of Zetland, Upleatham, was worthily placed 1st, with finely grown all round specimens, the best of which were Dipladenia amabilis, Erica Austiniana, and E. ampullacea, both about 4½ feet through, and very fresh; Statice profusa in full bloom; Bougainvillea glabra, two capital Allamandas, with Cypripedium Lawrenceans, an extra large plant, with fifty or more grand flowers. Mr.

Wylam, Shankhouse, was a good 2nd, his finest plants being *Rondeletia speciosa* major, *Stephanotis floribunda*, and *Statice profusa*.

With six plants in bloom, Mr. Morris, Felling, was easily 1st, he having a very fine example of *Ixora Williamsii*, some 5 feet through, and in profuse bloom; with good examples of *Lapageria alba* and *Stephanotis floribunda*. Mr. Wylam was again 2nd, showing, amongst other plants, a fine plant of *Erica retorta* major.

With both four and three *Ericas*, Mr. Nicholas was placed 1st, showing medium-sized plants, fresh, healthy, and in profuse bloom, these were *E. æmula* Irbyana, *Aitoniana*, *Turnbulli*, *Austiniana*, and *Ne Plus Ultra*.

For eight fine-foliaged plants, Mr. McIntyre, gr. to Mrs. Pease, Darlington, was 1st, with large healthy plants, the best being *Croton Andreanus*, *Phoenix rupicola*, and *Cycas revoluta*; whilst for six plants, he was beaten by Mr. Nicholas, who staged a fine half-dozen, *Croton angustifolius* and *C. Queen Victoria* being particularly fine.

Exotic Ferns were very good from Mr. McIntyre in two classes, the best of these were *Davallia fijiensis*, two examples, each in fine health, and about 6 feet through; *Gleichenia dichotoma*, rarely exhibited; also a good healthy piece of *G. Mendelii*, with *Adiantum Farleyense* and *A. Veitchii*. Mr. McIntyre also had the best selection of plants for the dinner-table.

Cut Flowers.—Roses were remarkably fine. Those staged by Messrs. Harkness & Son, Bedale, were of full size, and fresh in colour, being quite equal to exhibits in the south during the first week in July. The finest blooms were Mrs. John Laing, Charles Lefebvre, Countess of Rosebery, Ulrich Brunner, and Marie Baumann. This exhibit was a splendid 1st; Messrs. Mack & Sons, Catterick Bridge, following. Messrs. Harkness also won with *Gladioli*, the spikes extra large; Grand Rouge, Baroness Burdett Coutts, Sceptre de Flore, and Opal, were the best. Mr. A. G. Brown, gr. to Mrs. Barnes, Whitburn, was 2nd.

Hardy herbaceous and border flowers were a feature, being shown in extra large bunches; the best eighteen kinds were those from Mr. J. G. Roe, Barnard Castle, amongst which were *Lilium chalcedonicum* and *Chelone barbata*; Messrs. Harkness & Son were 2nd, and included *Montbretia crocosmæiflora* and *Tigridia conchiflora*, with other good things. The best Dahlias were of shows, from Mr. Walker of Low Fell, and of fancies from Mr. Humphries, Chippenham, the latter exhibitor also being 1st for both Pompons and Cactus varieties. Mr. Thomas Flowdy, Gateshead, was 1st in two classes for florists' Carnations. Stove and greenhouse cut flowers were finest from Mr. Nicholas, who had a choice lot. Pansies and Marigolds were also shown in large numbers, and very fine.

Floral Decorations.—About a dozen classes were provided in this section, and the competition was very keen in nearly every case. Messrs. Perkins & Son, Leamington, were 1st for a beautifully-arranged hand-bouquet, also for the best spray and button-hole, each in their usual good style. For a bridal bouquet, they were beaten by Mr. W. R. Armstrong, Benwell, who also was 1st for a basket of cut flowers, with an exquisite arrangement. Mr. J. Lawson, Sunderland, showed well in other classes for bouquets; so also did Miss Edmondson, Newcastle, for a basket.

Fruit.—Taken throughout, the classes were well filled and the quality excellent. Mr. Hunter, Lambton Castle Gardens, was an easy winner in two classes for collections. In the larger class he staged extra fine Gros Maroc Grapes and Muscat of Alexandria, Royal George Peaches, smooth Cayenne Pine, and good Apricots and Jefferson Plums. In the other he had similar good fruit. Mr. Tullett, Raby Castle Gardens, was in each instance, 2nd, staging excellent produce, his best dishes being Madresfield Court Grapes, Pine-apple Nectarines, and Dymond Peaches.

For four dishes, Mr. Tullett was 1st, with fine Black Hamburg Grapes, Peaches, and Nectarines; and for six dishes of hardy fruit, his Cherries and Gooseberries being the best of these. Mr. Hunter found a successful antagonist for six bunches of Grapes in three varieties, in Mr. Potter, gr. to W. Moore, Esq., Carlisle, who showed Alicante, Madresfield Court, and Muscat of Alexandria, all finely finished and good-sized bunches. Mr. Hunter's collection was scarcely up in colour. For Black Hamburg, Mr. Atkinson, gr. to Sir E. Blackett, Bart., Matfen Hall, was 1st. Mr. Potter took 1st for Alicantes in good character, also for any other black with Gros Maroc, being followed by Mr. Nicholas, with good

Madresfield Court. Muscat of Alexandria were much the best from Mr. Potter, the berries of extra size; he also took the 1st prize for Buckland Sweetwater in its class, and for the heaviest bunch with Trebbiano, having only size to recommend it.

The best Pine-apples came from Mr. Hunter, and from Mr. Blair, Trentham, but the latter, with his well-ripened Queen, should have been 1st. Mr. Nicholas was 1st for Peaches, with finely-coloured Hale's Early, grown outside. Mr. Tullett was 1st for Nectarines, with good Pine-apple. From the latter source also came the finest Cherries in Bigarreau Napoleon. Mr. Hunter had the finest dishes of four kinds of Apples, in both dessert and culinary classes, the kinds being Kerry Pippin, Jefferson, Worcester Pearmain, Gravenstein, Alfriston, Ringer, Lord Grosvenor, and Peasgood's Nonsuch, all evidently grown under glass. For four kinds of Pears, he occupied the same place, with Clapp's Favourite, Williams' Bon Chrétien, Doyenné du Comice, and Gregoire Bourdillon; and again for Plums, with White Magnum Bonum. Mr. Tullett had a fine dish of Tomatos, and was placed 1st.

Miscellaneous Exhibits.—These were chiefly from nurserymen, and greatly assisted in the general effect. Messrs. Harkness exhibited several boxes of Roses, notable amongst which some dozens of very fine blooms of Mrs. John Laing, of large size, very full, and bright in colour, were extremely good. Messrs. Jas. Robson & Sons showed well-grown Conifers and variegated shrubs. Messrs. Little & Ballantine staged a splendid group of fine foliaged plants at the end of one marquee. Messrs. Laing & Mather had a fine display of Carnation blooms, amongst which were several of the pink and blush Malmaisons, with Duke of Fife and Lady Nina Balfour, two good pink varieties. Mr. Cuthbertson showed a large number of herbaceous plants, and Mr. John Forbes, Hawick, Carnations and Pentstemons, Pansies, &c. Messrs. Stuart and Mein had Carnations; Messrs. Wm. Fell & Sons, a large group of Conifers, of large size; Mr. W. J. Watson, a fine group of hardy plants and flowers, Lilies, &c. Mr. Handysides showed very large Tomatos.

DEVON AND EXETER HORTICULTURAL.

AUGUST 19.—The annual summer exhibition of this Society was held as usual on the grounds of Northernhay, by permission of the Mayor and Council of the City of Exeter, and was in every way a success but the weather, visitors arriving from all parts of the county. The exhibits were not quite so numerous as last year, but the quality throughout was as good, and especially fine were the exhibits of vegetables. Considering that this county has suffered from a long period of drought, it was much to be wondered at that such excellent productions were possible. A greater amount of space for the exhibits was found than on previous occasions, when overcrowding was a great evil, and the extra amount of space conducted to the more effective arrangement of the exhibition.

Cut Flowers (Open).—For forty-eight Dahlias, double distinct, there was only one competitor, that being Mr. Geo. Humphries, who was deservedly awarded 1st prize. His collection included the best of the old and modern varieties of the flower.

For forty-eight *Gladioli*, distinct, 1st, Mr. G. Hawkins, gr. to W. H. Fowler, Esq., Taunton, who had a splendid lot of good flowers, including several seedlings of great merit.

General Prizes.—For twelve stove and greenhouse plants, six in flower and six foliage, distinct, 1st, Mr. Rowland, gr. to W. Brock, Esq., with healthy and good specimens of *Rondeletia speciosa* major, *Stephanotis*, *Dipladenia amabilis*, *Clerodendron*, *Ixora Williamsii*, *Dipladenia Brearleyana*, *Kentia Fosteriana*, *Crotons* *Disraeli* and *Andreas*, *Latania borbonica*, *Anthurium Warocqueanum*, and *Cycas revoluta*; 2nd, Mr. Thos. Wilkins, gr. to Lady Theodora Guest.

For six stove and greenhouse plants, three in flower and three foliage, Mr. Rowland was 1st, with some equally good plants of *Stephanotis*, *Ixora* *Dixiana*, *Dipladenia amabilis*, *Dicksonia antarctica*, *Croton Queen Victoria*, and *C. Johannis*.

For six stove and greenhouse flowering plants, Mr. Rowland was again placed 1st with excellent specimens of *Ixora Prince of Orange*, *Bougainvillea glabra*, *Clerodendron*, *Dipladenia hybrida*, and *Ixora princeps*.

For eight stove and greenhouse Ferns, distinct.—1st, Mr. Rowland, with beautiful healthy specimens of *Leucostegia immensa*, *Adiantum cardiocladia* and

assimile, *Davallia elegans*, *Dicksonia antarctica*, *Neottopteris nidus*, *Actinopteris radiata*, *Microlepia hirta-cristata*.

For a miscellaneous collection or group of plants arranged for effect in an oval in a diameter of 12 feet by 16 feet, Mr. Rowland secured the 1st prize, with a fine and well-arranged group, which consisted of *Cocos plumosa*, *Humea elegans*, *Crotons*, *Crinum*, *Celosias*, *Eucharis*, *Ixoras*, *Cyperus*, *Vallotas*, *Tuberose*, *Orchids*, *Gloxinias*, grasses of various light kinds, with a groundwork of Maidenhair Ferns, the whole being surrounded with *Panicum variegatum*; 2nd, Mr. Thos. Wilkins, whose plants were set up in good style.

For a group, 12 feet by 8 feet.—1st, Mr. A. C. Williams, gr. to W. C. Sims, Esq.; 2nd, Mr. F. Prothero, gr. to W. McKenzie, Esq.

For six Fuchsias.—1st, Mr. Rowland, with large and well-flowered specimens.

For six *Gloxinias*, Mr. Heath, gr. to Sir W. Walrond, was 1st.

For twenty-four Dahlias, double, distinct: 1st, Mr. J. Nation, with a splendid stand of popular varieties.

For twelve Roses, distinct, 1st, Mr. G. Hawkins, with very fine flowers for the season, of Ernest Metz, Innocente Pirola, Anna Olivier, La France, Comtesse de Nadaillac, Souvenir d'Ami, Madame Margottin, Catherine Mermet, Miss G. Brownlow, Sunset, Cleopatra, and Bride.

Fruit.—For a collection of fruit, ten dishes, distinct: 1st, Mr. J. Lloyd, gr. to Vincent Stuckey, Esq., with grand bunches of Muscat and Black Hamburg Grapes, Melon Hero of Lockinge × Longleaf Perfection, Queen Pine, Bellegarde Peaches, Pine Apple Nectarines, Red Astrachan Apples, Brown Turkey Figs, Morello Cherries, and Greengages. 2nd, Mr. A. E. Crossman, gr. to J. Brutton, Esq.

For a collection of fruit, six dishes, distinct, Mr. Heath was 1st, with Alnwick Seedling Grapes, Beurré d'Amanlis Pear, Grosse Mignonne Peaches, Violette Hative Nectarines, Sutton's Triumph Melon, and Apricot Moor Park. 2nd, Mr. Martin, gr. to Lord Poltimore.

For one Pine-apple. 1st, Mr. S. Lock; 2nd, Mr. W. Snell, gr. to Colonel Garratt.

For three bunches of Black Hamburg Grapes, 1st, Mr. R. Pike, gr. to the Rev. H. Clerk.

For three bunches of Muscat of Alexandria. 1st, Mr. Martin, with splendid bunches and rich colour.

For three bunches of Madresfield Court Muscat 1st, Mr. R. Pike. For three bunches of Foster's Seedling: 1st, Mr. W. Connelly. For three bunches of Buckland Sweetwater: 1st, Mr. G. H. Copp. For three bunches of any other variety: 1st, Mr. R. Pike, with Trentham Black.

Our space does not admit of our mentioning the names of the prize winners in the competitions with dishes of hardy fruits, Melons, &c.

Vegetables.—For a collection of vegetables to consist of twelve kinds distinct, 1st, a Silver Cup, value £5, given by Messrs. R. Veitch & Son, Exeter. This was awarded to Mr. R. Mairs for a collection. He also received the prize offered for the best-arranged collection; it included Sutton's Prize Winner Runner Beans, Turnip Dobbie's Model White, Leek Renton Monarch, Cauliflower Veitch's Autumn Giant, Brussels Sprouts Veitch's Exhibition, Tomato Ponderosa, Titan Onion, Potato Satisfaction, Carrot Veitch's Intermediate, Pea Duchess of Albany, Celery Dobbie's Invincible White, and Cucumber Sutton's Matchless; 2nd, Mr. G. H. Copp, also with a grand collection.

Nurserymen's Collections.—Messrs. R. Veitch & Sons, staged a magnificent lot of Carnation blooms, including most of the new varieties, as well as the best of the old varieties, having some of the best, Lilian, Annie Douglas, Old Coin, Victory, Adèle, Mr. A. Barret, Countess of Jersey, Germania, &c. Boxes of Phloxes, Roses, *Gladiolus*, Dahlias, Stocks, herbaceous flowers, were also staged, and backed up with a beautiful collection of Palms, Japanese Maples, Orchids, &c.; and in the centre, a beautiful and skillfully arranged piece of rockwork was executed, and planted with all the choicest and most suitable of plants and flowers, made up a most charming and unique collection. Mr. W. Smale, Torquay, staged a grand lot of double and Cactus Dahlias, Hollyhocks, &c. Mr. Randall, Exe Bridge, staged a fine bank of grown decorative plants with boxes of seasonable flowers. Messrs. Jarman & Co., Chard, showed capital boxes of Carnations, Roses, Dahlias, *Gloxinias*, &c. Mr. Godfrey, Exmouth, boxes of Carnations. H. D. Badcock, Otley St. Mary, Begonia single and double blooms. Mr. H. W. B. Schofield,

staged forty varieties of Sweet Peas, which were much admired.

Mr. Box sent a fine lot of single and double blooms from Croydon. Mr. G. Kerswill, of the Bowhill Nurseries, staged a large group of handsome Palms, Crotons, &c., for decorative purposes.

BRIGHTON AND SUSSEX NEW HORTICULTURAL.

AUGUST 30, 31.—The first summer show held in Brighton under the auspices of the "New" Society, took place on Tuesday and Wednesday last in the Dome and Corn Exchange of the Royal Pavilion, and augurs well for the future success of the Association. There were between 600 and 700 exhibits,

(80 square feet), brought out several competitors, Mr. G. Miles, Victoria Nurseries, Dyke Road, Brighton, was easily 1st; he used an arrangement which had a grotto clothed with Ferns in the background, and in the front, a small Tree Fern on a mound. Messrs. W. Miles & Co., of West Brighton, to whom the 2nd prize was awarded, had a tasteful arrangement of the ordinary style.

From the gardens of J. Warren, Esq., Handcross Park, Crawley, came the finest specimen stove and greenhouse plants, those in the class for twelve, six to be flowering, being specially good, *Lapageria rosea*, *L. r. splendens*, *Cycas revoluta*, and Crotons of large size being conspicuous; the same exhibitor also showing well in the class for six Crotons, where he again led. Messrs. E. D. Shut-

four show and fancy; again for twelve do., with finely-formed blooms; for twenty-four bunches single vars., and twelve Cactus vars.; they were also awarded leading honours.

The competition for 1st was very close indeed in the class for Cactus vars., and Mr. E. V. Seale, Sevenoaks, almost secured the lead; and he beat Messrs. Cheal, with Pompones in bunches, showing an excellent lot.

In the class for forty-eight, show or fancy, the premier collection was sent by Mr. G. Humphries, nurseryman, Kingaton Langley, Chippenham. They were a finely-finished lot of popular varieties, and led easily.

Roses were poorly represented, the weather having told on them considerably. Mr. Woodland, nurseryman, Cocksbridge, showed the best twenty-four, in medium-sized blooms of popular varieties; and Mr. Harris, gr. to Mrs. Eversfield, Denne Park, Horsham, won prizes in the smaller classes.

In the smaller cut-flower classes, competition was well sustained, on the whole, some of the most noteworthy contributions being a box of cut stove and greenhouse flowers, from Mr. W. Archer, gr. to Miss Gilsens, Hill House, Saffron Walden; and from Mr. G. Duncan, gr. to C. F. Lucas, Esq., Warnham Court, Horsham, who respectively received 1st prize in the classes for twenty-four and twelve vars.; and that from Mr. M. Pritchard, nurseryman, near Christchurch, who was a good 1st with herbaceous flowers, including *Gaura Lindheimeri*, *Gaillardias*, *Tritomas*, *Liliums*, &c.

Perhaps the strongest competitions were to be seen in the single dish and smaller fruit classes, into details of which we cannot enter, however. In the leading class, for a collection of eight dishes, Mr. G. Reynolds, Gunnersbury Park, Acton, was a good 1st, staging magnificent Gros Maroc and Muscat of Alexandria Grapes, Clapp's Favourite Pear, Brown Turkey Fig, La Grosse Sucrée Strawberry, Sea Eagle Peach, a Melon, and a Pine, all uniformly well finished. The 2nd place was accorded to Mr. G. J. Sage, Ham House, Richmond, Surrey, with good Black Alicante Grapes.

In the class for black Grapes (three bunches), Mr. Reynolds led easily, again showing Maroc, but competition ran close for the other places; Mr. J. Spottiswood, Queen's Park, Brighton, being 2nd, with the same variety.

With fine Madresfield Court, Mr. Webster, gr. to Dr. Kirby, Beckenham, led in the single bunch class. Mr. Reynolds again led for white Grapes; and Mr. Coleman, gr. to — Henderson, Esq., was 2nd, with Muscat of Alexandria, the premier lot being finely coloured. Peaches were decidedly good, Mr. R. Potter, gr. to Sir M. W. Collett, Bt., Sevenoaks, led. Mr. Duncan was 1st for Cherries in a very close and large competition. Mr. Harris had best Greengages, and Mr. J. Didman the finest Plums.

In the vegetable classes it is to be regretted that some of the best collections were not set up in accordance with the terms of the schedule, and as a consequence were disqualified. Mr. W. Manton, gr. to Mrs. Clifford Borrer, Picknell, Bolney, was a very successful exhibitor in several classes; and Mr. G. Sheppard, Pullborough, also showed well. Potatoes, Beet, &c., were numerous and well shown by several exhibitors.

Non-competitive groups came from Messrs. Balchin & Son, Hassock's Gate; E. D. Shuttleworth & Co., London; and J. Cheal & Sons, Crawley; the latter comprising fruiting Apple trees in pots as well as dishes; and from Messrs. W. Edwards & Sons, Sherwood, a novelty in decorative pottery, &c., very suitable for Ferns. It is a rough surface, blackened and touched with bronze-gold, and very effective.

A word of commendation to the executive; the entry cards in all classes had the exhibitor's name and address printed, which was a great facility to us in securing our notes.

A SELF-WATERING PLANT-SHELF.

A DEVICE is being advertised in our columns by Mr. S. Deards, of Harlow, for supplying with water plants growing in pots, and standing in hot dry positions, such as the back shelves in forcing-houses. The troughs, which are made of metal with a corrugated bottom, on which the pots will stand, can be supplied with water by means of a hose or pipe to the depth of several inches, which obtains access to the

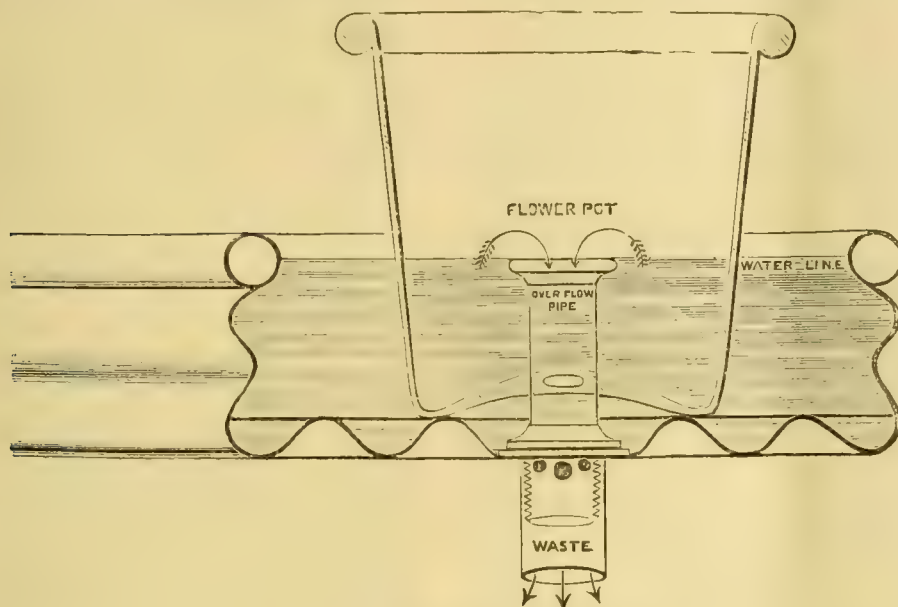


FIG. 49.—DEARD'S SELF-WATERING SHELF: END VIEW.

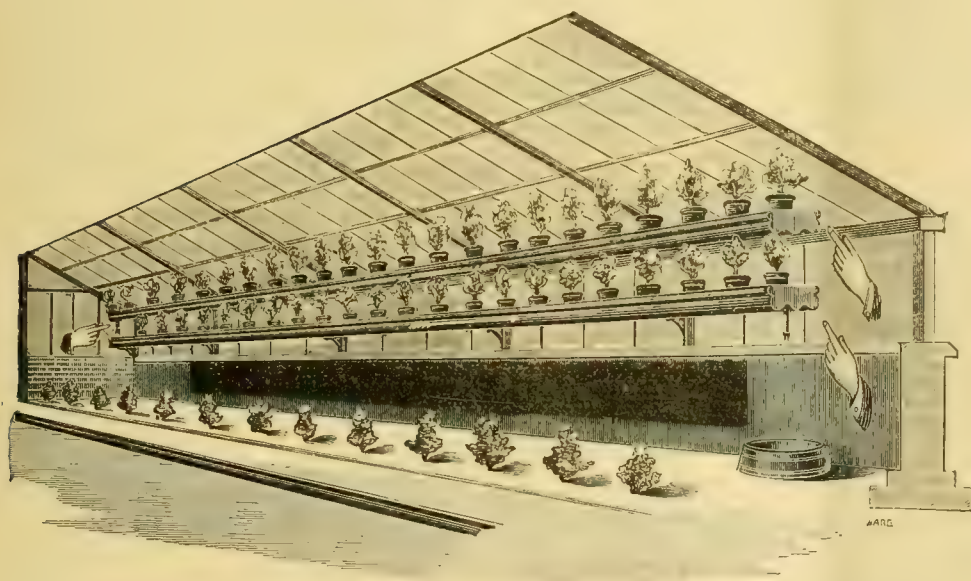


FIG. 50.—DEARD'S SELF-WATERING SHELF: SIDE VIEW.

and good quality was the rule. The plant classes were well sustained, and groups for effect were a feature. The first place for a miscellaneous group arranged for effect, space not to exceed 100 sq. feet, was won by the collection from Mr. Peel, gr. to Miss Todd, Sidford Lodge, Southampton, whose bright arrangement was very charming, *Lobelia cardinalis* and *Tuberoses* being conspicuous. Mr. J. Turner, gr. to Sir G. Smyth, Wick Hall, Furze Hill, followed closely, with a heavier arrangement and larger plants.

In the class for the smaller groups, Mr. E. Meachin, gr. to Mrs. Armstrong, Woodslee, Withean, led, his group containing some fine *Lilies* and *Dracenas*.

The class for a group of Ferns arranged for effect

tleworth & Co., Peckham Rye, London, being a good 2nd. The 2nd place in the class for twelve stove plants fell to Mr. T. Portnell, gr. to Sir A. Lamb, Bart., Beauport, Battle, while in the class for six specimen stove and greenhouse plants, Mr. W. Jupp, gr. to G. Boulton, Esq., Torfield, Eastbourne, was a fair 1st, with some fine Crotons in his collection. The best specimen ornamental foliage plant was a finely-grown *Croton Weismanni*.

In the cut-flower section, competition was closer generally than in the plant classes, Dahlias forming the chief feature, which were finely shown by Messrs. Cheal & Sons, Lowfield Nurseries, Crawley, in all sections; and they were easily 1st for twenty-

pots through the hole at the bottom, capillary attraction carrying the moisture to the upper portion of the ball. Various advantages are claimed by the inventor for his device, but we offer no opinion, not having tested it.

TRADE NOTICE.

HAMPTON HORTICULTURAL COMPANY (LIMITED).

This Company was registered on the 25th ult., with a capital of £3800, divided into 760 shares of £5 each, to carry on in Great Britain, Ireland, and elsewhere, the trade or business of Florists, Nurserymen, Farmers, and Gardeners, or Merchants of flowers, fruit, vegetables, &c. Registered by Nash & Co., 12, Queen Street, London, E.C.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending August 27.	ACCUMULATED.				10ths Inch.	Ins.	Total Fall since Jan. 3, 1892	Percentage of possible Duration for the Week.	
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.					
0	3 +	102	0	+ 8	+ 212	1 +	159	27.7	18	28
1	3 +	112	0	— 145	+ 241	5	126	16.2	33	33
2	3 +	130	0	— 94	+ 186	3	123	15.1	36	31
3	1 +	131	0	— 83	+ 210	5 +	114	15.4	49	38
4	2 +	130	0	— 53	+ 250	3	106	14.0	45	36
5	1 +	137	0	— 67	+ 138	9 +	94	12.5	45	42
6	3 +	120	0	— 66	+ 193	2	123	25.8	33	35
7	3 +	133	0	— 49	+ 165	3 +	122	20.2	25	35
8	2 +	131	0	— 5	+ 117	4 +	110	15.6	39	42
9	2 +	113	0	— 56	+ 122	8 +	134	22.6	24	31
10	2 +	124	0	— 2	+ 132	7 +	120	23.7	21	34
*	1 +	144	0	+ 74	+ 42	7 +	111	15.6	43	50

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.
Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending August 27, is furnished from the Meteorological Office:—

"The weather during this period varied considerably. Over eastern, southern, and central England, there were considerable intervals of bright sunshine; but, in the western and northern parts of the Kingdom the conditions were generally very cloudy or dull. Rain occurred from time to time in all places; occasionally accompanied by thunder and lightning. The rainfall experienced in Ireland during the earlier days of the week, and over the south of England at its close, was very heavy.

"The temperature exceeded the mean in all districts, the excess in most cases being 2° or 3°. The highest of the maxima were recorded during the early part of the period, when they ranged from 82° in 'England, E.' and the 'Midland Counties,' and 86° in 'England, S.' to 73° in 'Ireland, S.' and 71° in 'Ireland, N.' The lowest of the minima were registered at most stations on the 22nd, and ranged from 43° in 'Scotland, N.' 'England, S.' and 'Ireland, N.' to 32° in the 'Channel Islands.'

"The rainfall was rather less than the mean in 'Scotland, E. and W.' and in 'England, N.E.' but, more in all other districts; the excess over Ireland and the south and east of England being very considerable.

"The bright sunshine exceeded the mean over the greater part of England, but showed a deficit elsewhere. The percentage of the possible duration ranged from 49 in 'England, E.' 48 in the 'Channel Islands,' and 45 in the 'Midland Counties' and 'England, S.' to only 23 in 'England, N.W.' 24 in 'Ireland, N.' 21 in 'Ireland, S.' and to 18 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, September 1.

TRADE very depressed; all classes of goods with difficulty cleared at very low rates. *James Webber, Wholesale Apple Market.*

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.		s. d. s. d.		s. d. s. d.	
Arum, per doz. bl.	...	2	0	4	0
Asters, p. doz. bun.	...	1	6	4	0
— French, p. bun.	...	0	9	1	3
Carnations, 12 blms.	...	0	9	1	6
— 12 bunches	...	3	0	6	0
Chrysanthemums, p.	...	0	6	2	6
— doz. blooms	...	3	0	9	0
— p. doz. bunches	...	3	0	9	0
Cornflower, 12 bun.	...	1	6	3	0
Eucharis, per dozen	...	1	0	2	6
Gardenia, per dozen	...	1	6	3	0
Gladiolus, doz. bun.	...	0	9	1	6
— p. doz. spikes	...	0	9	1	6
Heliotrope, per doz.	...	0	3	0	6
— sprays	...	0	3	0	6
Lavender, doz. bun.	...	4	0	6	0
Lilium Harrisii, doz.	...	2	0	4	0
— various, doz.	...	1	0	3	0
Maiden Hair Fern,	...	4	0	6	0
12 bunches	...	4	0	6	0
Marguerite, per doz.	...	3	0	4	0
bunches	...	3	0	4	0
Orchids:—	...				
Cattleya, 12 blms.	...	4	0	8	0
Odontoglossum crispum, 12 blms.	...	2	0	6	0
Mignonette, 12 bun.	...	1	0	3	0
Myosotis, or Forget-me-not, 12 bunches	...	1	6	3	0
Pansies	...	1	0	2	0
Pelargonium, scar-	...	2	6	4	0
— let, per 12 bun.	...	0	6	1	0
— 12 sprays	...	0	6	1	0
Poppies, 12 bunches	...	2	0	4	0
Primula, double	...	4	0	6	0
Pyrethrum	...	2	0	4	0
Roses, Tea, per dozen	...	0	6	2	0
— coloured, dozen	...	1	0	1	6
— yellow (Maré-	...	2	0	5	0
chais), per doz.	...	1	0	2	0
— red, per dozen	...	1	0	2	0
— outdoor, 12 bun.	...	2	0	6	0
Stephanotis, 12 sprays	...	1	6	3	0
Stocks, doz. bunches	...	3	0	4	0
Sunflower, doz. bun.	...	3	0	6	0
Sweet Peas, doz. bun.	...	2	3	4	0
— Sultan, 12 bun.	...	1	6	3	0
Tuberose, 12 blms.	...	0	3	0	6

FRUIT.—AVERAGE WHOLESALE PRICES.		s. d. s. d.		s. d. s. d.	
Apples, p. half-sieve	...	1	0	3	6
Grapes, per lb.	...	0	6	1	6
Kent Fiberts, per lb.	...	0	6	0	8
Lemons, per case	...	15	0	35	0
Melons, each	...	0	6	1	3
Peaches, per doz.	...	2	0	6	0
Pine-apples, St. Michael	...	4	0	6	0
Plums, p. half-sieve	...	2	0	4	0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.		s. d. s. d.		s. d. s. d.	
Adiantum, per doz.	...	4	0	12	0
Aspidistra, per doz.	...	15	0	30	0
— specimen, each	...	7	6	21	0
Asters, per doz.	...	3	0	6	0
Balsams, per doz.	...	3	0	6	0
Begonia, per doz.	...	6	0	12	0
Campanula, per doz.	...	6	0	9	0
Chrysanthemums, p.	...	4	0	12	0
— large plants, ea.	...	1	6	2	6
Coleus, per doz.	...	3	0	6	0
Cyperus, per dozen	...	4	0	10	0
Dracæna, each	...	1	0	5	0
Ferns, various, doz.	...	4	0	9	0
Ferns, per 100	...	5	0	8	0
Ficus elastica, each	...	1	6	7	6
Fuchsia, per doz.	...	3	0	6	0
Heliotrope, per doz.	...	3	0	6	0
Hydrangea, per doz.	...	9	0	18	0
Lilium, various, doz.	...	18	0	30	0
Lobelia, per doz.	...	2	6	4	0
Marguerite, per doz.	...	6	0	12	0
Mignonette, doz pots	...	4	0	6	0
Palms, various, each	...	2	0	10	0
— specimens, each	...	10	6	84	0
Pelargonium, p. doz.	...	6	0	12	0
— scarlet, p. doz.	...	2	0	4	0

VEGETABLES.—AVERAGE RETAIL PRICES.		s. d. s. d.		s. d. s. d.	
Artichokes Globe, ea.	...	0	4	0	6
Beans, French, lb.	...	2	6	3	0
Beet, red, per dozen	...	2	0	3	0
Carrots, per bunch	...	0	4	0	6
Cauliflowers, each	...	0	3	0	6
Cucumbers, each	...	0	4	0	8
Endive, per dozen	...	2	0	3	0
Herbs, per bunch	...	0	9	1	0
Lettuces, per doz.	...	1	6	2	0
Mushrooms, punnet	...	2	0	—	—
Mustard and Cress, punnet	...	0	4	—	—
Parsley per bunch	...	0	3	—	—
Shallots, per lb.	...	0	6	—	—
Spinach, per bushel	...	3	6	—	—
Tomatos, per lb.	...	0	4	—	—
Turnips, per bunch	...	0	4	—	—

NOTICES TO CORRESPONDENTS.

AFFECTED LEAVES: C. S. We should say that moisture must have lodged in the hearts of the Cyripediums to cause the appearance shown in the leaf sent. Syringe the Crinum frequently with a weak decoction of Quassia chips, sponging them frequently with the same liquid.

ASSESSMENT OF GREENHOUSES: P. & Sons. They come under trade appliances, and should not be assessed at all.

BOOKS: H. S. W. Kitchen and Market Garden, Macmillan & Co., London. Mushrooms for the Million, J. Wright, 171, Fleet Street, London. Fruit Growing for Profit, G. Bunyard, Old Nurseries, Maidstone.—A. B. The Agricultural Text Book, by John Wrightson (W. Collins, Sons, & Co., London and Glasgow).—W. B. W. H. & E. Albert, 17, Gracechurch Street, E.C.

BULBS FOR PLANTING OUTSIDE AND INSIDE: W. H. M. Consult a nursery list. The names would occupy too much of our space.

CAMELLIAS FLOWERING IN AUGUST: J. M. S. It is not a rare occurrence on plants which made their flower buds at a very early part of the season; but, if the plants are kept cool and plenty of air is afforded them, if they are indoors, not many buds will expand before the usual season of flowering.

CORRECTION—ORCHID CALENDAR.—In our last issue, p. 243, see par. beginning, "Lycastes, and especially L. Skinneri," leave out not; also Vanda cerulea should not be watered twice daily, but the aerial roots should be sprinkled twice daily.

CYCLAMEN: Davis. We fail to find either fungus or insect. The decayed corms are the result of faulty treatment.

DUTCH BULBS FOR SPRING DISPLAY OUT-OF-DOORS: A. B. Narcissus, Crocus, Chionodoxa, and Scillas, may be planted in September; Tulips and Hyacinths in October. You should ascertain from the nurseryman from whom the bulbs are purchased, for those varieties of the last two, that will bloom at the same time when planted at one time, or you will have gaps in the display. Depend mostly on single-flowered Hyacinths and double-flowered Tulips, these being more enduring than single-flowered, if not quite so showy. If the display is not for one short period, plant at intervals of a month or rather less, up to the end of the year. Ranunculus and Anemones may be planted in fine weather in February and onwards.

GARDENING PAPERS: M. W. Irish Farm, Forest, and Garden, published at 67, Middle Abbey Street, Dublin; Irish Farming World, devotes part of its pages to gardening, published by J. Macdonald, 39, Dame Street, Dublin; Farming World, published by J. Macdonald, 63, Princes Street, Edinburgh.

GRAPES: D. W., Rotherham. Your berries are affected with a disease, commonly known as "spot." It is caused by a fungus (Glæosporium laticolor), and has been known in this country for forty years. All that is yet known concerning the malady was described in our issue for May 6, 1890, accompanied by a figure of the fungus. The best and most natural cultivation is the only weapon to fight against this pest. Destroy by fire all affected berries.

HENBANE (HYOSCYAMUS NIGER): H. S. W. A widely distributed plant, grown for medicinal purposes; its dispersion being due probably to man's agency. To grow it, a warm spot and light sandy or gravelly soil should be selected. It might be sown in drills made 18 inches apart, the seeds being dropped at 15 inches apart, thinning these out to one, the strongest. Sow in the months of March or October. Keep the ground clean by hoeing. If grown in a small way, seeds might be sown in a cool frame in March, and the seedlings transplanted in May after due hardening. These would be probably early in maturing. It is a method that would suit your county (Yorkshire). For seed, try Jas. Carter & Co., High Holborn, W.C.

MAIDENHAIR: E. K. The black spots are the spore-cases of a fungus, Pilobolus, which will do no harm, though they look unsightly.

NAMES OF FRUITS: R. C. Apple, Duchess of Oldenburg.—R. N. Plums: 1, Victoria; 2, Bradshaw; 3, Nectarine; 4, Pond's Seedling; 5, Prince of Wales; 6, Magnum Bonum.

NAMES OF PLANTS: Scarboro'. Portulacca Gilliesii.—H. H. 1, Verbascum sp.; 2, Solidago canadensis; 3, Boconia cordata; 4, Spiræa Fortunei; 5, Lamium purpureum; 6, Euphorbia Lathyris; 7, Piptanthus nepalensis.—R. P. Hypericum Androsæmum.—J. D. 1, Polygonum persicaria; 2, Polygonum aviculare; 3, Sparganium angustifolium.—J. C. H. Lilium longiflorum.—J. S., Maidenhead. Salvia pratensis.—J. H. The Publisher has nothing to do with such matters; address the Editor. 1, Cyperus sp.; 2, Solidago virga aurea; 3, Spiræa sp.; 4, Campanula latifolia; 5, Spiræa filipendula; 6, Gentiana saponaria.—J. B., Wavertree. Cattleya Dowiana, and Lælia elegans Schilleriana.—E. M. C., Kingstown. Pholidota articulata.—A., Hoddon. Dendrobium Chrysanthum.—M. S. D. 1, Pyrus sambucifolia, the American variety of the Mountain Ash; 2, Crataegus Crus-galli; 3, Spiræa arifolia; 4, Amelanchier vulgaris; 5, Adiantum hispidulum.—A. B. C. 1, Spiræa Thunbergii; 2, Olearia Haastii; 3, Pyrethrum, garden variety; 4, Harpalium rigidum; 5, Chelone obliqua; 6, Potentilla, garden variety; 7, Spiræa Fortunei.

PELARGONIUMS: Subscriber. Pyramidal zonals are obtained by growing plants for several years' Good one-year-old plants, cut back about August, should be kept moderately dry at the roots until they begin to break, when they may be shaken out and potted into smaller pots to be treated afterwards as young plants, and potted on when they require it; all that is then required is to see to

the training, and keep them well supplied with nutriment, and partially resting them each winter. The Ivy-leaved varieties may be raised from cuttings in the spring, which should be then grown on throughout the summer, and wintered in a temperature of about 45°. The following season they should be pretty large specimens, and if attention has been paid to the training, they will be good pyramids. The culture of *Heliotropes* is precisely similar to that of the Ivy-leaved varieties of *Pelargoniums*, and they are nearly sure to bloom during the London season.

PICOTEE BED: *Brighton.* The position of the bed should be sunny and unshaded by trees and tall buildings, and it is better to have a hedge or wall as a protection on the east and north sides. It should consist of loam well enriched with some rotted manure from the cow-house, or old hot-bed stuff. Nothing rank, fresh, or strong, such as pigs, dogs, chickens, or pigeons' dung should be used, unless it be two or three year old. The bed should be deeply stirred, and if the soil is of a rather close texture, sharp sand, or the scrapings of gravelly or flinty roads should be mixed with it. It should have a slope 2 inches to the foot run, and be slightly raised above the surrounding soil. Prepare the bed in September if for autumn planting, allowing time for the soil to settle somewhat; and stir the surface with a hoe or fork, several times at intervals of a week. Planting may be performed in October after levelling and treading the soil evenly. In smoky towns and northern counties, growers often winter their plants in cold frames, and plant out at the end of winter; but this would not be needed in a seaside place. Plant from 12 to 15 inches apart, according to strength of varieties.

PRUNING PYRAMID APPLE, PEAR, AND PLUM TREES: *Beta.* The new gardener is doing the proper thing—the continual summer-pinching of shoots has fallen into disuse generally, as it was found to soon cripple the trees. Let the gardener keep the branches thin, that is, permit no crowding; practice a certain amount of shortening back in July, and closer pruning in the winter, of course observing, when doing this, the various peculiarities of varieties—some producing their fruit on long, some on short shoots; some having weak growth, needing harder cutting-in at the winter pruning; some being erect in habit, easily getting crowded in the centre; whilst others are inclined to make spreading heads, or are of a pendulous habit. The extension method is, doubtless, the best, because it is the most natural to the trees, but it demands a good deal of room, and suits bushes and standards better than pyramids.

QUERCUS: *T. B. S.* *Quercus robur* var. *sessilifolius*.

SEASIDE PLANTING: *Novice.* Front lines, Tamarisk, Blackthorn, Travellers' Joy, as a binding together plant; behind these plant Sycamore, Crab, Elder, Austrian Pine, and Pinus Pinaster; and farther inland, Scotch Pine, Oak, Beech, Abies Pinsapo, Abies cephalonica, and the Yew, a plant that does well on chalk, as do the two species of Abies named. With the amount of protection provided by the above, if planted in a belt of 100 yards wide, or two belts 100 yards apart, anything will grow.

RAINFALL OF 1892 IN THE MIDLANDS: *Nemo.* The rainfall has been below the normal for more than 12 months over the greater part of England. What the amount is that has fallen in the Midland districts is unknown to us. Enquire at the Meteorological Office, Victoria Street, Westminster.

SEEDLING CARNATION: *B. B.* In colour very beautiful, in size large, and form somewhat loose, in fragrance faint; but still, a desirable variety.

TOBACCO JUICE: *A. E. H.* The quantity will vary with the strength of the juice. Strong juice may be used at the rate of $\frac{1}{2}$ pint to the gallon of water, whilst another sample would allow of 1 pint being added. Test it for yourself.

COMMUNICATIONS RECEIVED.—W. Badger.—G. S., with thanks.—L. L. Brussels.—Professor Balfour.—A. E. S.—J. D. S., Baltimore.—J. C., Margate.—E. A.—D. T. F.—A. B. R.—J. E.—J. P. & Son.—B. L.—J. R. Puris.—F. V. D.—G. H.—W. C.—W. E. G.—J. McP., Trenton, New Jersey.—J. R., Paris.—Messrs. Sutton & Sons.—W. G. H.—J. D.—C. W. D.—G. W.—J. B.—H. J.—E. D. S. & Co.—H. J. V.—W. R.—A. P.—B. A.—F. V. D.—P. Barr & Sons.—F. W. R.—M. T.—C. Toope & Co.

PHOTOGRAPHS RECEIVED (with thanks).—J. V. D.—A. H. **SPECIMENS RECEIVED** (with thanks).—G. W., synchry of Apples.—G. P., Larix leptolepis.—G. S., Digitalis.—G. H., Hollington.

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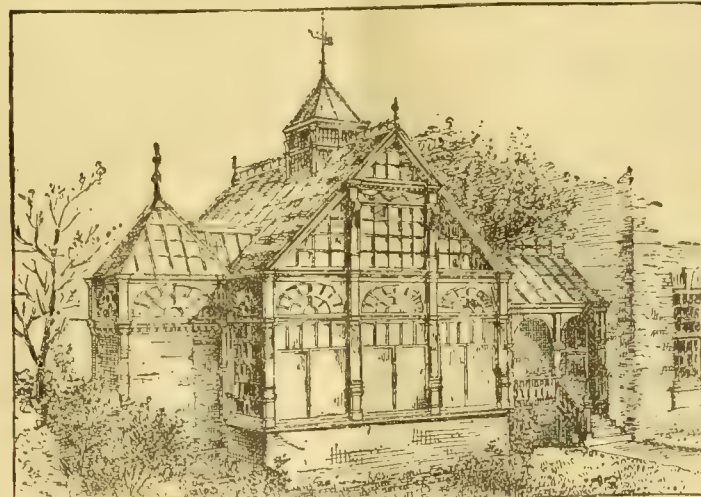
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	20x12	24x16	
	16x14	20x18	
	18x14	22x18	
	20x14	24x18	

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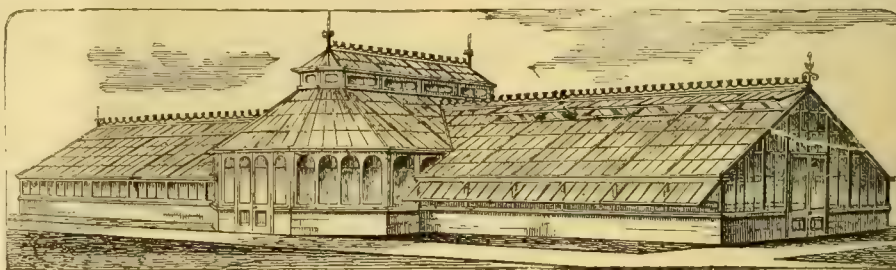
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1892.

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GARDENING APPOINTMENTS.

MR. M. E. MILLS, Gardener to the late Baroness HEATH, as Gardener to F. LLOYD, Esq., Coombe House, near Croydon Surrey.

MR. SAMUEL REECE, for the past thirteen years Gardener to ROBERT WHYTE, Esq., Pentland House, Lee, S.E., under whose care the yellow Arum Lily (Calla Pentlandii) first grew and flowered in this country, has been appointed Gardener to W. J. JARRATT, Esq., Hatton House, Westgate-on-Sea, Isle of Thanet.

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GARDENER (HEAD WORKING, or good SINGLE-HANDED).—Age 36, married; thoroughly practical in all branches. Life experience. Good character.—TUTT, 3, Beechcroft Road, Upper Tooting, S.W.

GARDENER (HEAD WORKING).—Practical in all branches. Total abstainer. Good references. Wife first-class Laundress, if required.—J. C., Ganwicke Corner, near Barnet, Middlesex.

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GARDENER (SINGLE-HANDED, or SECOND).—Age 29; young Man used to Flowers, Tomatos, Cucumbers, Melons. Twelve years' good reference.—C. ELMS, 70, South Wallington, Fareham, Hants.

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GARDENER (SINGLE-HANDED, or otherwise).—Age 24; good all-round hand. Eleven years' experience. Excellent character.—F. W., 43, Park Road, Hampstead, N.W.

GARDENER (SINGLE-HANDED, or with help).—Age 25.—Understands Wall Fruit, Kitchen and Flower Garden, Vinery, and Framework.—J. B., 8, Amyand Cottages, Amyand Park Road, Twickenham.

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GARDENER (SECOND), Inside and Out, or good SINGLE-HANDED.—Age 26, single; eight years' excellent character. Abstainer. Disengaged.—J. WOOD, Brook Cottage, Balcombe, Sussex.

GARDENER (SECOND), Inside, or Inside and Out, where three or four are kept.—Age 23, single; nine years' experience. Good character from last employer. Kent preferred.—A. C. ABBOTT, Windmill House, Ardeleigh, Essex.

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FOREMAN, or DEPARTMENTAL, in a good Establishment.—Mr. D. LINDSAY can with confidence recommend his Foreman, Joseph Pybus, as above. Twelve years' experience in first-class places.—Newton Hall Gardens, Stockfield-on-Tyne

To Nurserymen.

FOREMAN (WORKING).—Twenty years' experience in Growing Fruits and Roses. Practical exhibitor. Good in Conifers, Trees, and Shrubs.—W., 22, Beulah Road, Sutton, Surrey.

FOREMAN, in the Houses, in a good Establishment.—Age 25; ten years' experience. Good references.—T. RAE, Sefton Park, Stoke Poges, Bucks.

FOREMAN PROPAGATOR, or GROWER.—Well up in Grapes, Tomatos, Cucumbers, Palms, Ferns, and the general Pot and Cut Market Stuff.—GROWER, 17, Brayard Road, Peckham, S.E.

To Nurserymen.

FOREMAN, or GROWER.—Age 28; well up in Plants, Cut Flowers, Tomatos, Wreaths, Crosses, &c. Excellent reference.—B. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOREMAN, or GROWER.—Age 38; well up in Cut Flowers, Fruit, Plants, Tomatos, Cucumbers, Nursery or Market Garden.—FOREMAN, 60, Sheep Street, Northampton.

FOREMAN, in the Houses.—Married, no family. Ten years' experience in growing Orchids, Fruit, Stove and Greenhouse Plants, &c.—G. MARTIN, Redleaf Gardens, Penshurst, Kent.

JOURNEYMAN, in the Houses.—Age 22. Eight years' experience; good references.—W. COLLYER, Fetcham, Leatherhead, Surrey.

JOURNEYMAN, in the Houses.—Age 19; a little Outside Work not objected to. Three years' experience in a good establishment. Good character.—F. PECKOVER, Wardington, Banbury.

JOURNEYMAN, young Man (age 20) English.—Five years' Inside and Out; good references.—WILLIAM NEVARD, 5, Balmoral Terrace, Aberdeen.

JOURNEYMAN, Inside, under a Foreman.—Age 22; used to Table Decoration. Three years' good character.—F. F., The Gardens, West Stoke House, Chichester.

JOURNEYMAN, Inside, or Inside and Out; age 19.—Mr. GRIMES, Gardener to Lord Rodney, Berlington Hall, Leominster, Herefordshire, wishes to recommend a young man as above; three years' experience.

JOURNEYMAN, in the Houses, in a good Establishment; or SECOND, where four or five are kept.—Age 24. Bothy preferred. Excellent character.—W. A., Little Linford, Newport Pagnell, Bucks.

JOURNEYMAN, in the Houses.—Age 19; bothy preferred.—Mr. C. MARSHALL, Head Gardener, Frognaal, Foot's Cray, Kent, will be pleased to recommend W. A., as above.

JOURNEYMAN, Inside or Out.—Age 23; active and willing; good references. Leaving through death of employer.—C. PATTERSON, The Oaks Gardens, Carshalton, Surrey.

JOURNEYMAN, age 20, seeks situation, Inside or Out. Leaving present situation through a death. Can be well recommended.—A. LAMBERT, The Oaks Gardens, Carshalton, Surrey.

JOURNEYMAN, in the Houses; age 22.—Mr. C. BENNETT, F.R.H.S., can well recommend George Whyman as above. Seven years' experience.—GEO. WHYMAN, The Gardens, Harefield Grove, Uxbridge, Middlesex.

JOURNEYMAN, Inside under a Foreman.—Age 23; ten years' general experience. Life abstainer. Good references.—H. H. GOODYEAR, St. Ives, Bingley, Yorks.

IMPROVER.—H. LAWRENCE, Jun., of 50, Linsdowne Gardens, South Lambeth, S.W., wishes to engage with any Lady or Gentleman for Inside Work. A short distance from London preferred.

TO GARDENERS.—Situation wanted, in a Gentleman's Garden, by a strong youth (age 17). Good character. Twelve months' experience.—WILLIAM MEE, Cromford Hill, Cromford, Derbyshire.

TO NURSERYMEN and FLORISTS.—Situation wanted, by a young man, age 24; well up in Growing General Stuff for Shop and Market.—J. L., 1, Albert Villa, Bexley, Kent.

TO NURSERYMEN.—Wanted a permanent Situation near London, by a young Man (age 24), experienced in Soft-wooded Stuffs, Wreaths, &c. Please state wages.—A., Kempsholt Gardens, Basingstoke.

TO NURSERYMEN and FLORISTS.—ADVERTISER seeks a situation as Grower of Soft-wooded Stuff, Palms, Ferns, &c. Well experienced. Near London preferred.—G. BALDWIN, Hertingfordbury Road, Hertford.

TO SEEDSMEN.—ASSISTANT in a Retail Seed Business; age 18; three years' experience in a good London firm. Good references.—W. T., 1, Derby Villas, Richmond Road, Mortlake.

SHOPMAN, or MANAGER.—Age 31, married; seventeen years' practical experience in Seeds, Bulbs, Plants and Flowers. Good testimonials.—C. STONE, Richmond Cottage, Catherine Street, Brampton, Chesterfield.

SHOPMAN, or MANAGER.—Age 31; thirteen years' experience in all branches of the Seed Trade, Bulbs, &c. Disengaged as soon as suited. Good references.—SEED, Riverford House, Biggleswade.

Seed Trade.

SHOPMAN.—Age 30; fourteen years' practical experience, desires re-engagement.—D. STRACHAN, 42, Oak Street, Abingdon.

SHOPMAN.—Age 25; upwards of ten years' experience in all branches of the Trade. Good references.—B. J., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SEED TRADE.—Situation wanted as SHOPMAN age 24.—Thorough knowledge of German.—F., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

CLERK.—Age 23; experienced; seeks situation in a Nursery. The Provincies not objected to. Good reference from present employer.—NURSERY, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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Now Ready, in Cloth, 11s. 6d., "The Gardeners' Chronicle," Vol. XI., Third Series, January to June, 1892. The PUBLISHER, 41, Wellington Street, Strand, W.C.

Trade Offer of Large Palms.

W. ICETON has a large Stock of the leading kinds of Decorative PALMS from 6 to 25 feet high, fit for Conservatory and House Decorations; Dracenas, Bamboos, and Foliage Plants. Lowest Prices quoted on application. W. ICETON, Putney, S.W.

LOVEL'S YORKSHIRE STRAWBERRIES. Well-rooted runners of Thury, Paxton, President, and others: 25, 1s.; 100, 4s. 6d.; 1000, 35s.; all carriage paid. LIST free. W. LOVEL AND SON, Strawberry Growers, Driffield.

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SUTTON'S BULBS—THE BEST OF THE SEASON.

Henry A. Lee, Esq., Rathgar, says:—"The Narcissi, Tulips, and Hyacinths, have been greatly admired. I have had a display of beautiful flowers from before Christmas until now (February 23).

SUTTON'S HYACINTHS, TULIPS, CROCUS, &c., for Early Forcing.—Sutton's complete Collection of Bulbs for Early Forcing. Price, 10s. 6d., £1 1s., £1 11s. 6d., and £2 2s., carriage free.

SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

EURYCLES AUSTRALASICA.

Strong flowering bulbs of this charming white flower can now be supplied, 5s. each. B. S. WILLIAMS AND SON, Victoria and Paradise Nurseries, Upper Holloway, N.

FOR Sale, about 650 Prize Strain TUBEROUS BEGONIAS, 3-yr. bulbs; 100 CHRYSANTHEMUMS, and 1000 ECHEVERIAS GLAUCA. State price per 100 to GARDENER, Stockgrove, Leighton Buzzard, Beds.

CYCLAMEN SEED.—Colours saved distinct.

W. D. CLARKE has a small quantity of the above first-class Seed to offer to the Trade. Price on application to—W. D. CLARKE, Florist, Hanworth Road, Hounslow.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

Fruit Trees a Specialty.

STRAWBERRIES, one of the largest and best collections in the Trade, including all the best of the New and Old Varieties. Full Descriptive Catalogue on application.

FRUIT TREES of all kinds, a very large stock. JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

LAXTON'S STRAWBERRIES.—Sensation, very large, fine flavour; Scarlet Queen, first early, best new; Noble, Competitor, Latest of All, Commander, White Knight, J. Ruskin, Waterloo, and all best sorts. Lists free. T. LAXTON, Seed Grower, Bedford.

FIELDER'S WHITE AZALEA, well set with buds, in 48's; Old Crimson CLOVE, and Gloire de Nancy CARNATIONS, strong-rooted layers. Cheap. C. JOHNSON AND CO., The Nurseries, Hampton.

JOHN COLLINGRIDGE is open to receive Consignments of Choice CUT FLOWERS for SALE, on COMMISSION. Highest references. New Flower Market, and 5, Russell Court, Strand, W.C.

MESSRS. SQUELCH AND WOOD, FRUIT SALESMEN, North Row, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of GRAPES, TOMATOS, CUCUMBERS, and all kinds of HOT-HOUSE PRODUCE. Our business connections being amongst the best houses in London, we are in a position to secure the highest prices for all choice goods. Account Sales forwarded daily and cheques weekly, or daily if required. Empties and labels supplied. Reference, London and County Bank, Covent Garden Branch.

WANTED, AT ONCE, CUTTINGS of the following GERANIUMS:—Marshall MacMahon, Mrs. Pollock, Freak of Nature, Flower of Spring, Harry Thover, Henry Jacoby, Surprise, and West Brighton Gem. State price per 100; also for Six Stock Plants of IRISINE LINDENI. JAMES HUBBARD, Mountfield, Faversham.

WANTED, GERANIUM CUTTINGS.—H. Jacoby, Vesuvius, and first-class Salmons. State price per 100 or 1000; also price for GENISTAS, in 48's. J. H. M., 5, Vandy Street, E.C.

WANTED, GERANIUM CUTTINGS.—Vesuvius, H. Jacoby, John Gibbons, Mrs. Pollock, Rev. J. Atkinson, &c.—State price per 100, cash, to—THE ORCHARD CO., Scotby, near Carlisle.

WANTED, CUTTINGS of Jacoby, Gibbons, and Queen of Belgians, large or small quantity. F. HOLLOCK, Florist, &c., South Streatham.

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WHITE ROMAN HYACINTHS.—Price 15s. and 21s. per 100; 2s. and 3s. per dozen. PAPER-WHITE NARCISS.—Price 6s. per 100; 1s. per dozen. DOUBLE ROMAN NARCISS.—Price 6s. per 100; 1s. per doz. BERMUDA LILIES.—Price 10s. 6d. per dozen; 1s. each. All carriage free. Special quotations for quantities.

For full particulars see CARTERS' ILLUSTRATED CATALOGUE of BULBS, ROSES, and FRUIT TREES, Gratis and Post Free. 237 and 238, HIGH HOLBORN, LONDON, W.C.

CARNATION GERMANIA.—Strong plants, in 60's, ready for shifting on. Cash price per dozen, 100, or 1000.—D. ANDERSON, Teddington, S.W.

DOUBLE WHITE PRIMULAS, in 3-in. pots, ready for 48's, 5s. per doz., 35s. per 100; in 48's, 9s. per doz. For Cash only.—G. BENNETT, Florist, Hanwell, W.

GOLDEN EUONYMUS, good bushy stuff, for Potting. Splendid Colour. H. H. MOORE, Chichester.

FERNS, from Store Boxes.—Strong, clean stuff, fit for Single Pots—Pteris cristata, Pteris major, and Lomaria gibbs, 3s. 6d. per 100. Sample, not less than 100 sent; cash with order.—ADCOCK, Rokeby Road, Brockley, S.E.

NARCISSUS, Double White, splendid strain, 20s. per 1000, on rail. Sample 100 free by post for 3s. 6d., 50 for 2s. Cash with order.—J. J. CLARK, Goldstone, Brighton.

JOHN STANDISH AND CO. offer LOMARIA GIBBA, in 48-pots, strong plants, at 50s. per 100; also Fine Young Plants, in thumb-pots, at 10s. per 100; 90s. per 1000. Royal Nurseries, Ascot, Berks.

NOTICE.—Just arrived from Holland, a first-class Collection of DUTCH BULBS, of every description, all on view every day at the undersigned address—Mr. T. B. SERNE, 43, Wellington Street, Camden Town, N.W.

CAMPERNELLE JONQUILS.—Samples of 100 Bulbs, free by post on the receipt of 3s. Price to the Trade on application to T. GELL, Bulb Grower, St. Lawrence, Ventnor, Isle of Wight.

Strawberries. A FINE COLLECTION of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free. THOMAS RIVERS AND SON, Sawbridgeworth.

Kindly Note. CACTUS and DECORATIVE DAHLIAS. GEORGE PHIPPEN would be pleased to give information to those having New Varieties or Seedlings of the above. If a few specimen flowers (packed in damp Moss), were sent him he would gladly compare them with his collection of over 120 varieties, and report to the sender free of any charge whatever. The Nurseries, Reading, Berks.

Boulton & Paul's Outdoor Requisites. BOULTON AND PAUL MANUFACTURERS, NORWICH. Every Requisite for the Kennel and Poultry Yard, Aviaries, Pigeon Cotes, Pheasantries. Requisites for the Garden, Park, Pleasure Grounds. Wire Netting for Game and Sheep. Iron and Wire Fencing, Gates, &c. Send for Illustrated CATALOGUES, post-free, on application.

J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 10, Victoria Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers,

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., **EVERY DAY**, at 12 o'clock, large consignments of first-class **HYACINTHS, TULIPS, CROCUS, NARCISUS**, and other **BULB** from Holland. 12 lots are sold every week. Lotted to suit the Trade and Private Buyers. On view morning of Sale, and Catalogues had.

Upper Edmonton.

About 5 minutes' walk from Angel Road, and 8 minutes from Silver Street Railway Stations. **SEVENTH GREAT ANNUAL TRADE SALE** of about 80,000 **GREENHOUSE** and other **PLANTS**.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May to **SELL BY AUCTION**, on the Premises, The Dyson's Lane Nurseries, Upper Edmonton, on **MONDAY NEXT**, September 12, at 11 o'clock punctually, owing to the large number of lots, 80,000 **STOVE** and **GREENHOUSE PLANTS**, remarkably well grown, and in the best possible condition, including 30,000 **FERNS**, all the most useful market sorts, and many novelties. 10,000 **TREE CARNATIONS**, including Mrs. Moore, Duke of Fife, Florain, Winter Cheer, Mrs. A. Hemsley (new), M. Carlé A. Alegatierre, a fine lot of old Crimson Clove.

2,000 **TEA ROSES** in **POTS**, extra strong, Maréchal Niel, Gloire de Dijon, W. A. Richardson, and climbing Niphetos, with well-ripened growths 12 to 15 feet long, and others.

10,000 **BOUVDIAS**, including Purity (pure white), President Cleveland, Mrs. Robt. Green, Candidissima, and all the best double and single varieties.

CROTONS, LAPAGERIA ALBA, KENTIAS, AMPELOPSIS VELTCHII, CLEMATIS, IVIES,

VINES (strong canes) **GROS COLMAR** and **ALICANTE**. 1,000 **FICUS ELASTICA VARIETATA**, well-grown plants.

5,000 young **PALMS**. 5,000 **GENISTAS**, fine bushy stuff.

8,000 do., smaller, for growing on. 3,000 well-berried **SOLANUMS**.

CYCLAMENS, double white **PRIMULAS, CAMELLIAS**, **AZALEAS**, forward in bud for early forcing; and a great variety of other **PLANTS**.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, G.E.R. **TWENTY-FOURTH ANNUAL TRADE SALE** of **STOVE** and **GREENHOUSE PLANTS**.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller, to **SELL BY AUCTION**, on the Premises, The Brimsdown Nursery, Green Street, Enfield Highway, N., on **THURSDAY NEXT**, September 15, at 11 o'clock punctually, there being upwards of 1300 lots to sell in one day, about

60,000 **STOVE** and **GREENHOUSE PLANTS**, remarkably well-grown, and in first-rate condition, including, 20,000 **WINTER-FLOWERING HEATHS**, including *hyemalis, gracilis, Cavendishii, perspicua, erecta, hybrida*, &c.

3000 **TREE** and other **CARNATIONS**, including Mrs. Moore, Duke of Fife, Duke of Clarence, Germania, &c., &c.

600 **CARNATIONS**, Winter Cheer, best new scarlet. 1000 **TEA ROSES**, in pots, consisting of The Bride, Niphetos, C. Mermet, Maréchal Niel, Climbing Niphetos, Gloire de Dijon, &c.

5000 **Solanums**, exceptionally well berried. 500 **Crotons**, beautifully coloured. 5000 **Ferns**—*Adiantums, Polypodiums, Pteris, Lomarias*, &c. 1000 **Palms**, in variety. 1000 **zonal Geraniums**, new and leading varieties. 3000 **Bouvardias**, leading sorts. 2000 **Cyperus distans**. 1000 **Ampelopsis Veitchii**. 60 **Epacris** to name. 5000 **Small Ferns**.

5000 **Genista fragrans**. 5000 **Clematis Jackmanii, Ivies**, large quantities of *Ficus, Aspidistras, Anthuriums, Grevilleas, Poinsettias, Plumbagos, Callas, Aralias, Abutilons*, new *Coleus*, new hybrid *Crassulas*, &c.; also *Stove Climbers*, including *Dipladenas* in variety, *Clerodendrons, Bougainvilleas, Tacsonias*, &c.

May be Viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The whole of the Stock is in first-rate condition. The *Erics* and *Solanums* are unquestionably the finest lot offered at this Nursery for many years; the *Erics* being specially well set for flower, and the *Solanums* well berried.

Tuesday Next.

MESSRS. PROTHEROE AND MORRIS beg to announce that they will include in their **ORCHID SALE**, on **TUESDAY NEXT**, Sept. 13, a splendid consignment of **TREE FERNS**, including 14 grand trunks of *Dicksonia antarctica*, probably one of the finest lots ever sent over, ranging from 7 to 12 feet in length. Also *CYATHEA DEALBATA, MEULIARIS*, and *CUNNINGHAMII*; *DICKSONIA SQUARROSA*; 13 cases, containing 40,000 Seeds of *MACROZAMIA SPIRALIS*; a quantity of other *Ferns* in clumps and bundles, the whole received direct for unreserved Sale. On view morning of Sale, and Catalogues had.

Tuesday Next.

CATTLEYA AUREA TYPE, CATTLEYA GIGAS IMPERIALIS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and 213, Park Road, Clapham, S.W., to **SELL BY AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **TUESDAY NEXT**, September 13, at half-past 12 o'clock, an unusually healthy and fine consignment of **CATTLEYA GIGAS IMPERIALIS**, just to hand, *ex Para*, every plant is well-leaved, and we can say they are the best condition plants offered. Through a misunderstanding the plants were mixed by the paeons of our collector with *Cattleya aurea*; purchasers will therefore have a chance of picking their own fancy. Also a few special selected plants of our superb strain of **CATTLEYA AUREA**, for richness in colour they outstrip anything seen. The plants were collected from the same locality as those we had the two previous years, and which turned out such really marvellous varieties, amongst them *Cattleya Masaiana*; a small plant recently sold at Hock House, realised 95 guineas. We can recommend the above plants with every confidence as a good investment; also a small consignment of **ODONTOGLOSSUM ROEZZII**, and a few plants of the rare and beautiful **EPIDENORUM WALLISI**; also 100 lots of **CATTLEYA TRIANÆ**, imported plants; 100 lots **ESTABLISHED ORCHIDS** (another property).

On view morning of Sale, and Catalogues had.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of fine **WINTER-FLOWERING HEATHS**, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to **SELL BY AUCTION**, on the Premises, The Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on **WEDNESDAY NEXT**, September 14, at 11 o'clock precisely, in consequence of the large number of lots, a large quantity of—

WINTER-FLOWERING and other **PLANTS**, including—

20,000 *Erica hyemalis* 1,000 *Tree Carnations* 4,000 *Erica gracilis* 10,000 *Genista fragrans* 6,000 *Ampelopsis Veitchii* 1,000 *Epacris* [4 feet] 2,000 *Lapageria rosea superba* 6,000 *Cycamen persicum*, (Fraser's superb strain) 2,000 *Passiflora Constance* Elliott and Coruella 4,000 *Variegated* and other *Ivies* 10,000 *Clematis Jackmanii*, and other best named sorts 400 *Araucaria excelsa* 400 *Large-leaved Ceanothus* 200 *Lapageria alba*, from layers 500 *New scarlet Trumpet Honeysuckles* 1,000 *Hollyhocks* from named sorts with names 2,000 *Maréchal Niel*, *Gloire de Dijon*, 8 to 10 feet, *Niphetos*, *L'Idéal*, and other *Tea-scented* *Roses* in great variety 1,000 *Deutzia gracilis*, established in pots for earliest forcing 6,000 *Bouvardias*, including a lot of President Cleveland 5,000 *Solanums*, beautifully berried 500 *Ivy-leaved Geraniums*, best double kinds 500 *Grevillea robusta* 500 *Aralia Sieboldii* 200 *Tacsonia van Volxemii* 500 *Boronicas*, of sorts

And a great number of **ERICA CAVENDISHII, CAFFRA**, large-flowering **White JASMINES, ABUTILONS, PALMS**, and other **PLANTS**. Also a quantity of young **GENISTAS** and **HEATHS** for potting on.

The whole of the Stock is in the best condition, and ready for immediate Sale.

Hoe Street Station, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half hour.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Sidcup.

GREAT ANNUAL TRADE SALE, by order of Messrs. Gregory & Evans.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL BY AUCTION**, on the Premises, the Longlands' Park Nursery, Sidcup, Kent, about 1 mile from New Eltham Station, on **FRIDAY NEXT**, September 16, at 11 o'clock precisely, in consequence of the large number of lots,

20,000 **HEATHS**, including *Hyemalis gracilis, Ventrucosa* of sorts, *Cavendishii*, and *Hyemalis alba*.

1500 *Solanums*, well berried 1000 *W. A. Richardson* in 24-pots 1000 *Double Primulas* 1500 *Maréchal Niel* *Roses*, in 24's, fine plants 1000 *Perle du Jardin*, in 32-pots 500 *Safrano* 500 *Catherine Mermet*

Large quantity of other mixed plants. The whole will be found in first-class condition.

May be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Expiration of Lease.

GREAT CLEARANCE SALE of **CHOICE ORCHIDS**, by order of Messrs. Charlesworth, Shuttleworth & Co., to be held on the Premises, 213, Park Road, Clapham, S.W., on **TUESDAY, SEPTEMBER 20**, and two following days.

5000 **ODONTOGLOSSUM CRISPUM** established, 2000 " " semi-established, 5000 " " various species. **CHOICE CYPRIPEDIUMS**, rare **MASDEVALLIAS** and **PLEUROTHALLIS**, **CATTLEYAS**, **LELIAS**, **ONCIDIUMS**, and others too numerous to mention in an advertisement. The whole stock is in fine healthy condition, and will be **SOLD** by

MESSRS. PROTHEROE AND MORRIS. On view three days prior to Sale, and Catalogues had.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE to commence at 11 o'clock, there being upwards of 1300 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Son, to **SELL BY AUCTION**, on the Premises, the Burnt Ash Lane Nurseries, Lee, Kent, S.E., adjoining the Lee Railway Station, on **TUESDAY NEXT**, September 13, at 11 o'clock precisely, without reserve, a remarkably well-grown stock of **WINTER-BLOOMING HEATHS**, and other **STOVE** and **GREENHOUSE PLANTS**, consisting of:—

20,000 *Erica Hyemalis* 5,000 *Genistas* 5,000 " *Gracilis* 5,000 *Solanum capsicastrum* (well berried) 2,000 " *Cavendishii* 1,000 *Adiantum cuneatum* 500 " *Coccinea minor* 500 *Lomaria g. bba* 600 " *Caffra* 800 *Tea Rose* (in pots) 1,000 *Ampelopsis Veitchii* 2,000 *Bouvardias* (of sorts) 1,500 *Epacris* (to name) 1,000 *Palms* (of sorts) 1,000 *Boronia megastigma* and others 1,000 *Cyclamen-Persicum* 500 *Crotons* 1,000 *Grevillea robusta* 500 *Clematis Jackmannii*

with a large quantity of **Young ERICA HYEMALIS, E. CAVENDISHII, E. GRACILIS**, and others; also **GENISTAS, EPACRIS**, of sorts, all in 60-pots, for growing on.

The Stock may now be viewed. Catalogues may be had on the premises; at the Seed Warehouse, 51, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

East Grinstead.—Without Reserve.

THIRD ANNUAL TRADE SALE of well-grown **STOVE** and **GREENHOUSE PLANTS**, fit for immediate Sale, by order of Messrs. Roberts Brothers.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL BY AUCTION**, on the Premises, the Moat Nursery, East Grinstead, close to the Railway Station, on **TUESDAY, September 20**, at half-past 11 o'clock precisely, the following unusually **WELL-GROWN STOCK**:—

200 *Specimen Eucharis*, a grand lot of clean plants 50 *Maréchal Niel* *Roses*, rods 8 to 10 feet long 500 *Genista fragrans* 600 *Solanum capsicastrum* 3000 *Roses* in pots 800 *Mixed Ferns* 1500 *Adiantum cuneatum*, in 48-pots 2300 *Bouvardias* of sorts, in 48-pots 350 *Grevillea robusta* 500 *Cyperus* 300 *Euphorbia jacquinteflora*

Asparagus tenuis-simus, *Allamandas*, *Stephanotis*, *Gardenias*, *Raspallagras*, *Cyclamen*, *Begonias* of sorts, *Palms* of sorts, *Callas*, *Violets*, *Spiræas*, &c.—in all, 21,000 plants.

May be viewed two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.—Orchids.

By order of Mr. F. SANDER.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at their Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT**, September 19, at half-past 12 o'clock. On view morning of Sale, and Catalogues had.

Maldenhead.

UNRESERVED CLEARANCE SALE of **SURPLUS GREENHOUSE PLANTS**.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. R. Owen to **SELL BY AUCTION**, on the Premises, The Floral Nurseries, Castle Hill, Maldenhead, on **WEDNESDAY**, September 21, at 12 o'clock precisely, the **SURPLUS STOCK** of well-grown **STOVE** and **GREENHOUSE PLANTS**.

Monday and Thursday, September 19 and 22.

PLANTS from BELGIUM.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at their Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY**, September 19, and **THURSDAY**, September 22, at 12 o'clock precisely, consignments of **CAMELLIAS, AZALEAS, PALMS**, and other **PLANTS**, from well-known Nurseries in Belgium. On view morning of Sale, and Catalogues had.

Maida Vale.—Preliminary Notice.

IMPORTANT SALE of about 3,000 **ORCHIDS**, 3000 **PALMS**, and large quantities of other **PLANTS**, by order of Messrs. Hooper & Company, Limited.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION** as above, on the Premises, the Pine-apple Nursery, Maida Vale, N.W., on **WEDNESDAY** and **THURSDAY**, September 28 and 29. Full particulars will appear.

Worcester.

HIGHLY IMPORTANT UNRESERVED SALE of about 20 Acres of **NURSERY STOCK**, by order of Messrs. Richard Smith & Co., in consequence of a portion of their land in the City boundary being required for Building purposes.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to **SELL BY AUCTION**, on the Premises, the Saint John's Nurseries, Worcester, on **MONDAY**, October 17, and four **FOLLOWING DAYS**, about 10 acres of unusually well-grown **NURSERY STOCK**.

Amongst the principal items may be mentioned 25,000 **STANDARD** and **PYRAMID ORNAMENTAL TREES**, in great variety, from 4 to 18 feet; 12,000 specimen **CONFERTS** and **EVERGREENS**, from 1½ to 12 feet; 2500 **gold-n** *Yews*, grand plants; 1600 **Standard** and **Pyramid gold**, silver, and green **HOLLIES**; a magnificent lot of **CLEMATIS**, in splendid variety, including 2000 *Clematis Jackmannii*, and others. Detailed particulars will appear in future announcements.

EXPIRATION OF LEASE.**GREAT CLEARANCE SALE OF CHOICE ORCHIDS,**

BY ORDER OF

MESSRS. CHARLESWORTH, SHUTTLEWORTH, & CO.,

TO BE HELD ON THE PREMISES, 213, PARK ROAD, CLAPHAM, S.W., on
TUESDAY, SEPTEMBER 20, and Two Following Days.

5000 ODONTOGLOSSUM CRISPUM, Established.
2000 " " Semi-established.
5000 " " Various Species.

Choice CYPRIPEDIUMS, rare MASDEVALLIAS and PLEUROTHALLIS, CATTLEYAS, LÆLIAS, ONCIDIUMS, and others too numerous to mention in an advertisement. The whole Stock is in fine healthy condition, and will be SOLD by

Messrs. PROTHEROE & MORRIS. On View Three Days prior to Sale, and Catalogues had.

Heaton Norris, near Manchester.

GREAT CLEARANCE SALE OF NURSERY STOCK by order of Messrs. G. and W. Yates, in consequence of Dissolution of Partnership.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. G. and W. Yates, who are Dissolving Partnership and relinquishing this branch of their business, to SELL by AUCTION on the Premises, the Green Lane Nurseries, Heaton Norris, near Manchester, 15 minutes walk from Heaton Norris Station, on MONDAY, October 3, and following days, Without Reserve, the whole of the well-grown NURSERY STOCK, comprising about 10 acres, including a splendid collection of named and hybrid Rhododendrons, a large stock of exhibition varieties; immense quantities of Hollies for hedges, and half-specimen border varieties, Ornamental and Fruit Trees, (Quick and Privet. Also the whole of the Glass Erections and Greenhouse Plants.

Further Particulars will appear.
N.B.—The LAND, about 10 acres, TO BE LET, rent £3 per acre. The incoming tenant would have the opportunity of purchasing at the sale such stock as he might require at Auction prices. The Nurseries are only 6 miles from Manchester, and there is a good opening for anyone wishing to embark into the nursery business.

Monday, Wednesday, Thursday, and Saturday Next.
GRAND IMPORTATIONS OF DUTCH BULBS,
LILiums, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, WEDNESDAY, THURSDAY, and SATURDAY next, September 12, 14, 15, and 17, at half-past 12 o'clock precisely, grand importations of BULBS from several of the most renowned growers in Holland, including a very choice assortment, specially suited for large and small buyers, 20,000 Early White ROMAN HYACINTHS and NARCISSUS from France, 20,000 LILIUM HARRISII from Bermuda, 20,000 LILIUM CANDIDUM, &c.

On view mornings of Sale and Catalogues had.
N.B.—None but good and reliable Bulbs will be offered.

Owthorpe, Bournemouth.

SALE OF 600 HEALTHY ORCHIDS, by Order of Major-General Hutchinson.

MESSRS. ATKEY AND ROKER will SELL by AUCTION on the Premises, on FRIDAY, Sept. 16, at 11 a.m., 600 ORCHIDS, including Cattleya Dowiana aurea, maxima, &c.; Cypripedium Chamberlainianum, and Dendrobium M'Arthurii, Ainsworthii, &c.; Lælia purpurata, in two grand plants; and Phalenopsis.

On view morning of Sale. Catalogues of the Auctioneers, Bank Chambers, Bournemouth.

Expiration of Lease.—Colehill Nursery, Colehill Lane, Munster Road, Fulham, S.W.

MESSRS. JNO. W. MORLEY AND LETTS will SELL by AUCTION, on the Premises as above, on TUESDAY NEXT, September 13, at 1 o'clock precisely, the GREENHOUSES, NURSERY STOCK and PLANTS, BOILERS, HOT-WATER PIPING, Eucalyptus and Ives in variety, Rose-scented Paony, Guelder Rose, Thorns, Syringa, Lilacs, Wistaria, Specimen Hollies, Jasmine, Begonia, large Palms and other plants, &c., in great variety; about 300 Lights, a quantity of Hand-lights, large heap of Manure, Vans, Cart, Barrows, Ladders, and Effects.

On view day prior and morning of Sale. Catalogues on the Premises; or of the Auctioneers, 185, Earl's Court Road, S.W.

Knowle, Warwickshire.**PEREMPTORY SALE.**

MR. THOMAS B. JAMES has received instructions from Edwin Jaques, Esq. (who is removing to Leamington), to SELL by AUCTION, without reserve, TO-MORROW, SATURDAY, September 10, at 2 o'clock in the afternoon, on the Premises, The Dorrige, Knowle (close to Knowle Railway Station, G.W.R., main line), his ENTIRE COLLECTION OF ORCHIDS, STOVE and GREENHOUSE and other PLANTS; also the SURPLUS OUTSIDE EFFECTS, including Lawn-mowing Machines, Garden Rollers, Cucumber Frames, Garden Seats, Iron Hurdles, Cow-shed, Phaeton, &c. Catalogues at place of Sale, and of the Auctioneer, Birmingham.

Dutch and other Bulbs.

MR. THOMAS B. JAMES (many years with Protheroe & Morris) holds SALES at his Great Rooms, Bull Ring, Birmingham, every TUESDAY at half-past 11 o'clock, of HYACINTHS, TULIPS, CROCUS, NARCISSUS, ROMANS, LILIUM HARRISII, L. CANDIDUM, and other BULBS.

No rubbish included. Catalogues post-free.

Peremptory Sale.**KNOWLE, WARWICKSHIRE.**

MR. THOMAS B. JAMES has received instructions from Edwin Jaques, Esq., to SELL by AUCTION, without the least reserve, TO-MORROW, SATURDAY, September 10, at 2 o'clock in the afternoon, his ENTIRE COLLECTION OF ORCHIDS, STOVE and GREENHOUSE PLANTS, &c. Also the SURPLUS OUTSIDE EFFECTS, comprising Lawn Mowers, Garden Rollers, and Rustic Garden Seats.

WANTED, TO RENT, a large GARDEN with GLASS, or small compact Nursery, with good dwelling-house.—HORTUS, 25, Brook Street, Kennington Road, S.E.

FREEHOLD LAND near Horsell, Woking, FOR SALE, in One or Three Lots. Over 100 Acres, 18 being meadow, in good cultivation, suitable for Nurseries, Orchards, Dairy and Poultry farms. Good road frontage.—Mr. FORBES, 5, Water Lane, Mark Lane.

SMALL NURSERY and SEED BUSINESS, in fashionable S.W. suburb. Principally Jobbing Work. Could easily be greatly increased. Stock and goodwill, all at £45. Immediate disposal imperative through illness.—A. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, a compact, attractive, old-established NURSERY, SEEDSMEN, and FLORISTS' BUSINESS (including Retail Shop); several Greenhouses, comprising 4000 square feet of glass, well-heated, &c. Magnificent opportunity. Only Nursery in seaside town of 40,000 inhabitants. Within easy run of London.—For full particulars apply to L. M. N., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Essex—12 miles from London.

TO CUCUMBER and TOMATO GROWERS.

TO BE LET, Three Acres of LAND, and good RESIDENCE; 1500 feet of Glass erected by present tenant, who has expended about £1900. The whole to be sold at a great sacrifice.

Particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—Messrs. R. SILBERRAD and SON, 25, Savage Gardens, Crutched Friars, E.C.

N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

HAVE AN

IMMENSE STOCK of ORCHIDS,

All in the finest health and condition,
And they are constantly receiving importations from various parts of the world.

The Company earnestly request the inspection of their Stock by intending Purchasers.

New, Descriptive, and Priced CATALOGUES post-free on application to the Company.

**THE VINEYARD AND NURSERIES,
CARSTON, NEAR LIVERPOOL.**

EXHIBITION.

THE BRISTOL CHRYSANTHEMUM and SPRING SHOW SOCIETY.

SCHEDULE of PRIZES for Exhibition on November 16 and 17, is now ready, and may be had from the Secretary.

All Entries must be in by Saturday, November 12.

EDWIN G. COOPER,

Oakwood, Mervyn Road, Bishopston, Bristol.

FOR ORCHIDS and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

JULES DE COCK, Nurseryman, Ledeberg, near Ghent, offers in best Plants, 3000 Aspidistra, green or var., at £3, £3, £10 per 100; 26,000 Azalea indica, at £4, £5, £4, £5 per 100; 2500 Ficus elastica, at £3 and £4 per 100. Satisfactory references, or cash with order, for unknown persons.

CHARLES RANN can undertake COMMISSIONS TO BUY or SELL ORCHIDS, or Take Charge or Superintend a Collection of all kinds of Orchids by the week or month. Thoroughly practical in their cultivation, and is one of the greatest prizetakers. Highest references and terms on application.

30, Hargreave Road, Upper Holloway, N.

150,000.—Special Offer of Kentias.

W. ICETON has a large quantity of the above to offer, very reasonable, at from £7 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well established, at £30 per 1000.

W. ICETON, Putney, S.W.

In Chancery.

FRUIT TREES.—80,000 very choicest kinds. Apples, Pears, Cherries, Peaches, Filberts, and Plums; 20,000 noble, tall, standard Victoria Plums and Damsons, 4 and 5-yr. old; and 2000 Rhododendrons and pretty Shrubs, Roses, and Hardy Flowers. In small or large quantities. Purchasers' selection. See CATALOGUES.—LAND STEWARD, Hon. GERTRUDE JONES, Churchfield, Cradley, near Malvern.

VIOLETS.—2000 Marie Louise, 500 Swanley White, 500 Czar, 12s. per 100; or would EXCHANGE for Malmesdon CARNATIONS.
J. ECCLESTONE, Canwell Gardens, Tamworth.

A Z A L E A I N D I C A. Fine healthy plants well set with buds. Only best sorts for early forcing, including Deutsche Perle, per dozen, 15s. to 21s. CAMELLIA Alba-plena and other fine plants, with buds, per dozen, 28s. to 30s. Apply to—Z. LION, Park Nursery, Stanmore, Middlesex.

DOUBLE NEAPOLITAN VIOLETS.—Magnificent, fine large clumps, just coming into flower. Will flower all the winter; 12s. per dozen; 2nd size, 9s. per dozen; good clumps, 6s. per dozen; Czar ditto, half above prices. Cash.—FOREMAN, Stanmore Park Gardens, Stanmore.

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It is absolutely necessary that all lovers of first-class gardening should pay our Nurseries a lengthy visit. Our many displays are splendid, and of the highest possible interest.

BEGONIAS (The Editor of *Gardeners' Chronicle* says he opines any further improvement in this flower).

The London Daily Press also says of our last exhibit in London, "Cannell's DOUBLE BEGONIAS rival anything we have seen."

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Medal awarded. CACTUS DAHLIAS, nothing touches them in the world. Our Stock of everything required for high-class Gardening and Prize Winners, particularly seeds, is of the first importance to those who intend to succeed.

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250,000 CARNATIONS { INCLUDING GERMANIA, MRS. REYNOLDS HOLE, AND
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SOUVENIR DE LA MALMAISON, Blush Variety; SOUVENIR DE LA MALMAISON, Crimson Variety.

TREE CARNATIONS, a magnificent lot in bud.

50,000 PINK HER MAJESTY.

LARGE STOCK OF CLEMATIS, in best varieties. ACRES OF SEAKALE.

AND ALSO MUCH OTHER VALUABLE STOCK.

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SANKEYS' famous GARDEN POTS
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Messrs. Dicksons, Limited, Chester, write:—"The Flower Pots you have so largely supplied us with are light, strong and well made, and in every respect highly satisfactory."
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L'HORTICULTURE INTERNATIONALE
 (LINDEN), Leopold Park, Brussels,

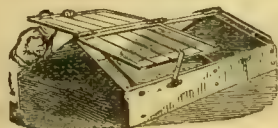
Beg to announce to the Nobility, Gentry, Tradesmen, and Gardeners of the United Kingdom, that **Mr. P. WEATHERS** has been appointed their AGENT and REPRESENTATIVE for the British Isles.

Ladies and Gentlemen requiring Plants, or any Information as to Prices, &c., may communicate with Mr. WEATHERS, at POPLAR VILLA, SOUTHGATE, LONDON, N., who will promptly attend to the same.

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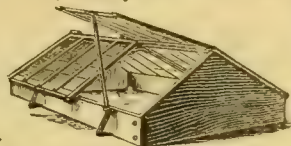
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PORTABLE PLANT PRESERVER.
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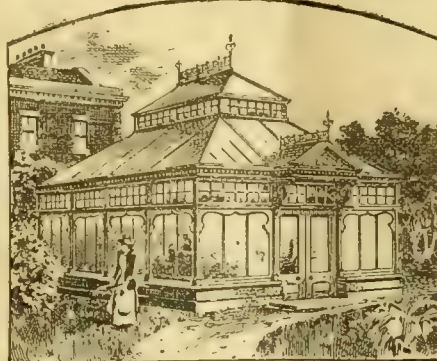
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All Frames made of Selected Red Deal, painted three times, and Lights glazed with 21-oz. sheet glass.

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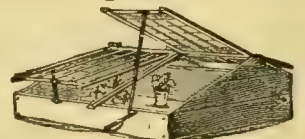
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 SPECIAL APPOINTMENT.



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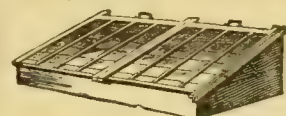
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8 ft. by 6 ft. ... 4 5 6	16 ft. by 6 ft. ... 7 8 6



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CUCUMBER-FRAME LIGHTS.
 6 feet by 4 feet, painted and glazed ... 14s. 0d. each.
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 Catalogues of all our Manufactures, post-free on application.

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Undertake the complete erection of **HEATING APPARATUS** for GREENHOUSES, OFFICES, PUBLIC BUILDINGS, &c. Have the largest stock of **BOILERS, PIPES, and CONNECTIONS** in the Trade to select from, and invite inspection of same.

BOILERS of the latest and most approved class, including the

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Prices, 5s., 7s. 6d., 10s. 6d., 15s., 21s., 42s., 63s.,
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FIVE PER CENT. DISCOUNT FOR CASH.

For full particulars of Contents of these Boxes, and
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Bulbs for Early Forcing.

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have just received, and offer, of unexcelled quality:—

HYACINTHS, Single White Roman, 12s. 6d. and 15s. per 100.

HYACINTHS, Single White Italian, 10s. 6d. per 100.

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NARCISSUS, Large-flowered Paper-white, 7s. 6d. per 100.

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Carriage Paid. Descriptive CATALOGUE on application.

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LAINGS' Single & Double Collection is the best.

This has again been proved by the award of

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For the Largest and Finest Group of Begonias ever seen, over 1000 plants being used.

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One of the most conspicuous features of the Exhibition was
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We cordially invite all Lovers of Flowers to Inspect our "Truly Magnificent Show of Begonias."

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BEGONIA SPECIALISTS, SEED, PLANT, AND BULB MERCHANTS,
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INTERNATIONAL HORTICULTURAL EXHIBITION, EARL'S COURT, LONDON, S.W.

Chairman of the Executive Committee—H. E. MILNER, F.L.S., C.E. Secretary—G. A. LOVEDAY, B.A.

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GRAND SHOW OF AUTUMN FLOWERS,

On FRIDAY, Sept. 9, from 1 to 10 p.m.; and SATURDAY, Sept. 10, from 11 a.m. to 6.30 p.m.

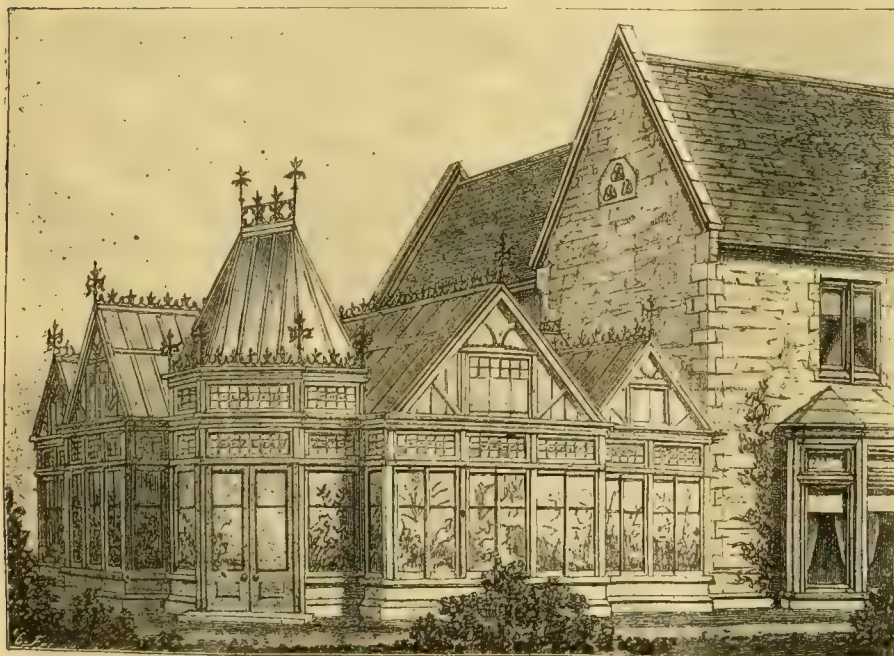
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 10, 1892.

THE NATIONAL ROSE SOCIETY. ITS NEW DEPARTURE.

THOSE who, like myself, have had to do with flower shows for a large number of years, know well enough the kind of complaints one is apt to hear on many subjects; amongst them the most prominent being that of being overmatched by big battalions. "Of course I am beaten," says one disappointed exhibitor; "why, he has a house full of Auriculas, and I have only a couple of frames; or, "he has 2000 pots of Carnations, while I have only as many hundreds. But perhaps the outcry has been loudest amongst the Rose amateurs. There have been cases where the man who has grown his tens of thousands has demeaned himself by exhibiting in a class for six; but happily such cases are rare, although there is a class of amateurs who are commonly called pot-hunters, to whom the honour of winning a prize is secondary to the amount of the prize money, and who scoff at challenge trophies, because if they won them they only hold them for a year. This complaint against the conduct of large growers had become more intensified, and so deep was the growl, that it was evident the case would have to be taken up in some form or other by the National Rose Society; and thus it came to pass that last year before the fullest meeting the Society had ever held, the question was introduced by Mr. Charles J. Grahame, of Coombe Road, Croydon, and the result of the meeting after the question had been thoroughly argued on both sides, was that a new schedule designed to obviate these anomalies was devised, prescribing the number of Rose trees which a grower might possess in order to entitle him to exhibit in certain classes; it was designed to do away with two anomalies—the first being that of an amateur having, let us say, 5000 Roses exhibiting in a class which was much lower on the schedule than the one he ought to have occupied; the other, to prevent a grower who ordinarily exhibited in the highest classes coming down because the season had been unfavourable, or his Roses were too late or too early for taking his usual place, and instead of holding back altogether, coming down with a swoop upon the poor little men, and carrying off the coveted prize; and this was perhaps the more frequent cause of complaint. The National Rose Society in its schedules endeavoured to prevent this by confining an exhibitor to one particular division, and not allowing him to exhibit in a large and small class at the same time. Sometimes an exhibitor of this kind elected to do this in the Tea classes, and suddenly appeared where everyone but himself thought he was out of place.

As to the question of big battalions, there is, as Sir Roger said, something to be said on both sides; on the one hand, it is a marked advantage to be able to go down a row of, say, 100 Marie

Baumanns to select a bloom on the show day, over him who has to look carefully over a dozen or so of plants before he can find one up to the mark; but then, on the other hand, he has perhaps bestowed far more care and attention on these few than the former did on his large number, and is very often in a position to beat him. During a long acquaintance with Roses and rosarians, I have known several cases where an amateur, who has been very successful as a small grower, has been carried away by his enthusiasm, and gone into thousands instead of hundreds, but I have never seen an instance in which he has done so to the improvement of his flowers; but while admitting all this, it is not a pleasant thing to see a large Triton buffeting the poor little minnows about.

There was another objection that many of us entertained to this change, viz., that it was likely to introduce a system of espionage and want of brotherly feeling among competitors, that people might know perfectly well that an exhibitor had more than 1000 Roses, although

who did join, we have but little means of judging how far they were influenced by the consideration of the change that had taken place. I obtained several of these, but I do not think it entered into any of their minds that they were supporting a new order of things; they did not join as exhibitors but as lovers of the Rose. But the result is still more disappointing when we come to the number of exhibits; we were taught to expect a vast increase here, small growers were to think as the competition was to be so keen, that the judges would be obliged to go beyond the schedule, and award a number of extra prizes; but in the table annexed, which has been carefully compiled from the entry-book of the Crystal Palace, it will be seen that there was in reality a considerable falling off, for that while the exhibits in the present year under the revised schedule, amounted to 134, in the last year they made 180, so that in reality there is a considerable falling off, and this although an entirely new class was added for growers cultivating less than 500 plants:—

RESTRICTED CLASSES, CRYSTAL PALACE, 1892, COMPARED WITH SIMILAR CLASSES OF 1891.

For the year 1892.				Corresponding Classes, 1891.			
	Number of Entries.	Number of Exhibits.			Number of Entries.	Number of Exhibits.	
<i>Growers of less than 2000.</i>							
Class 12—Twenty-four distinct, single	5	4	{ Class 10... ..	10	10		
„ 13—Eighteen distinct, single... ..	4	4	{ Or, extra Class 19	19	14		
„ 14—Twelve distinct, single	5	3	Class 12	5	5		
„ 15—Eight distinct, three each	8	7	Extra Class 17	6	5		
„ 16—Nine any H.P., single	8	7	Class 11	7	6		
<i>Less than 1000.</i>				No corresponding class.			
„ 17—Twelve distinct, single	14	13	Class 13	13	12		
„ 18—Nine distinct, single	8	8	Class 14	10	11		
„ 19—Six distinct, three each	10	8	Class 16	16	13		
„ 20—Six any H.P., single	12	11	Extra Class 22	30	26		
<i>Less than 500.</i>							
„ 21—Nine distinct, single	7	7	No corresponding class.				
„ 22—Six distinct, single	11	7	{ Class 15	14	13		
„ 23—Four distinct, three each... ..	6	6	{ Or, extra Class 18	9	9		
<i>Less than 500 Teas.</i>				No corresponding class.			
„ 35—Twelve distinct, single	10	8	Class 28	11	9		
„ 36—Nine distinct, single	9	6	Class 29	11	11		
„ 37—Six distinct, three each	8	7	Class 32	6	3		
„ 38—Six any Tea or Noisette, single	17	13	Class 33	17	15		
<i>Less than 200 Teas.</i>							
„ 39—Nine distinct, single	8	11	No corresponding class.				
„ 40—Six distinct, single	19	17	Class 30	21	20		
	167	134		295	180		

he had entered in that class; but who was to "bell the cat" was the question, and that therefore, probably, it would as now be left so far as that was concerned, to the honour of each exhibitor. Well, so of course it has been, exhibitors have entered in the various classes assigned to them, and as no complaints have been lodged on that score, we must only conclude that they "were all honourable men."

Well, the change has been made, and we have now to see how it has worked. Two things were stated by the advocates of the change, that it would largely increase the number of exhibitors, and also add considerably to the members of the National. I hardly think the result has corresponded with their anticipations. It is true, as will be seen, that the entries of new members has increased considerably, but there were only thirteen more joined the Society than in 1889, which in a total of nearly 500 members is, I fear, a case of "great cry and little wool;" and out of those

With regard to the new members, the following are the numbers who joined:—In 1888, thirty-five; in 1889, forty-eight; in 1890, thirty-nine; in 1891, thirty-four; and in 1892, sixty-one. This does not represent the actual addition of these members to our list, but that these have joined, while, as in all societies, the number of old members has been diminished by death or other causes. There will be some who will say, perhaps, that even "this is only the effect of a spurt," and that it will not be kept up; while others will say that the excellence of the new arrangement has not been proved sufficiently, and that its popularity will bear fruit later on. Time alone can decide these questions; in the meantime, I think we may say the new departure has neither justified the hopes of its adherents, nor the fears of its opponents.

There is one subject of congratulation connected with the whole subject—the loyal manner in which it has been carried out by all, whether adherents or opponents of the new departure.

There were no angry expostulations or querulous complaints, and it would have been difficult to ascertain on which side members had taken it. It is this spirit of good feeling and kindly consideration which has so helped forward the National, and so long as it continues we have no fear for the continued prosperity of our Society. *Wild Rose.*

NEW OR NOTEWORTHY PLANTS.

KALANCHOE MARMORATA, Baker, n. sp.*

This new species of Kalanchoe was brought alive lately, with many other interesting plants, from the mountains of Abyssinia, by Professor Penzig of Genoa. When I visited, last November, the garden of Mr. Thomas Hanbury at La Mortola, it attracted my attention by its glaucous leaves, copiously spotted with brown; and now M. Cronmeyer has sent me a specimen in flower. I find that it is a typical Kalanchoe, nearly allied to *K. Schimperiana*, A. Rich.; but in that species the whole plant is covered with fine pubescence, and the flowers are much more numerous, and bright yellow. The nearly-allied *K. grandiflora*, A. Rich., has purple flowers. The name *grandiflora* is preoccupied by an Indian species, which was described by Wight and Arnott, and is figured in *Bot. Mag.*, t. 5460. The Abyssinian plant will therefore require another name, and I would suggest *K. macrantha*. I am not aware that any other Kalanchoe has the leaves similarly mottled. A very large number of new species has been found lately by Mr. Baron, and others, in the sterile elevated tracts of Madagascar. The difficulty with all these *Crassulaceæ* is, that one gets such a very poor idea of what the plant is really like from dried specimens.

Perennial. Leafy stem elongated, terete, glabrous, glaucous, $\frac{1}{2}$ inch in diameter low down. Leaves decussate, sessile, obovate-cuneate, erecto-patent, 3 to 4 inches long, half as broad, pale glaucous green, with copious blotches of brown, crenate, except at the cuneate base. Cymes few-flowered. Calyx $\frac{3}{4}$ to $\frac{1}{2}$ inch long, cut down to the base into four lanceolate segments. Corolla-tube above 2 inches long, angled, cylindrical, dilated at the base, greenish-white; limb white, 2 inches in diameter; lobes spreading, ovate-acuminate. Stamens 8, biseriate, the longest 4 just protruded from the throat of the corolla; filaments filiform; anthers small, oblong, yellow. Styles 2 inches long, much overtopping the anthers. The corolla, in size and shape, resembles that of *Nicotiana persica*, *Bot. Reg.*, t. 1592, but, of course, has only four segments instead of five, *J. G. Baker.*

HABENARIA CARNEA, N. E. Br., n. sp.

Although a figure of this plant appeared in the *Gardeners' Chronicle* last year (see vol. x., p. 729, fig. 105), my description of it was not then published, having in some way got lost in the post, together with those of some *Stapelias*.

Habenaria carnea is a native of Penang, where it was discovered and introduced into cultivation by Mr. C. Curtis, who sent the plant to Kew, where it flowered in the autumn of last year. It is a very distinct species, differing from all the other East Indian members of the genus except *H. militaris* in the form of the lip. The leaves are all in a radical rosette, and are $1\frac{1}{2}$ to 2 inches long, by $\frac{3}{4}$ inch broad, lanceolate acute, dull green, covered with small whitish spots. Flower-stem, 5 to 6 inches high, pale brownish-pink, with about three ovate acuminate sheaths, not very closely wrapped round the stem. Flowers few (four in the specimen seen), in a lax raceme, of an uniform pale pink, fading to pinkish-white. Ovary 1 inch long, acutely ribbed, pale olive, exceeding the acuminate bracts. Dorsal sepal 4 lines long, 2 lines broad; lateral sepals $\frac{1}{2}$ inch

* *Kalanchoe marmorata*, Baker, n. sp.—Caule crasso glabro elongato; foliis sessilibus obovato-cuneatis crenatis glaucis maculis copiosis fuscis marmoratis; cymis paucifloris, calycis segmentis lanceolatis, corollæ albæ magnæ tubo elongato angulato, lobis ovatis acuminatis; staminibus biseriat, antheris parvis oblongis.

long, 5 lines broad, obliquely elliptic-ovate, the upper edge nearly straight, the lower very curved, and the base adnate to the mouth of the spur. Petals, 4 lines long, 3 lines broad, obliquely ovate, and together with the dorsal sepal forming a small hood over the column. Lip large in proportion to the rest of the flower, 1 inch long, and the same in breadth, somewhat square in general outline, with rounded angles, three-lobed, the middle lobe broadly transverse, obtusely bifid, the side lobes broad, obliquely ovate obtuse, in the same plane with the front lobe, and projecting forward so as to overlap it a little. Spur, $2\frac{1}{4}$ inches long, slender. Column with an oblong, tooth-like process standing erect between the arms of the rostellum, which projects

a pale ground. The flowers are solitary, on pubescent brown scapes, the dorsal sepal proportionately large, white, with radiating green nerves, and a stain of vinous red across the centre; the inferior sepal is much smaller, and of the same colour; the petals are narrow, white, tinted with vinous-red at the apices, and closely veined with green; ciliate and warted on the margins, with an occasional spot on the surface, and some brown specks near the base; the lip is of a rich glossy-brown colour, slightly concave below the opening, and speckled on the unfolded lobes; the staminode is of a pale green colour, with darker green reticulations. *C. Warneri* \times *superbiens*.

Cypripedium \times *Daisyæ*.—The foliage is strap-shaped in character, 8 inches long by $1\frac{1}{2}$ inch broad,

which numbers about 250 species and varieties, and embraces many of the rarest and largest specimens in the States. Among them may be mentioned:—

Cypripedium Stonei pallens, ten spikes, with white dorsal, pale petals and pouch.

Cypripedium Schroderie splendens, nine fine spikes.

Cypripedium Domini rubescens, ninety growths in full bloom.

Cypripedium grande atratum, with eleven strong spikes; its large flowers, with long drooping tail-like petals, making it very effective.

Cypripedium Chamberlainianum, with its hairy flower buds, twisted petals, and rosy lip; no doubt the first to bloom in America.

Cypripedium superbiens, large pan, in full bloom.

Cypripedium prestantis, the finest of the Philippinense group, with its bright yellow, brown striped sepals, long twisted petals, and pale pink lip, with many others might be mentioned among the best in flower at present. Robert M. Grey, gardener to H. Graves, Esq., Orange, N.J.

A NEW ATHYRIUM.

I SEND you herewith photographs showing a frond and the whole plant of a quite new form of *Athyrium filix-femina*, which I found last year at Strathblane in Scotland. This variety, named *A. f. f. revolvens* (Drury), is especially interesting, as being the first find of a quite new type in this species, characterised by an excessive convexity in all its parts, which results in the fronds forming graceful curves, terminating with a marked spiral twist, due to the adjustment of the rolled-in upper surface to catch the lights. The pinnae partake of the same character in a still more marked degree, forming in the mature fronds a symmetrical row of ringlets; and finally, the tertiary divisions or pinnules are distinctly curved and rounded. On close examination it is seen that the general structure is that of a purely normal *Athyrium*, the abnormal character, striking as it is, being simply due to the continued growth of the superficial cells, which, by their expansion, lead to the rolling inwards of all edges and terminals. I found a fine plant of five crowns in a little glen just behind Mr. J. C. Murray's house near Strathblane, and some dozen yards lower down he immediately found another, in which, however, the pinnae are only curled longitudinally, the pinnules being flat. The one was probably a seedling of the other; but in all the seedlings raised from my own find, the per-revolute character is very marked, not one showing the least tendency to reversion. The find is particularly interesting to the hybridiser, or rather crosser—if I may coin an ugly but more appropriate name, as the pendulous character would undoubtedly form very pretty combinations with many of the plumose and crested forms. So far, the only approaches to the type in the species are several flexuose varieties, none of which, however, have the one essential merit of symmetry. *A. f. f. revolvens* is a robust-growing plant, of full normal size and habit, and is, I venture to think, a decided acquisition to our native decorative Ferns. Chas. T. Drury, F.L.S., Fernholme, Forest Gate.

SCOTLAND.

USE OF GOLDEN PRIVET, AND OTHER PLANTS.

WHILE making a call recently at Beech-hill Nurseries, near Edinburgh, to see Mr. Downie's fine selection of Begonias (the best of which, however, were removed to a house by themselves, for supplying seed), my attention was arrested by some clumps of plants deep golden in colour, and such as can be seen at considerable distance. I discovered that they were Golden Privet, more brilliant in colour than the numerous Pansies, golden balm Pyrethrums, and other yellow plants in close proximity to them. When such fine effects for permanent decoration of

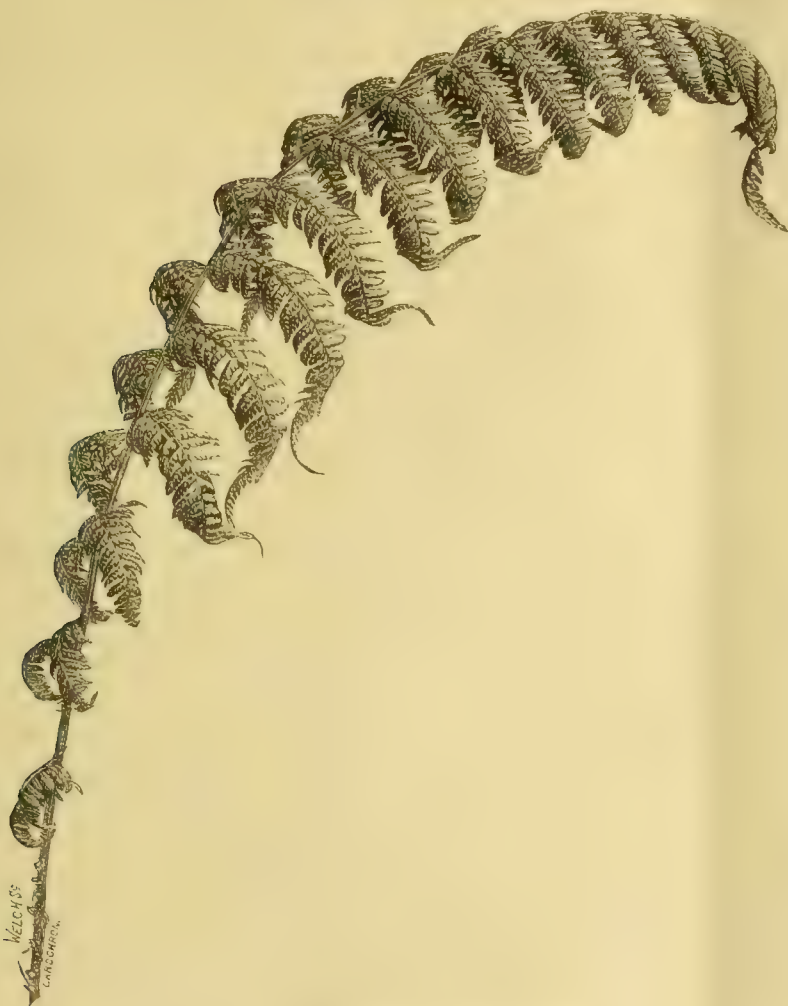


FIG. 51.—A NEW VARIETY OF THE LADY FERN.

forwards. Stigmas parallel, placed under the arms of the rostellum at the mouth of the spur, light green.

This is one of the most beautiful species of *Habenaria* I have seen, the delicate soft pink colour of the flowers when first they expand is very charming, although after a few days, the pink becomes much faded. It is rather remarkable that in so vast an order as the Orchidæ there are very few flowers in which pure pink predominates, usually it is more or less mixed with a tinge of blue; and of those that have the flowers entirely pink, besides the present plant, I only know of some in the genus *Satyrion*, which is also a terrestrial genus. Pure pink appears to be one of the rarest colours among Orchids. N. E. Brown.

NEW HYBRID CYPRIPEIDIUMS.

Cypripedium \times *Warnero-superbiens*.—The plant is intermediate between its parents, foliage 5 inches long, acute, broad near base, reticulated with dark green on

faintly tessellated, and bright green in colour. The flowers come one to three on a pubescent brown scape, 18 or more inches long; the sepals are white, shaded through the centre with pale green; the whole is tinted and veined with carmine, and speckled with brown at the base, the dorsal somewhat the larger and deepest in colour; petals $2\frac{1}{2}$ inches long, $\frac{3}{8}$ inch broad near apices, tapering towards base. The basal half is primrose yellow, warted with purple, and the apical half of a bright carmine, and slightly dilate; lip (much the shape of *C. Lowii*) brown, shaded with vinous red, paler underneath, veined with green, infolded lobes speckled with crimson, staminode obcordate, pale green and carmine. The result of a cross between *C. Lowii* \times *C. ceanothum superbiens* \times , and is named in honour of Miss Daisy Graves, of Orange, N.J., an ardent admirer of the genus.

The above are now in flower in the extensive collection of Henry Graves, Esq., of Orange, N.J.,

conspicuous portions of ground in many of the leading nurseries is produced by beautiful shrubs, one feels that it is regrettable that there is so little done in this way in the fine grounds of so many private gardens, especially when one is accustomed to see much labour expended in keeping beds of tender and half-hardy plants in order, with the result, that before they are quite at their best, frost sets in and destroys them.

Where beds of shrubs of the choicest species are arranged for effect in groups—and this may be seen in some places most artistically done—beauty and a dressy appearance are easily maintained all the year round. I have never known interest to flag where such beds are established. In many northern gardens this season there will not have been two months of real beauty in them; plants were placed in the beds for some weeks before they made any growth at all, and in many places the ordinary bedding plants did not come to their best this season at all. Antirrhinums (even the most valued dwarf white). Pentstemons, Pansies, Carnations, and others of the hardy class, are scarcely (August 1) beginning to open. Dahlias (we only grow Cactus and Pompons for cutting, which are forced, to flower early), Begonias, Hollyhocks, Salvias, Fuchsias, Petunias, and some other species are also unusually backward. Reverting to shrubs for decoration of parterres and ornamental gardens (not the single plants formally placed as sentinels), beds of Berberis, Mahonia, St. John's Wort, Portugal Laurels, or similar shrubs kept dwarf with the knife (not clipped), and shrubs or dwarf trees planted skilfully among them at proper distances, to show the individuality of each. It is not necessary to keep them of uniform height, but if allowed to get overgrown the object will be defeated. Golden Privet is one of the most beautiful shrubs for bedding, as it can be kept quite low; but I find that in low damp positions it is liable to be injured by frost. Mr. Downie's plants are placed on high and sunny positions.

GLASGOW AMATEUR GARDENERS.

There is something remarkably practical in all the schemes of the western capital of Scotland for advancing the interests of the citizens of St. Kentigern; and much success has attended the efforts of certain lovers of their race who have, for the last eighteen years, been giving tangible assistance in promoting horticulture among their less-influential neighbours at Saracen Gardens. The exhibition lately held in the allotment grounds, indicates an amount of horticultural intelligence not often met with among amateurs. In addition to an annual show held in a tent, the society throws open their grounds to the public, who appreciatively take advantage of viewing the skilful labours of their townsmen, who find this a school of sound practical tuition. The gardens are divided into squares, where the cultivators sub-divide them economically into smaller spaces, in which the produce is raised separately. Each cultivator takes charge of his own space, which is enclosed by a neat wooden fence and a gate, which can be locked. Harmless emulation, as a matter of course, is excited among the cultivators, who raise produce of much excellence. There need be no "begging borrowing, or stealing," to furnish the exhibits in the spacious tent. The produce can be seen growing in these amateur gardens, and no doubt each is watched with keen eyes by the competitors, who are to join in the conflict on the exhibition day.

Florists' flowers are grown extensively, especially such as Stocks, Asters, Marigolds, Pansies, Roses, Dahlias, Pinks, Pentstemons, Antirrhinums, Lilliums of species, and collections of herbaceous plants. There are, among vegetables, very fine beds of Leeks, Parsley, Onions, Beet, Carrots, Cabbage, &c., all in squares not extending over 40 feet. Those for competition are ticketed, in order to let the censors compare them with their fellows, the produce being of such equal merit, that it is with difficulty a verdict can be given to the best. Then there are small structures dotted about everywhere, of various forms and dimensions. In many of them may be

seen well-grown flowering and foliaged plants. The methods adopted to raise the large Leeks, Celery, Carrots, Beet, &c., cannot be concealed—glass tubes—and in ridges the finely-blanching Leeks may be seen; and Celery, grown in similar contrivances, show originality, and, in some cases, real ingenuity. The means used for protection of the flowers to be cut for exhibition in the tent are also ingenious and varied; but what seemed to be most efficient for the purpose was a glass light, placed on four posts, fixed in the ground, which throws off rain, but which does not exclude light and air. One could say a deal on these gardens of the industrial classes, which are so instructive to the amateur cultivators who visit them. In the exhibition tent, many creditable exhibits were placed, and competition was close and keen. Among flowering plants were Fuchsias, variegated and zonal Pelargoniums, Lilliums of species, Balsams, Cockscombs, Petunias, Ferns, and foliaged plants, creditably represented. Cut flowers were said to be less in number than usual, but most of them were of fair quality. After the judges had finished their task, a military band performed, and the public were admitted, at a small cost, to see the large breadths of flowers and vegetables, no doubt receiving useful hints from these cultivators, who have spent much of their time and talents there for eighteen years past. The promoters of this praiseworthy scheme must be highly gratified to witness such tangible good accruing from their efforts to humanize (as this town gardening does in a large degree) their less prosperous fellows. The hospitality to the judges, whom they invite from long distances off, is almost overwhelming. The brotherly spirit which appears to exist among these Glasgow "chappies" is very marked and gratifying. We hope, ere long, to have other remarks on the qualification of some Glasgow professional cultivators. *M. Temple.*

PHLOXES.

DURING the Begonia and Plum Conference at Chiswick, the beds of Phloxes on either side of the centre walk attracted considerable attention, and drew forth great admiration. Very many gardeners and others interested in floriculture might have been seen noting down the various varieties which had received marks from the Floral Committee of the Royal Horticultural Society; all of these had labels attached in such a manner as to render note-taking an easy matter. The Phloxes at Chiswick have been received for trial from various growers, notably Mr. J. Forbes, of Hawick; Messrs. Dicksons, Chester; Paul & Son, of Cheshunt; and Lemoine, of Nancy. Those who know the old species from which the present handsome varieties have been obtained, will readily recognise the patience and work which have been employed to produce the dwarf, compact-growing plants that give us such fine panicles of good-shaped and brilliantly-coloured flowers. One thing in favour of Phlox raising is the fact that they can be sown and flowered in a year, and cuttings taken in the autumn from the bottom growths make good plants under ordinary care, ready for planting in the spring. Many of the varieties seen at Chiswick would be admirably adapted for pot-culture and conservatory decoration.

The early-flowering Phloxes of the suffruticosa section have been raised from the species of that name; they are, however, less showy, and of poorer habit than the later ones. Miss Mima, a white-flowered variety, with pale pink eye; Miss Cook, bluish, with lilac eye; and Rosy Gem, a pretty rosy-lilac flower, are three good varieties of this section.

The later-flowering varieties, known as the decussata section, have been obtained by crossing and re-crossing several species and varieties, all of North American origin, as *P. maculata* (decussata), *P. pyramidalis*, *P. paniculata*, and *P. maculata* var. *suaveolens*, until the original species have become all but lost, and in their place we have a fine race of autumn flowers, blooming from July through August into September, and later, if the weather continues open.

The following selected varieties have all re-

ceived the notice of the Floral Committee; they are distinct, and a list of their names may help those who cannot get to Chiswick:—Flambeau, medium height, producing large heads of fiery-red flowers with dark centres; Molière, dwarf, large rosy-pink flowers; Bournouf, medium height, dark scarlet flowers, with dull purple eye; Aspasie, flowers shaded lilac, with white centre; Henri Murger, dwarf, flowers as large as a five-shilling piece, white, with large crimson centre; Iris, a tall variety, with immense heads of violet-purple flowers; Granville, medium height, ivory-white; Eugène Dangaverillus, medium height, free, pale lilac, white centre; La Fille de l'Air, a very dwarf plant, flowers white, with rosy lilac eye; Panorama, dwarf, lilac, with white centre; Boule de Feu, salmon-red, pale eye; Pluton, medium height, fine reddish-purple flowers; Avalanche, a very dwarf plant, with large panicles of the purest white flowers; Le Soleil, dwarf, large rosy-pink flowers, bluish centre; Eclairer, dwarf, purplish-rose with pale centre; Wm. Robinson, salmon-pink with rose eye, tall; Belvedere, dark carmine-rose, dark eye; Long-champs, bluish, with a rosy centre, tall; Panama, large white; L'Africaine, a dwarf free-flowering variety, with pale lilac flowers, curiously spotted and blotched with deep rose; Ornament, tall, violet with shaded centre—a telling variety; Epopee, dwarf, large flowers, rosy-lilac, pale centre, very pretty; Mrs. Laing, tall, bright rosy-pink, with large crimson eye; Alexander Matheson, tall, pale rose, dark eye.

The above varieties give a wide range of colour, sufficient for a general collection; but many other varieties and shades of colour may be noted at Chiswick. Several of the brighter-coloured Phloxes at Chiswick have had their flowers slightly scorched, which seems to indicate that their cultural requirements are a cool moist soil, and some amount of shade from buildings, trees, &c. *Lodoicea.*

THE GIANT BAMBOO.

IN our present issue we give two illustrations of a gigantic Bamboo growing in the Ceylon Botanic Gardens. These giant Bamboos naturally attracted the attention of Mr. J. H. Veitch, whose letters are appearing in our columns (see *Gardeners' Chronicle*, March 12, 1892, p. 333), and to whom we are indebted for the photograph, a reproduction from which is now given. The young shoots present a remarkable appearance, like Brodingnagian Asparagus, while the mature plant (fig. 52, p. 303) forms a tuft as remarkable for beauty as for size. It was described in our columns for August 27, 1881, by Dr. Trimen, who speaks of the alarming grinding, creaking, and clattering noises which go on in windy weather from the straining and breaking of the canes. The species is, we believe, that known as *Dendrocalamus giganteus* of Munro. The mass measures about 98 feet in circumference at 3 feet from the ground, each culm being from 26 to 29 inches in circumference, and 100 feet in height.

SHIRLEY AND OTHER POPPIES.

FOR several years past the gardening community has made much improvement in the arrangement of flowering plants in the garden, and anyone visiting the London parks will doubtless have noticed how well the planting of the flower-beds is now carried out, in accordance with improvement in public taste in such matters. Much useful knowledge may be gleaned in this way during the usual visit made to the metropolis. Having had considerable experience in flower-gardening, I am convinced that no style is so good for a flower garden as one in which great variety is aimed at. This may be shown in the materials employed, whether these be Pelargoniums, tubeforous Begonias, Roses, annuals and perennials, herbaceous plants, bulbs, &c. Violas are modern acquisitions which do well on some soils and not on others. In light soils they are past perfection before the summer is over, but where the plants succeed no combina-

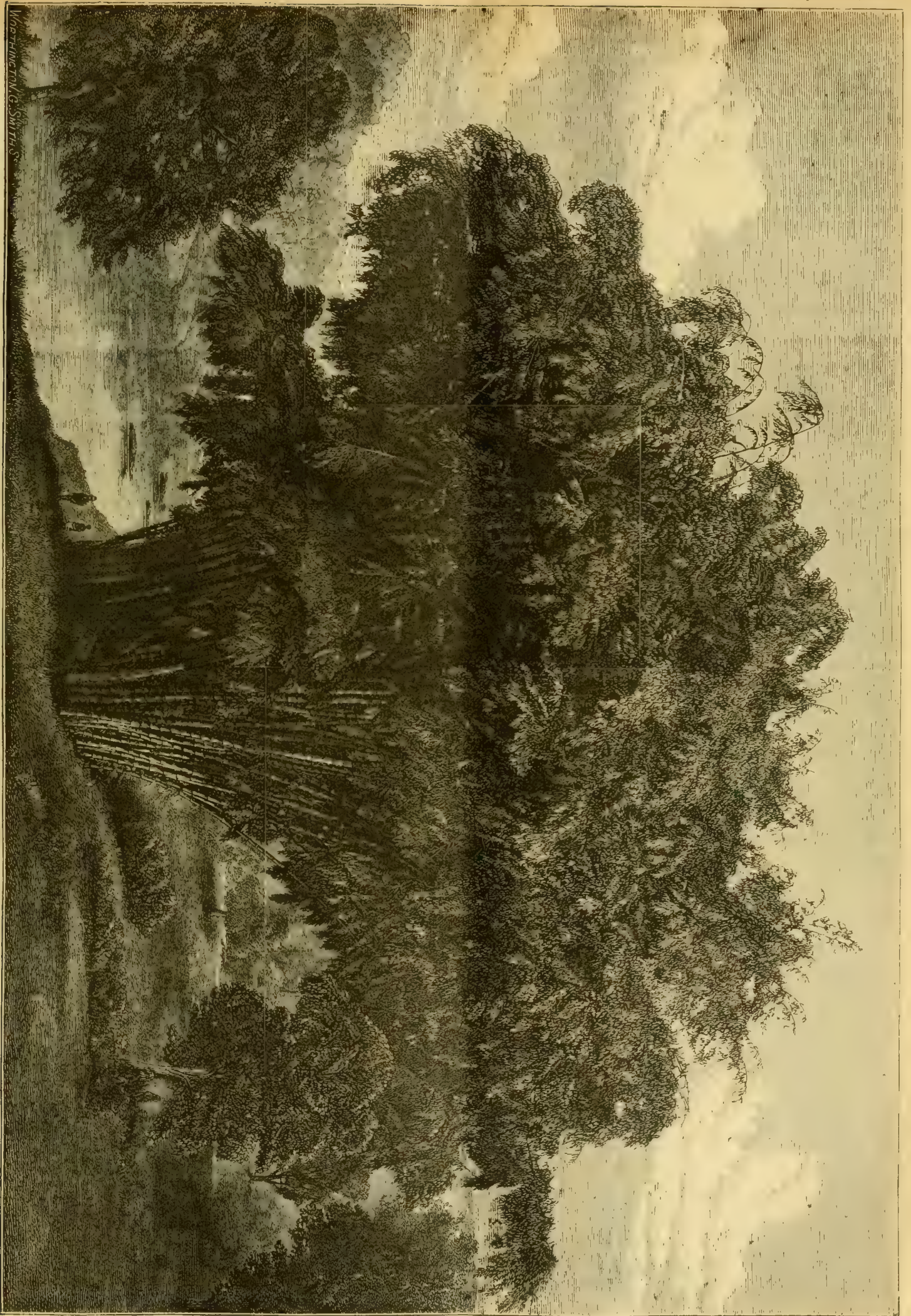


FIG. 52.—GIANT BAMBOO IN THE BOTANIC GARDEN, CEYLON. (SEE P. 302.)

tion with other plants is better than with Tea Roses, examples of which we have here two beds which have been in perfection since last June.

I do not intend to advise what varieties of Pelargoniums and the like should be grown, but I wish to draw attention to annuals, hardy perennials, and herbaceous plants generally. I do not think I can do better than to describe this style of gardening, as practised in these gardens. Chief amongst the annuals which grace our garden in the early summer, or rather, late spring months, are Shirley Poppies. This Poppy grows rapidly in favour with gardeners, on account, no doubt, of its great variety of colours, which range through many shades from brilliant crimson to delicate rose. It would be difficult to find an annual plant that gives more variety from one packet of seed; and the fact that it will grow in the open air from first to last, enhances its value. In choosing positions for this Poppy, it is essential that they should be such as will enable the flowers to be seen from a distance, and where the plants may fully develop, positions under overhanging branches of trees being avoided, and any attempt at formal arrangement avoided. They appear to the best advantage in a mixed herbaceous border, or when intermixed with other annuals in beds. If very early-flowering plants of Poppies are required, seeds should be sown in September, where they are to flower.

I usually make one sowing at this time in various parts of the flower garden, and a bed of them is sown in the kitchen garden, which furnishes cut flowers for house decoration. This sowing should be made in dry positions.

When the spring comes the plant grows rapidly, and is soon in full beauty. Another advantage in making the September sowing in a dry position, is better security against frost, as from long experience I find that losses will occur if the position is low-lying and damp. No attempt should be made to transplant annual Poppies, as they seldom do well, unless transplanted quite early in the spring, and even then the plants do not start away with the freedom of untransplanted ones. The Victoria Cross Poppy is a magnificent variety, and should be in every garden. Its colour is rich vermilion, with a distinct white cross, and is a variety that we use as extensively as the Shirley Poppy; and the plant not lasting so long in perfection as the Shirley, I make two sowings, one in March and another in May, and by so doing the garden is bright with its presence until well on in August. The most useful annual Poppies at present in flower here is a variety that I only know by its colour, viz., black and red. This was sown in May with the Victoria Cross, and judging by its slower growth, I sowed a patch of each variety along side in different places, so that when the Victoria Cross had finished flowering, the black and red filled the gap caused by the removal of the former.

The experienced gardener will easily see that relying on Poppies to fill the flower-beds would cause disappointment, as there would be many gaps in the display; but I hope in a future note to deal with this point, and show how the beds and borders may be kept gay till the frost comes, and obliges us to prepare for winter. *A. L. Ashford, Kent.*

THE GRANGE, HACKBRIDGE.

Few gardens have such distinct and interesting features about them as that of A. H. Smee, Esq., and few owners of gardens obtain greater delights from their treasures than does this gentleman. While pursuing general gardening on well-known and proved lines, both Mr. Smee and his clever gardener, Mr. Cummins, are continually watching their pets, and experimenting on some of the more difficult; these being always intelligently carried out by the light of experience gained from observance of the plants themselves. Of late years the summing of cool and intermediate Orchids in the open air has been the favourite study, and the annually extended experiments, and increased number of good

results, prove that for those who carefully pursue such a method of culture many welcome advantages are to be obtained, such as keeping the plants perfectly clean, ensuring later, and in many cases, more profuse flowering, and above all avoiding that gradual degeneration which those who keep their plants always in glass structures (and especially in the same house always), so frequently complain of.

The pretty garden surrounding the commodious dwelling betrays but few indications of modern gardening, and yet everything is neat and orderly. The house itself is partly clad with Roses, Honey-suckles, Clematis, &c., and in its immediate vicinity are some bright beds of mixed flowers, edged in some cases, with Pelargoniums, a walk running round the whole; this walk on the garden side is bordered by a semi-wild garden of the most beautiful and picturesque character, the arrangement being made the easier by the fact that a narrow rivulet runs through this portion of the garden, with here and there a rustic bridge thrown over it. Here we find the tall Bamboo-like Rushes, the Water Carex, Lythrums, Foxgloves, Epilobiums, Ferns, Lysimachias, and other British plants, mingled with the tall and showy naturalised Indian Balsam, the American Solidago, the tall Campanulas and Roses, scented Stocks, Mignonette, &c., grouped in admirable irregularity beneath the overhanging old Hawthorns, and other flowering trees.

Following the rivulet through the shady and winding walks to the Fern Valley, made memorable by the loving manner in which the father of the present proprietor described it in his interesting and valuable work *My Garden*, we come to the open-air experiments with Masdevallias, and find arranged on a trellis above the rivulet, a fine collection of the showy species all in perfect vigour, with the roots peeping over the sides of the pots of many of them—some are in flower, and more in bud. These are in a shady spot, and beside them is a grand plant of *Todea superba*, which has thriven for years with barely a glass protection. Farther on are more Orchids similarly placed to the Masdevallias, but in a rather more airy situation; among these the large-bulbed plants of *Oncidium macranthum*—which are sending up very strong spikes—are remarkable, and indeed, the whole of the open-air experiments on Orchids here are evidently satisfactory. With the light-loving *Lælia anceps* varieties, *L. autumnalis*, *L. majalis*, *L. albida*, &c., another plan is adopted, and that is to suspend them in an unheated, unshaded, glass-roofed, temporary structure, in summer, and by such treatment it is claimed that though the plants make smaller bulbs than those grown in the ordinary Orchid-houses, yet so far as the flowers are concerned, they are better, for even the smallest bulbs produce spikes. Certainly they are in a very sound and prospectively floriferous condition at present.

Passing down through the fine kitchen garden, in which are a wonderful collection of Apples and Pears (the Apples here are good this year, Pears scarce), and whose borders are brilliant with gay flowers, we come to the picturesque walk alongside the river Wandle, which bounds The Grange Gardens, and among beautiful and interesting flowers we come to

THE ORCHIDS,

which form the principal objects of culture at these gardens; and especially the Cattleyas, the collection of varieties of *Cattleya Mossii* being superb. The plants are in grand health on their staging well up to the glass, their roots running over the pots in a luxuriant manner. This is even more marked in the case of the *Lælia purpurata* varieties, which have roots 3 or 4 feet in length, and reaching to the water in the tank. In flower are a few fine specimens of *Cattleya Gaskelliana*, remarkably handsome varieties; *Lælia elegans*, *Cattleya Dowiana*, and a grand hybrid of *C. aurea*, which is nearest to *C. Hardyana Laverisensis*, but Mr. Smee's is brighter and lighter in colour than the figured original. The golden veining of the throat of this form and its exquisite fragrance render it a covetable plant. *Catasetum Bungeorhizii*, too, is here in flower; a fine plant of *Dendrobium*

Dearei; *Angraecum falcatum*, which has had over forty spikes, and is still in bloom; *Dendrobium Phalaenopsis Schröderianum*, and other species.

The *Odontoglossums* are in fine health, and so also are the *Masdevallias* in the little lean-to at their back, and in both houses some are in bloom. One of the prettiest houses in the gardens is what is called the fernery, which has rockery on one side, above which Orchids, principally in flower, are suspended; and on the opposite side Orchids are arranged with Maidenhair and other Ferns, the roof above them being furnished with flowering climbing plants not liable to harbour insects. Specially noticeable were several species of *Acineta* coming into bloom, two or three interesting *Gongoras*, *Epidendrum erectum*, and other *Epidendrums*, *Dendrobium formosum giganteum*, *D. Jamesianum*, *D. longicornu*, *Stanhopeas*, &c. By the enumeration of these, it will be seen, that plants of botanical interest are nurtured at The Grange, and in the other houses appear many curious *Bulbophyllums*, *Cirrhopetalums*, *Pleurothallis*, *Polystachyas*, *Restrepias*, &c., which by their quaint flowers give ample excuse for the space they occupy. In the other Orchid-houses are a fine lot of *Cypripediums* in flower, *C. Parishii*, a grand variety, with a five-flowered spike; the best form of *C. Morganii* ×; a very large form of *C. Godefroyae*, *C. superbiens*, *C. concolor*, *C. Harrisianum* ×, and others; also *Warscewiczella Wendlandii*, *Trichopilia hymenantha*, a pretty *Aërides*, which flowered among *A. Lawrenceanum*; and in one of the houses *Arundina bambusifolia* grows and propagates freely, and *Cyrtopodiums* and *Ansellias* thrive and bloom remarkably well.

The conservatory is as neatly arranged as ever, the greenhouses brilliant with *Begonias* and other showy flowers, with a good sprinkling of the now seldom-seen new Holland plants and Cacti; the orchard-house and vineries well-cropped, and everything indicating care and attention. *J. O'B.*

ORCHID NOTES AND GLEANINGS.

VANDA SANDERIANA.

THE fine show of this beautiful plant at the Drill Hall on Tuesday last, and the handsome specimens of it now to be met with in many collections, point to the fact that it is only now getting thoroughly established with us. A specimen of it at Sir Trevor Lawrence's, Burford Lodge, has produced six spikes altogether, bearing fifty-one flowers, a number which it has been thought expedient to reduce. In the same collection is a plant of the handsome *Aërides* *Lawrenciæ*, with about 175 flowers, and the batch of *Habenaria militaris*, which contributed the glowing little group exhibited at the Drill Hall, has upwards of 100 spikes in various stages. *J. O'B.*

FIGS AT CHISWICK.

THOSE interested in the culture of these fruits ought to take the opportunity of inspecting the wonderful collection under the charge of Mr. A. F. Barron at the Royal Horticultural Society's garden at Chiswick. There are something like fifty varieties represented, and there are few but what have been bearing fine fruits for some time past—not that they are over now by any means, for when receiving a few hints from Mr. Barron but a few days ago, there were plenty of ripe fruits, and a promise of a continuation up to at least November.

Where such a varied collection is required, pot culture is the most suitable to be followed, and the advantage that is to be secured from such an immense variety is the certainty of a prolonged season, many of the varieties being much later than their close companions. The house is a tolerably large span-roofed one, moderately heated, and the plants are afforded as much air as practicable, to ensure good flavour. The plants are of different sizes, varying from 2 feet up to about 8 feet. They are subjected

to rather severe pinching or stopping, because space is a great *desideratum* in this house. Obtained from cuttings they are prolific at a very early age, a plant that we noted bearing as many as forty fruits being but two years old. No hard forcing is done, but a little gentle heat only is used to stimulate them into growth, and this is maintained until the last fruits have been ripened. Turning to the question of varieties, we were somewhat interested to hear from Mr. Barron that the best quality Figs will not carry, what is generally called, a first crop. There is no doubt but that many of the newer and little known varieties are superior in quality to either Brunswick, Brown Turkey, or Negro Largo; but the disadvantage spoken of would, perhaps, prove a serious objection with some growers, as the first or early crop is often valued the most. Monaco Bianca is the best quality Fig we have tasted. The fruits are green, large, and exceedingly luscious, and will please, if it does not even astonish, any one tasting it for the first time. Bourjasotte Grise is another excellent variety; it is a good bearer, of magnificent quality, and the fruits may be relished, even if not quite ripe, which can scarcely be said of other varieties. Mr. Barron says this is the very best Fig he has got, taking it all round.

The largest and finest of the whole collection is one called Nebian, a beautiful green fruit, of good quality. Black Douro is another of the gems; the fruits are purple. Another purple is Douro Nebra, with fruits somewhat different in shape to most others, in that both ends are ovate, and the stem is exceedingly short. A new variety of Messrs. Veitch's, called Violette Sepor, may also be commended; the fruits are green, but slightly tawny, and the quality excellent. A "Bois Jaspée" is about the same colour, and we have seen fruits very similar to this staged as white Ischia, but all the Ischias are very small, scarcely bigger than good-sized Gooseberries. D'Ager is the very latest of all varieties, and, kept in a cool house, Mr. Barron says it can be had up to Christmas. The fruit is pretty and distinct, being of an intense green colour, with prominent longitudinal white marks upon it. De la Madeline is a very early one, and may be easily distinguished by the leaves, which are more entire than those of any other; the fruits are yellow. There are several small black varieties, of which the best is Grosse Violette de Bordeaux, the fruits of which are very black and rather small; they will keep in condition longer than any other. Very like it is Recluser, which was found growing on an old wall in a village of that name in Kent. It is a little rounder, and perhaps smaller than the preceding one. Of course, there are so many good varieties to be seen at Chiswick, that we cannot attempt to give a list of those that are of average quality; but the foregoing may be taken as some of the very best and finest quality Figs obtainable.

NURSERY NOTES.

MESSRS. KELWAY AND SONS, LANGPORT.

So great is the variety and so large the quantity of the productions of this firm, that a visit to their establishment at Langport cannot fail to be of interest at any time of the year; but during the flowering season of one or more of the specialties which have rendered the name of Kelway familiar to all lovers of gardens, the place has special attractions. Such a time is the present, when what is perhaps, *par excellence*, the "leading feature" of the Langport Nurseries, the *Gladiolus*, is in the height of its beauty. About 25 acres are devoted to this popular flower, no fewer than 20 acres being planted with proved sorts, which term also implies approved sorts. The remaining 5 acres are seedlings and spawn, the latter being, of course, the young bulbils formed around the base of the old corm. These are sown in drills, and much resemble a field of Wheat in the earlier stages. It is impossible to

describe the gorgeous and dazzling effect produced by the enormous masses of full-bloomed *Gladioli*, varying in colour from white, cream, and yellow, to deep scarlet, crimson, carmine, and purplish hues. Space will not permit the mention of individual varieties.

The *Peonies* (also a specialty of Messrs. Kelway), of which about 10 acres are grown, have, of course, finished flowering, and are now maturing seed; they must have made a fine show when in bloom. *Delphiniums*, too, receive a large share of attention, about 100,000 plants of which formed a striking feature but a short time since, with their splendid masses of colour, varying from the deepest of blues and purples to the more uncommon, but not less effective, whites and yellows. A fine show of *Gaillardias* is now at its prime; many of the new varieties to be offered shortly are sure to meet with a large demand. Want of space precludes more than casual reference to the large stocks of quilled *Asters*, *Begonias*, *Pyrethrums* (100,000 plants), *Dahlias*, *Pentstemons*, *Hollyhocks*, and hardy herbaceous stuff of every description.

One of the most striking features in the glass-houses is the stock of Cucumbers grown for seed; nearly 10,000 ripe fruit can now be seen. The most noteworthy varieties are Prince of Wales, a long smooth fruit, and of good shape; Conqueror, of immense size; Telegraph, Perfection, and Cardiff Castle—the two latter varieties are shorter, of good shape, and very prolific. These are, of course, all grown in separate houses, to ensure the seed coming true. A long house of *Cannas*, ranging in colour from brilliant scarlet to nearly white, was very striking, and a houseful of *Petunias* for seed deserves special mention.

In addition to the above, Messrs. Kelway grow about 100 acres of farm seeds of all kinds. The clean and healthy condition, and the high state of cultivation of a stock so large and so varied as that to be seen at Langport—to say nothing of the constant output of new varieties—show the organising skill of the Messrs. Kelway, and the zeal of their foreman, Mr. Drummond.

A TRAVELLER'S NOTES.

(Continued from p. 181.)

LUCKNOW, January 2, 1892.—A great change is noticeable in the vegetation round Lucknow to that which I have been accustomed to see for the last few weeks—the dry sandy jungle covered with little but low scrubby *Babool*, has given place to land, much of which is under cultivation—and the plants in the parks, gardens and streets, are like those in Bombay and Baroda. Mr. Ridley is in charge of Wingfield Park and the Horticultural Gardens at Lucknow. Wingfield Park, some 40 acres in extent, is a pretty, extremely well-kept park, but a few hundred yards from the road leading to the famous Residency, and one of the principal in the European quarter.

There are no gates, the entrances being marked by two white stone curbings. The roads are broad, 20 feet wide, hard, clean, and in perfect condition, and are covered with a peculiar red sand, which seems to bind well. Out of Colombo I have seen nothing like this red earth elsewhere—the effect is very pretty, the roads winding in and out through the grass.

The whole of the park is under grass, and round the largest pavilion extremely well kept. Small figures, on still smaller pedestals, are scattered about, especially on the centre lawn, round the large pavilion—and from time to time, whilst driving round the park, occasional glimpses of small white stone circular pavilions, usually on the summit of slight hillocks or knolls, are caught. These light graceful, small white stone structures, usually consisting of an arched dome, supported on light pillars, are very pretty—but I regard the statuary as being much too small—it seems quite lost.

On entering the park by the entrance nearest the town, one has on the right a road encircling the park, from which at right angles is another running parallel with the shrubbery, defining the park limits in this direction—other roads wind in and out between the grass plots. Large trees are dotted about, usually isolated, and no young planting seems to be

done—a few clumps are also to be seen. Amongst the large, isolated specimens I noticed, many *Eugénias*, some *Phoenix*, a few fine *Ficus religiosa* (the *Peepul* tree), and some especially good *Poinciana regia*, some of the specimens being quite 30 feet high. I think the long bipinnate foliage of this beautiful tree is handsomer here than I have noticed it anywhere previously; its long, big, twisted, thick brown seed-pods are not infrequently 2 feet long. *Nims* (*Azadirachta indica*) are also to be seen, as well as a few fine *Teak* (*Tectona grandis*), as handsome a feature here in the landscape as anywhere. Not unlike this in appearance is *Bignonia adenophylla*; the foliage is thick, the individual ovate leaf being large; the form of the head is regular and pyramidal. Several are scattered about the park, and an avenue of this tree leading to the horticultural gardens is very handsome. Another nice tree, distinctly worth special notice, is *Alstonia scholaris*, tall, evergreen, of regular habit, the head not spreading much; at the end of each shoot is a verticil of longish, thick, fleshy, ovate leaves; a nice specimen near one of the main roads is nearly 35 feet high. *Tamarinds* are also scattered about.

In the fork of the two roads, leaving each other at right angles and encircling the park, is a pretty, graceful clump of a not too strong-growing *Bamboo*, in front of some fine old *Tamarinds*. On either side of the road bearing to the right, are some single specimens, on the right of the road being a shrubbery and hedge hiding the public street outside; whilst on the left is the broad stretch of grass, several acres in extent, with single specimens dotted about. Following this road for a short distance, a rising knoll with a "suttee" (marking the spot where a woman has thrown herself into the fire consuming the body of her dead husband) soon comes into view. A clump of tall *Babools* crowns the summit. I was much struck with the entirely different aspect of the *Babool* from that it usually bears on the dry sandy desert. Here it is a tall, black-stemmed, not unhandsome tree, though its foliage is, of course, insignificant, whereas on the desert it is nothing but a low, scrubby, thorny bush for hundreds of miles. The favourable situation in Wingfield Park, where it doubtless does not suffer too severely from drought, makes a wonderful difference.

Crossing a small white stone bridge, spanning a former "nullah," not far beyond, Mr. Ridley's bungalow, standing a little back, and almost hidden from the road, is reached. It is approached from almost every direction by six or seven roads, all running into a broad circle round a piece of grass, with an insignificant piece of statuary, on a wide stone terrace in the centre. In the forks formed by the junction of these roads are clumps of trees, some very pretty—particularly two, one a fine *Ficus*, with some young *Phoenix sylvestris* beneath; and another a thick broad bush of *Bougainvillea glabra*, covered with blossom, more especially its young, sub-pendulous, long shoots, gracefully arching over on every side.

The bye-path to the bungalow, from this open space, where so many roads and paths meet, is but a few yards long, and has on one side a fine row of *Juniperus chinensis*, thick and healthy-looking, evidently at home, whilst the stems of three tall *Phoenix* soar up behind.

Looking beyond the bungalow, one's attention is immediately arrested by the broad spreading, flat head of a more than usually fine *Poinciana regia*.

Passing round the bungalow to again reach the main road, one passes close to one of the small white-stone, pretty little pavilions referred to on the top of a small knoll. On three sides are three tall *Casuarina muricata*, always graceful, with its fine needle-like foliage; below the knoll is a fine mass of *Bougainvillea* and some clumps of *Agave serrulata*, a handsome species, (with semi-upright, short, stiff foliage, making offshoots freely).

A shrubbery partially hides the road from this pavilion. On again reaching the main road, on either side of which is a fine piece of *Bignonia adenophylla*, not far from a tall *Millingtonia hortensis*, shading a young *Cycas revoluta*, opposite a *Grevillea robusta*, some 25 feet high, the centre pavilion and that portion of the park most carefully looked after comes into view; a few small statues are dotted about near here, and a glimpse is caught of the light graceful pillars of one of the small pavilions in the far distance on the other side of the grounds.

The main pavilion is, as I have said, of white stone, oblong in shape, and is supported on a low stone terrace. Opposite its four straight sides are four long beds, 100 feet long by 25 feet wide; the designs in these beds, though simple, are tasteful, particularly

when one considers how limited must necessarily be the number of bedding plants at Mr. Ridley's disposal. The plants chiefly used are *Alternanthera* and *Pyrethrum* (Golden Feather), the first I have seen in India. The two beds facing the end of the building are the handsomest, one being laid out with broad diagonal lines of *Phlox Drummondii*, whilst at each end is a circular portion, the one nearest the pavilion having circles of Golden Feather and *Alternanthera*; the one at the other end having as centrepiece a small *Livingstonia*, encircled by *Anthericum*, the white variegated one, and a few other plants, amongst which I noticed *Chamaepeuce Casabonæ*. The bed at the opposite end of the building to this is laid out with small tiles in diamond-shaped patterns, with pretty white, black, and green stones between each. These stones are in straight lines, running between the small diamond-shaped beds containing the plants; the effect is very pretty.

At the end of one of these beds is the fernery, a flat-roofed structure, covered with the stems of "mouje-grass," tied to wire-netting. In the distance on the left a tall *Bougainvillea glabra* towers straight up over a dead tree for more than 30 feet, and on the same side is a tank with a *Cyperus alternifolius* shading a kneeling *Venus*, with a thick shrubby behind, most noticeable in which is a fine *Arenga saccharifera*, with long stiff leaves; a *Caryota*, and a tall *Oreodoxa regia*.

On either side of the long bed is a path with the same red sandy earth. The entrance to the house is lined on either side by a row of *Biota orientalis*, none of the specimens being less than 10 feet high; behind which, on each side, are two tall Cabbage Palms, *Oreodoxa regia*, the tall straight stems slightly bulging at the base, rising clean and smooth for nearly 30 feet.

On one side of the house is a row of low *Crotons*, whilst the other is hidden by a row of scarlet-flowering *Cannas*—very good varieties. Within the fernery, the paths of which are all covered with red tiles, are low undulating rockeries, over which *Selaginella*, *Ficus repens*, and other creeping plants are growing. It is thickly planted with such things as foliage *Begonias*, *Ferns* (chiefly *Nephrodiums* and *Nephrolepis*), *Crotons*, *Dracenas*, and many small Palms; a few *Aërides* and *Saccolabium* hang from the roof, in good condition, and some pans of *Nephrolepis philippinensis* and *Adiantum*, chiefly *tenerum*. *Sanchezia nobilis variegata* is represented in this house, but is not highly coloured. One corner, planted entirely with *Alocasia Jenningsii*, is very pretty. The lawn between these long beds is laid out with large circular ones of *Roses*; many dozens of these *Rose* beds surround the pavilion.

Keeping to the right of the pavilion, towards the exit in the direction of the *Pikandra* Bagh and the Horticultural Gardens, one passes a fine single specimen of *Podocarpus chinensis*, in grand condition. On the right of the road near here, leading to the exit, is another small piece of statuary, shaded by a *Nim* tree, with *Poincianas* and some large *Ficus elastica*, single specimens, close by. At this point a mass of *Acalypha musaica*, in the angle of a shrubbery, affords a pleasing piece of colour.

On the left, close to the exit, lined on each side by thick bushes of *Bignonia stans*, is a plantation of tall *Eucalyptus rostratus*, some 60 feet high; the whole group, with some smart pieces of *Biota orientalis* beneath, is very effective. A big mass of *Beaumontia grandiflora*, some 6 feet high and several feet through, is close by, in fine condition; behind it are some tall isolated specimens of *Pinus longifolia*, with their long greyish-green drooping foliage.

Passing through the exit in this direction, along a road several hundred yards in length, lined on both sides with a fine row of *Bignonia adenophylla*, a fine avenue tree before referred to, one soon reaches the *Pikandra* Bagh; it is, however, worth while to make a slight détour to the left, to see a plantation, several acres in extent, of *Eucalyptus citriodorus*. Most of the plants are very young—only a few feet high, but in one place some older specimens have shot ahead. The stems of these are tall, thin, and straight, without a single branch, the heads being also small, and but scantily clothed with foliage; it certainly is not an ornamental tree as I saw it there.

On the opposite side of the public road, running alongside the *Sikandra* Bagh, is the commencement of the fruit and vegetable gardens, generally known as the horticultural gardens, also under Mr. Ridley's jurisdiction. The first fruit grove is a nice plantation of *Malta Oranges*, the bushes quite weighed down with fruit, many scores on each. At the end of this plantation is the vegetable garden, in which

all kinds are grown. On each side of the narrow paths, with which it is intersected, were channels for irrigation.

Passing from the vegetable garden through another plantation of *Oranges*, one comes to another piece, evidently just planted, 12 feet apart in the row, 4 feet between each row, planted diagonally. A plantation of *Loquats* beyond is particularly fine, and there is another of *Peaches*, bushes some 12 feet high. English varieties are, I think, not grown, anyhow they are not offered for sale; those they have, it is found best to transplant in December. In front of the *Peach* plantation is a row of an old Ceylon friend, the *Jack-fruit* (*Artocarpus integrifolius*).

Close here is a strip of ground, with a narrow path in the centre, between two young rows of a very pretty tree—*Polyalthia longifolia*. In this strip of ground are numbers of pots of seedlings, mostly annuals, all kinds seeming to be grown. I noticed pans thick with *Marigolds*, *Nasturtiums*, *Poppies*, *Phlox*, *Petunias*, and many others. In pots, ready for sale, were numerous plants, little groups of each, labelled both in English and vernacular. Behind this is a plantation of *Litchis*, whilst a large one containing all the best varieties of *Mangos* is close by. Round the *Mango* bushes are many hundreds of young inarched plants not yet cut off.

On approaching from that portion of the nursery where plants in pots are ready for sale or planting out, one passes by a triangular piece of grass, along one side of which are some nice *Cupressus funebris*, about 8 feet high, with masses of the stiff-growing, short-foliaged *Yucca serrulata* behind. Here is a pretty fernery, &c., also covered with stems of the useful *Mouje-grass*. The front of the house is covered with *Ipomoea palmata*, prettily flowering; whilst exactly opposite it are two small *Araucaria Cunninghamii* some 30 feet high. Behind the house is a splendid piece of *Arenga saccharifera*, some of its tall stiff leaves being 20 feet long; whilst opposite is a *Bougainvillea* trailing over a fine piece of *Albizia procera*, which cannot be less than 50 feet high. The side of the house nearest, and but a few yards from the road, is hidden by a thick hedge of *Calotropis alba*, a most useful stiff-growing plant for the purpose.

The house contains many plants in pots on brick beds ready for sale, and many planted out on the low rockery, with which a portion of the house is filled. Palms, foliage *Begonias*, *Ferns*, *Crotons*, and *Dracenas*, are those mostly one sees. In the centre of the house are two *Brownea grandiceps* planted out; they have already pushed through the roof, and will soon be too large for the place.

Leaving the house, and following the short path straight to the main road, one passes on the left a good thick plantation of *Biota orientalis compacta*, some twenty plants in all, 8 to 10 feet high, in good condition.

Ascending a short flight of steps, the path, at the top of which has a bed on each side planted with a few rows of *Croton bicolor*, *Russellias*, *Hibiscus*, and *Cannas*, the main road and exit is soon reached. A small path leading from the house by the side of the *Shah Najuff* is shaded on one side by tall *Millingtonias*, with *Hibiscus* beneath, and on the other by a shrubbery edged with *Alternanthera*. *Pilea muscosa* is also used as an edging plant.

James H. Veitch.

(To be continued.)

THE ALPINE GARDEN.

SEDUM MAXIMUM.

This is a grand plant in autumn, though I cannot find it anywhere, either figured or recommended. Nearly all visitors who see it in my garden admire it, and ask for it, but few get it, as it must be grown from cuttings in spring [or tubers. Ed.], when it is obscure and forgotten. It grows from 2 to 3 feet high, spreading its stems from the base. The stalks and the veining of the large, deep green, fleshy leaves, are deep brown-red; the flowers are in some individuals pale green, in others whitish with a brown centre. There is some confusion about the limits of this species, which *Linnaeus* described as *S. Telephium*. I find in the *Dictionary of Gardening* a fine variety described as a native of Portugal, but in *Willkomm's Flora of Spain* it is specially excluded from the Spanish Peninsula; and *Nyman*, in his laboriously-

compiled *Conspectus of the European Flora*, gives no habitat for the species westward of the meridian of Paris. I enclose specimens of two varieties. *C. Wolley Dod*, *Edge Hall, Malpas*. [See *Gardeners' Chronicle*, September 14, 1878, p. 336.]

COLONIAL NOTES.

TRINIDAD.

MR. HART, in his Report of the Royal Botanic Gardens, asserts that the mortality of a tropical town is not so great as is generally alleged. "It can," he says, "be proved beyond dispute, that the death-rate from zymotic diseases is generally much higher in London than in Trinidad. Fever and malaria have," he continues, "practically no existence."

The practice of shipping the best native *Orchids* for commercial purposes will soon exterminate the best varieties. Seedling *Sugar-canes* are shown to be more vigorous than those from cuttings.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

PEACHES AND NECTARINES.—Trees in late houses should be given every available means to aid them in ripening their wood. When the fruit is gathered, all weak or superfluous growths must be thinned out, that light and air may be admitted freely to those intended to carry next year's crop, and any of the shoots still growing may have their points pinched out. In cases of exceptionally unripe wood, not unfrequently met with in young trees, it is desirable to maintain a little fire-heat in the house during the day, with the ventilators standing open. When following this treatment, it is necessary to exercise a vigilant eye on both root and branch, in order that the former should not be limited in its supply of water, and to guard against red-spider finding a resting-place upon the latter.

YOUNG TREES making strong unfruitful wood may now be root-pruned. By attending to this at once, the plants will be enabled to form fresh root-lets before the fall of the leaf, and secure a fresh hold on the border. To successfully accomplish this work, the operator must be able to gauge the amount of check requisite to prevent further growth this year, and at the same time afford the plants the means of maturing those already made. Use forks for removing the soil, and employ a knife for cutting the roots. The present is also a good time for transferring young trees from outside walls to quarters under glass. Whenever the roots have been disturbed by pruning or transplanting, be careful that the soil is not allowed to become dry. In fact, they should be watered frequently, as their demands on the restricted area permeated by their roots will be great.

EARLY HOUSES.—The trees should be looked over, and the borders well-watered if there be any indication of dryness. Manures should still be supplied when watering if feeble subjects are being dealt with, and continued so long as the foliage remains green. More-vigorous trees, however, will be better without any stimulant, as it is possible to exceed, by over-feeding, the limit which marks the maximum of productiveness.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

POTTING-UP BEDDING PLANTS.—The potting-up of bedding plants struck in the open should be performed forthwith, 3-inch pots—having a piece of crock and a few half-rotted leaves, or a bit of moss, in the bottom for drainage—is the size most suitable for *Pelargoniums*, employing a light sandy mould in potting. Afford them the protection of cold frames or pits, and keep them close for a few days until the roots have taken to the new soil, when the sashes may be removed during favourable weather to insure a sturdy growth in the plants.

LOBELIAS.—Those having a good strain of *Lobelias* should pot-up a dozen or two plants from the mixed beds for propagating in early spring. Take the plants up with nice balls, and place them

in pots $4\frac{1}{2}$ or 6 inches in diameter, using light sandy mould, and about $1\frac{1}{2}$ inches of small crocks. Place the plants in a cool pit, where they can be shaded and kept close for a few days, until re-established, when more air should be given them. Before potting, cut away all flower-stems and straggling roots. The plants must be kept in a somewhat cool and airy temperature during the next four or five months, so as to prevent them from making growth before cuttings are required.

CALCEOLARIAS, ETC.—Cuttings of Calceolarias, Leucophytos, Gnaphaliums, Violas, and Pansies, that strike and winter best in cold frames, should now be obtained, lest the young growths get injured by frost. A shallow frame, placed on a hard surface of gravel, or clinkers covered with cinders and coal-ashes, in front of a south wall or fence, is best. Put a layer of short dung, to the thickness of about 2 inches, in the bottom, following this with 2 or 3 inches of light loam, and a surfacing of sand. In this, insert the cuttings, which should be from 2 to 3 inches long, sturdy, and short-jointed, in rows about 4 inches asunder, and at the same distance from plant to plant, making the soil about them firm with the dibber. Give them water to settle the soil, and keep the frames close for a time until the cuttings have callused, when a little air may be admitted. As soon as they show signs of being rooted, admit plenty of air to them on all favourable occasions, drawing the sashes off, and replacing them at night, the object being to prevent them making much growth before spring.

RESERVE GARDEN.—Any weeds that show among the plants in the reserve garden, should be pulled up. Should mildew appear on Violas, Pansies, &c., dust the affected leaves, while damp, with flowers-of-sulphur.

GENERAL WORK.—Gladiolus and Lilies have been making a good show for some time past, the former being unaffected by the recent heavy rains, and they should be freshly labelled before the flowers and stems die off. Note should also be made of any seedling flowers that may be worthy of preservation. Keep flower-beds well picked over, so that they may look bright and tidy until nipped by frost, and keep all tall plants well, but not too tightly, secured to the stakes.

THE ORCHID HOUSES.

By H. A. BURBERRY, *Orchid Grower, Highbury, Birmingham.*

TEMPERATURE, WATERING, AND RESTING.—Phalænopsis are maturing their last leaf for this year, and the Calanthes pushing up their flower-spikes; and in order that the former may finish properly, and the spikes of the latter be well advanced before the dull weather arrives, the temperature should range from 70° to 75° . For other East Indian subjects, 65° to 70° will be sufficiently high. I have before remarked that the Calanthes should be placed near the glass, and that they will withstand and benefit from full sunshine; and the Phalænopsis are best when suspended near the roof, being rather heavily shaded. Special care should be taken of Phalænopsis at this season, or an unnecessary loss of leaves may occur, owing to a too sudden exposure to strong light—I am referring to the maturing of the new growth. It will be understood that East Indian Orchids cannot endure the rigorous treatment which is found to suit Mexican species, but still a lesser degree of ripening may be brought about by exposing the plants to the sunlight gradually, by reducing, as the season advances, the supply of water at the roots and in the air, and admitting as much air to the house as can safely be done.

THE CATTLEYA, MEXICAN, AND INTERMEDIATE HOUSES.—The cool autumn night-air braces and strengthens all species of Orchids growing in these houses, the slender new pseudobulbs increasing in sturdiness, and new roots are thus profusely emitted, while the foliage becomes bronzed, or of an intense green colour. It is well to defer the use of the heating-apparatus till the last moment, 60° to 65° with air being a good night temperature, and that can be secured at present without artificial heat; but, should the temperature go below 58° , it must be employed.

THE ODONTOGLOSSUM-HOUSE.—At this season these plants are greatly strengthened, and if the condition of the roots is good, and the foliage is free from thrip, the plant will grow freely for the next two months. A night temperature of 55° , with air

freely admitted, and careful watering of the plants, will effect all that is needed.

THE DENDROBIUM-HOUSE.—A night temperature of 70° is necessary for a few weeks longer, a few species yet remaining which have not completed their growth. Many species are already at rest, and the greater number will soon be ready to be removed to the resting-house.

THE KITCHEN GARDEN.

By G. WYTHES, *Gardener, Syon House, Brentford.*

CURRENT WORK.—With a heavy rainfall in most parts, the ground will be in a saturated condition, and seed-sowing and other necessary work will have been delayed; but no time need be lost, as there are always some arrears of work to fetch up in surface-cleaning the ground where young crops are growing, and in that way accelerating growth. Every advantage should be taken of dry days to hoe all vacant as well as occupied land. The harvesting of the Potato crop will now require attention. So far, I have not found any advantage is gained by leaving the tubers in the soil, especially where shaded with trees, after the decay of the tops; indeed, the reverse is the case, as wireworms and disease often cause much loss. When storing, get the tubers as dry as possible before gathering them up, and do not expose them unduly to light. Heavy and good crops are the rule this season. Seed-beds of Lettuce and other plants will require frequent dressings of lime or soot, to prevent the ravages of slugs in damp weather, and should any of the seed have failed to grow, more should be sown on sheltered ridges, where they may get slight protection in severe weather. There are few better Lettuces for standing the winter than Hardy Hammersmith and Brown Cos. No delay should occur in getting the crop of spring Onions under cover as soon as growth is finished, as if left too long they will not keep sound. The bulbs, when placed in fruit-houses in which the fruit has been gathered, should be staged on racks or shelves, not on the damp soil, as when on the latter, and they lay at all thick together, they soon decay. Turn them on wet days, and sort them ready for storing. If early Leeks are required, the earliest lot should be dressed with soot or fish-manure, and if the land be dry, afford a thorough watering previous to earthing them up. It is also advisable, with the short thick-growing varieties, not to add all the soil at one time, but to do the work at intervals. Early-sown Endive will now be fit for blanching, which may be performed by tying them up, or placing a flower-pot over them, or a piece of slate or tile. Later sowings should be planted-out when large enough. The thinnings of Parsley, if carefully lifted and planted in frames or on raised beds, where protection can be afforded them in severe weather, may still be planted.

SALADS.—Those who have to provide these through the winter can often make up various corners for the autumn supply, so as to leave the plants in frames to the last; and there is much gain by choosing a variety of positions for the last supplies from the open, the produce not then coming into use at one time. In the open, blanched Lettuce is often killed by frost, whereas in sheltered corners, it will often escape the early frosts. The plants for winter supplies should be planted out in their permanent quarters as soon as ready.

PLANTS UNDER GLASS.

By R. MILNER, *Gardener, Penrice Castle, Swansea.*

CHRYSANTHEMUMS.—To have small examples of these in 4 or 5-inch pots, layering in pots should be practised, the shoots being taken from the surplus stock which was planted in the open ground in the early summer months. The pots used should be filled with rich sandy compost, and sunk up to the same in the soil of the borders. When the buds are well set, is the best time to layer them; strip a few leaves from the portion of stems to be covered with soil, and fasten them down with a stout wooden peg. The soil should be kept moist to encourage the shoots to send out roots, which will take place in about one month. When rooted, sever the layers from the parent plants, and place them in a cold frame, which should be kept rather close for a few days till they become established, when more air must be afforded.

MIGNONETTE.—To have this in the best condition in the winter, no time should be lost in sowing

seed. Pots about 7 or 8 inches in diameter are the most useful size, and these should be well-drained, filling them up to within 1 inch of the rim, with a rich compost consisting of two parts loam, one each of leaf soil and decayed manure, with a dash of silver sand and finely-broken old plaster or mortar added. Mix the whole well together. Fill the pots with this compost firmly to within an inch of the top, and make the surface level, and sow the seeds thinly and evenly over the surface, covering them only slightly with fine soil. Stand the pots in a cold frame, and keep the soil rather damp by frequently and lightly syringing it till the seedlings appear. Afterwards keep the pots well up to the glass, and admit the necessary amount of air so as to encourage a sturdy growth. Also pay attention to the thinning out of the young plants as growth proceeds, finally leaving them from four to five plants in each pot.

EARLY ROMAN HYACINTHS.—Lose no time in having the required number of these useful bulbs potted off, two or three being put in a 48-sized pot, according to the size of the bulbs; but where large quantities are forced for cutting purposes, shallow boxes may be utilised, the compost consisting of loam two parts, leaf-mould, and rotted cowdung and silver sand. Stand the pots in the open air, in a sunny, but sheltered position, and cover them with 6 inches of cocoa-nut fibre, or sifted coal ashes. If the soil is in a nice moist condition, no water will be required until they are brought into the forcing-houses.

TULIPS.—These, like the above, should have attention, especially the early forcing varieties, such as the Duc Van Thols, &c.; 5 or 6-inch pots are very useful sizes in which to grow them, placing from five to six bulbs in each, affording them similar treatment to that recommended for Roman Hyacinths. When growth is about 3 inches high, remove them to the forcing houses or pits in batches, according to the demand.

No delay should be made after this date in getting in the required number of Dutch bulbs.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, *Gardener, Mereworth Castle, Maidstone.*

GATHERING FRUIT.—This is a matter of daily attention, and should have precedence of other work. When gathering soft fruits, as Peaches and Nectarines, &c., too much care cannot be taken in doing so, the least bruise soon setting up decay. Most, if not all, wall-fruit should be gathered a day or two before it is eaten, being put in the fruit-room for that length of time. If fruit is for bottling, gather it when perfectly dry, and do not bruise it, or the flesh will be discoloured; we always gather the medium-sized fruits and those a trifle under-ripe for this purpose. As fast as the trees are cleared of their fruit, cleanse them of insects with the garden-engine. Should the trees have borne heavily, the soil at the roots may receive another thorough watering with clean water, or, better still, with manure-water. In all cases where the wood of stone fruits has been laid in thickly, and the fruits have been gathered, the trees should be slightly pruned, taking out such wood as has carried fruit, and filling in the vacancies with young shoots that have been reserved for that purpose. I would here remind those who may be intending to plant fruit trees, that they should take note of the most suitable sorts and varieties of fruit to plant when the proper time arrives. Do not overlook Dymond Peach, one of the best Peaches for ripening in the last week of August or the beginning of September.

PEARS.—These should be carefully looked after and gathered at intervals, but the late-keeping varieties should be left on the trees as long as it is safe to do so, for if gathered before they are ready, they not only shrivel, but are rarely fit for table use, the flavour being so poor and the flesh dry.

GRAFTS.—If not already done, some of these may be shortened back to 15 inches from the point of union, and others secured to light rods fastened to the stem of the tree or the branch, as the case may be. Young trees on grass should, if the grass has grown to any length, have the turf round about them mowed off, and the fastenings made secure, so that the bark does not get rubbed; this will oblige, in many cases, some fresh bolsters being placed between the stake and the stem.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

THURSDAY, SEPT. 15 { Brighton and Hove Chrysanthemum Society.

SALES.

MONDAY, SEPT. 12 { Great Annual Trade Sale of Stove and Greenhouse Plants at Dyson's Lane Nurseries, Upper Edmonton, by order of Mr. H. B. May, by Protheroe & Morris, at 11.
Dutch Bulbs, at Protheroe & Morris' Rooms.
Dutch Bulbs at Stevens' Rooms.

TUESDAY, SEPT. 13 { Great Annual Trade Sale of Winter-blooming Heaths, at the Burnt Ash Lane Nurseries, Lee, S.E., by order of Messrs. B. Maller & Sons, by Protheroe & Morris, at 11 o'clock.
Dutch Bulbs, at Protheroe & Morris' Rooms.
Orchids and Tree Ferns, at Protheroe & Morris' Rooms.

WEDNESDAY, SEPT. 14 { Annual Trade Sale of Winter Flowering and other Plants, at the Lea Bridge Nurseries, Lea Bridge Road, Leyton, Essex, by order of Mr. John Fraser, by Protheroe & Morris, at 11.
Dutch Bulbs, at Protheroe & Morris' Rooms.
20,000 Lilium Harrisii, at Stevens' Rooms.

THURSDAY, SEPT. 15 { Annual Trade Sale of Stove and Greenhouse Plants, at the Brimsdown Nurseries, Enfield Highway, by order of Mr. John Maller, by Protheroe & Morris, at 11.
Dutch Bulbs, at Protheroe & Morris' Rooms.
20,000 Lilium candidum at Stevens' Rooms.

FRIDAY, SEPT. 16 { Great annual trade sale of winter-blooming Heaths at the Longlands Nursery, Sidcup, S.E., by order of Messrs. Gregory & Evans, by Protheroe & Morris, at 11 o'clock.
Dutch Bulbs at Protheroe & Morris' Rooms.
Orchids from Mr. F. Sander at Protheroe & Morris' Rooms.
Dutch Bulbs at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 17 { 20,000 Early Roman Hyacinths and 10,000 Narcissus, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—58°.

We have on several occasions referred to the fruit evaporating process which is so universally in use in the United States of America, and is now making rapid progress on the European continent. Last year, it will be remembered by many of our readers that a demonstration was made of its usefulness at the Royal Horticultural Gardens at Chiswick, of which we gave an account in these columns. Lately, in the *Times* and several of the leading London daily journals, attention has been drawn to the process, and frequent enquiries are being made which tend to show that interest is gradually being awakened in the minds of at least some of our fellow-countrymen in a subject which concerns them very directly. But at present the fruit evaporator has not taken any direct hold of the minds of English fruit-growers. This is probably due to our insular caution in part, but perhaps more to the fact that very few English people are at present aware what fruit evaporating can do for the fruit grower in an economic point of view.

This season so far does not give much promise of superfluous crops of our hardy fruits, and so it may seem inopportune to draw attention to the fruit evaporator at the present time, but we think we can show that this is just the proper time for its claims to be considered. The present autumn will not be a busy time for most fruit growers. They will, consequently, have more time to enquire about this transatlantic appliance for making the best of their fruit crops. As our orchards will, in all proba-

bility, be lightly laden this year, there is the more reason for supposing that twelve months hence they will be more prolific, and if we can show that fruit evaporating is a sound reliable method for converting our perishable fruit crops into a commercial commodity which may be preserved in good condition for months or even years, we may perhaps induce some of our readers to consider whether it would not be to their interest to provide the means for meeting the contingency of a glut of fruit whenever it occurs, let it be next year or later.

There is another point worth mentioning. If our view is correct, the fruit evaporator should stimulate fruit growing in this country. If evaporated Apples, Pears, &c., once get into regular demand in the United Kingdom, there can be no doubt as to a large quantity being required to supply the market; and we can see no reason why our own orchards should not produce a large part of this supply. At present, hardy fruit-growing in England, in many districts, can scarcely be considered a business pursuit, by which we mean that it is not carried on as most successful businesses are. There are, to mention a single illustration, thousands of trees which might be judiciously grubbed up, and their places taken by newer and better varieties, of which we, fortunately, have a superabundance to choose from. No one familiar with the orchards of Worcestershire, Herefordshire, or Devonshire, will doubt this statement for a moment. The most popular and paying kinds of Apples, Pears, and Plums grown in the market-gardens around London, are practically unknown in the provinces, and yet these are the varieties which ought to be grown universally. Slowly information is spreading, but it takes a long time before inferior old kinds of Apples and Pears get replaced by the newer and better kinds in the orchards of the midland and southern counties. Let any one who doubts this statement, test it, by paying a visit to the fruit-growing counties outside the influence of the metropolis, and we have confidence that our opinion will be confirmed. Any competent person could easily compile from the valuable publication on "British Apples," which constitutes the Report of the Committee of the National Apple Congress, held in the Royal Horticultural Society's Gardens, Chiswick, in October, 1888, an unimpeachable list of culinary and dessert Apples, which might be planted everywhere suitable for Apple-growing in this country, with every reasonable prospect of success.

Inferior or unprolific kinds of our hardy fruits should be got rid of as soon as possible, and their places taken by such as can be relied upon. Worthless kinds should be either displaced or headed down, and grafted with better sorts. New plantations should consist of such of the better sorts as are found to thrive in any given locality. Were these two courses adopted, universally hardy fruit-growing would soon assume a position in this country which would be full of hopeful promise for the growers.

But there is another point to be thought about of considerable importance. If our fruit-growers were to act upon this advice, we should have now and again years when more fruit would be grown than a market could be found for in its natural condition, and the consequence would be supplies greater than the demand. It is at this stage that the fruit evaporator comes in to help us. It is proved by many years' experience in the States that evaporated fruits are wholesome, preserve their flavour, are available for pies, tarts, compôtes, &c., which cannot be dis-

criminated from those made from fresh fruit, and can be put on the market at readily saleable prices whenever it suits the producer's purpose to offer them for sale. In the last clause of this statement is the gist of the matter. Our perishable fruits can, without question, by means of the evaporator be rendered practically imperishable, and it only needs British skill and perseverance to produce them with economy, so that they may advantageously compete with similar products from America.

We commend the thoughtful consideration of this subject to all concerned, and we may say in conclusion, that any of our readers who may desire further information as to the fruit evaporator may, by appointment, see the evaporator at work in the gardens at Chiswick, and can obtain further particulars on application to Mr. A. LUDWIG, F.R.H.S., 16, Mincing Lane, London, E.C.

ROCK PLANTS AT CHISWICK.—The Royal Gardens, Kew, have made a munificent donation to the Royal Horticultural Society of upwards of 200 named plants for the rockery at Chiswick. Now that the public taste has set in, in this direction, this gift is particularly acceptable.

THE CHISWICK GARDENS.—These gardens have looked remarkably well this season, but good looks are of secondary importance as compared with utility. The trials of Asters, Phloxes, Cabbages, Beans, Tomatos, Figs, and other things, are most interesting and serviceable to horticulturists, as the judgments are formed by competent and disinterested experts at various times during the growth of the plants. We can only hope that means may be found for the more speedy publication of the results. At the recent Begonia Conference very many more of the general public attended than at the Drill Hall during the whole year, so that we cannot doubt that, if the nature of the work done at Chiswick were made known more widely, there would be more visitors to the gardens. A great deal has been done during the last year or two to renovate and restore what had been allowed perforce to go to ruin in the bad times not many years old.

NATIONAL CHRYSANTHEMUM SOCIETY.—A fully-attended meeting of the Committee took place at Anderton's Hotel, Fleet Street, on the 2nd inst., Mr. R. BALLANTINE in the chair. The chairman reported that designs had been selected, and the order given for the two HOLMES' Memorial Challenge Cups, offered for competition at the great show in November. Mr. C. HARMAN PAYNE reported that the Catalogue Revision Committee had met and made arrangements for the preparation of a supplemental catalogue, which they hoped would be ready by the October exhibition. A letter was read from Lord D'ISLE, consenting to have his name announced as one of the patrons of the society. A considerable amount of correspondence was read from affiliated and other societies, bearing upon the preparation of prize schedules. Nine new members were elected, including one Fellow, and the Stockport Chrysanthemum Society; the Borough of Loughton Chrysanthemum Society; the South Shields and Northern Counties Chrysanthemum Society; and the Lizard Chrysanthemum Society, were admitted to affiliation.

RATING OF GREENHOUSES.—In reference to this matter, which is an important one to many of our readers, and with regard to which some replies to correspondents have appeared in our pages, we publish the following letter:—"By Section 211 of the Public Health Act, 1875, the occupier of land used as a market garden or nursery-ground shall be assessed in respect thereof, in the proportion of one-fourth part only of the nett annual value. The case mentioned in the *Gardeners' Chronicle* of August 13 is exactly similar to the case of *Purser v. The Local Board* for



SHOOTS OF A GIGANTIC BAMBOO, CEYLON.

Worthing, in which case PURSER, the appellant, erected greenhouses or glasshouses on his land, and used same for the purpose of growing fruit and vegetables for sale in his business; and it was held that such land with the greenhouses upon it constituted a market garden or nursery-ground within the meaning of the above section of the Public Health Act, and that the appellant, PURSER, was liable to be rated to the general district rate in the proportion of one-fourth part only of the nett annual value of the property (that is, the land with the greenhouses thereon). CHARLES BUTCHER,

"Solicitor for the Nursery and Seed Trade Association, Limited."

CHICAGO EXHIBITION.—It is the intention of the Colorado World's Fair managers to distribute to visitors to the Colorado building some souvenir, which may be a valued reminder of the State. One design meeting with unusual favour has the State flower, the blue Columbine, mounted on a convenient-sized card, together with a Fern, or spray of green leaves. The wonderful beauty of the Colorado wild flowers is world-renowned, and every visitor would be pleased with such a souvenir. Added to this there will probably be a small specimen of mineral quartz, topaz, or stone, from some historic spot, such as Pike's peak. An effort is being made to secure for exhibition in the Horticultural Department of the World's Fair, a specimen of giant Cactus from the desert region of south-east California. This Cactus grows at times to a height of 70 feet. A specimen, when boxed ready for shipment, will weigh eight tons, and it will require an expenditure of something like 2,500 dollars to deliver it in good condition to Chicago. Ten Almond trees in full bearing will be transplanted in the Exposition grounds at Chicago from San Joaquin county, California. They will be furnished by P. B. ARMSTRONG, President of the ARMSTRONG Fruit and Nut Company, which owns an orchard of 1015 acres—one of the largest in the world. Mr. ARMSTRONG will also make a display of Peaches, no one of which will be less than a foot in circumference.

M. JOLIBOIS.—The *Revue Horticole* announces the sudden death of M. JOLIBOIS, the head gardener at the Luxembourg, Paris, and well known to orchidists and cultivators of Bromeliads. He was the raiser of a large number of hybrid Cypripediums.

SHREWSBURY HORTICULTURAL FÊTE.—The attendance here was remarkable, and the total receipts from all sources, £3700. The weather on the first day was all that could be wished, but up to 12 o'clock on the second day it was very doubtful, but it cleared up soon after 1 o'clock, and was fine afterwards, 40,000 persons paying at the gates, and with the holders of cheap tickets purchased beforehand, about £750 worth, subscribers and assistants, fully 53,000 persons were present, and everything passed off to the entire satisfaction of all. An enormous amount of work falls upon Messrs. ADNITT and NAUNTON, several hundreds of letters having to be opened and attended to, but eighteen years of their joint experiences as Hon. Secretaries has enabled them to fit their work into a system, and all goes merrily and well.

LARIX LEPTOLEPIS.—Messrs. PAUL & SON, Cheshunt, send us cones of this Japanese Larch from their High Beech Nursery. In general appearance it is like the common Larch, but the scales of the cones are rolled back at the ends.

RED CLOVER IN NEW ZEALAND.—Red Clover grows in New Zealand with great luxuriance, but until recently it was necessary to import all seed from England. DARWIN showed that the plants can be fertilised and made to produce seed only through the agency of bumble bees, and, as these creatures were unknown in New Zealand, attempts were made to introduce them, and they were finally, about ten years ago, carried the entire journey alive, while in a torpid state, in freezing chambers. Since then (remarks the *Colonies and India*) they have multiplied, and the red Clover bears seed.

MICHIGAN FLORA.—Under the auspices of the State Board of Agriculture, Dr. BEAL and Mr. WHEELER of the Michigan Agricultural College, have prepared a list of plants found wild within the limits of the State—a State nearly surrounded by the great lakes, which render the climate more equable than it otherwise would be, and having an area of 58,915 square miles. Various interesting notes relating to the geology, the distribution, the fitness of certain plants for cultivation and other purposes, are appended, which show that botany is not the dry uninteresting study that some folks imagine; the dryness rests with the student rather than the subject.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.—The accounts of the annual show of this Society, held on August 18, 19, and 20, have now been made up, and show a surplus of over £500, after paying the 50 per cent. additional prize-money which was promised by the directors on the condition that the *fête* proved a success. The acting directors are to be congratulated on the excellent result attending their labours. The surplus last year was £60.

CATTLEYA AUREA.—Messrs. F. SANDER & Co., send us specimens and a coloured drawing of a four-flowered inflorescence of a Cattleya received by them from G. LE DOUX, Esq., of East Moulsey. The peculiarity consists in the circumstance that each of the four flowers differs more or less from its neighbour, especially in the coloration of the lip. The lower flower has the lip of a rich purple at the base, and at the free end, which is deeply two-lobed, the disc is golden-yellow, with a narrow margin of purple. The second flower is similar to, but not quite like the first. The third flower is much larger, and is considered by Messrs. SANDER to represent a fine form of *C. aurea*. The sepals and petals are pale primrose-yellow, the lip rich purple, with radiating veins of a golden hue over the inner half of the lip, and the free end of a rich purple, the margin waved and frilled. The uppermost flower is of large size, has the two extremities of the lip purple, with radiating golden lines at the base only, the disc is golden-yellow margined with purple.

PRESTON AND FULWOOD HORTICULTURAL SOCIETY.—At the monthly meeting of this Society, held on Saturday, there was a large attendance of gardeners, professional and amateur, and it was claimed by some that these meetings are second only to those of the Royal Horticultural Society, so far as regards the excellence of the papers read and the interest taken in the proceedings. It is certainly the most important society of its kind in the north of England. At the gathering under notice, a paper was read by Mr. S. H. SCOTT, on "Rose Growing near Large Towns," and to illustrate his points, he had on exhibition a fine collection of plants. One stand contained twenty-four distinct varieties, and another stand was composed of twelve distinct hybrid perpetuals of remarkable beauty. The other exhibits were up to the average. The MAYOR (who was recently elected to the presidency of the Society), occupied the chair at the meeting.

PROLIFEROUS DIGITALIS.—Mr. STANTON, of Park Place Gardens, Henley, sends us specimens of *Digitalis ferruginea*, in which the inflorescence is more branched than usual, and in which each flower is wholly of a green colour, with calyx, corolla, and stamens otherwise normal, but the place of the pistil is occupied in each case by a shoot bearing numerous small leaves and rudimentary flowers. This is probably the result of excessive development of the vegetative system as compared with that of the reproductive organs.

WINCHESTER AND DISTRICT GARDENERS' IMPROVEMENT ASSOCIATION.—A number of the members of the above, had their first annual outing on Wednesday, August 31, paying a visit to Messrs. SUTTON & SONS' seed establishment and seed farms, at Reading, and to the Reading Flower Show, which was held on that day. The party returned to Win-

chester in the evening, after spending a pleasant and profitable day.

ASTER TRINERVIUS.—The *Revue Horticole* gives a figure of a real China Aster, which is wonderfully like its North American congeners. It has oblong, remotely-toothed leaves, and terminal panicles of flower-heads, with lilac rays, and yellow-disc florets; a description which would apply to numberless American forms, but the venation is said to be tricostrate, though hardly so represented in the plate. The plant is extremely variable, and some forms of it are much better than others. It was introduced from Canton by M. LOUIS PAILLET, nurseryman, of Chatenay, Seine.

"PITCHER" GROWTHS ON CABBAGE-LEAVES.—Everyone who has visited the Royal Gardens at Kew, is familiar with those curious types of vegetation which are popularly called "Pitcher-plants." Not everyone, however, is aware that one of the commonest English garden plants, viz., the Cabbage, will sometimes develop these ascidiform structures. In BONNIER'S *Rev. Gén. de Bot.*, iii., p. 33 and p. 337, there are two papers by Mr. W. RUSSELL, in which several instances are described and figured of this curious growth on Cabbage leaves. One instance is of a funnel-shaped pitcher, which may be compared to a leaf with a long stalk which has been rolled upon itself, the margins having become more or less completely united. Another case is of a pitcher-like structure springing from the upper surface of the leaf. From the arrangement of the vascular bundles, RUSSELL regards these epiphyllous pitchers as examples of the doubling of a normal leaf.

VERNONIA PODOCOMA.—A shrubby Composite, with large cordate ovate acutely-toothed leaves, and large loose terminal panicles of pinkish flower-heads, giving the same effect as the flowers of *Valeriana officinalis*. It is a native of tropical Eastern Africa, from Abyssinia to the Zambesi and westward in Angola. It flowered last winter in the succulent-house at Kew. *Bot. Mag.*, t. 7255.

M. RODIGAS.—We learn with great pleasure that the French Government has nominated M. RODIGAS, the Director of the School of Horticulture of Ghent, a "Chevalier du mérite Agricole." Our eminent colleague is indefatigable in his labours for the advancement of horticulture.

TULIPA BILLIETIANA, figured in the last number of the *Botanical Magazine*, t. 7253, is a native of Savoy, with yellow flowers, the three outer segments acute. It flowers earlier than those of the *Gesneriana* section.

THE GREEN ROSE.—An American monthly says:—"Some of our contemporaries are interested in the existence of a green Rose. This has been a very well-known plant in the vicinity of Philadelphia for probably a century. There is no essential difference between the petals of a Rose and a Rose leaf, and the transformation of one to the other in Nature is very easily accomplished. A green Rose, therefore, is nothing more than a Rose in which in forming the flower the Rose has persistently refused to allow its leaves to be transformed to petals—they still continue as leaves. Outside of its interest as showing the relation between leaves and flowers there is no other interest in the green Rose. Certainly, it has no beauty."

ELECTRIC HEATING.—MM. GUSTAVE OLIVET & Co., of Geneva, according to the *Revue Horticole*, have devised a plan of heating which, if it answers in practice, will have great advantages. An electric current is generated by a dynamo, as for the electric light, and conveyed to a metal receiver, which speedily becomes hot, and diffuses heat where required. The advantages are absence of all deleterious gases, complete security, uniform temperature, capable of regulation at will, facility of conversion into light when required, by means of a "commutator;" absolute cleanliness, and facility of transport. Once the dynamo is in position with its conducting wires,

the heating apparatus is very inexpensive, not costing more than ten francs. We hope we shall soon hear more of this system of heating, which appears to us very practicable, and if so, it will need no recommendation to those who have to look to the fires.

GLOXINIAS.—We have lately had several specimens submitted to us of Gloxinias, in which the central leaves of the tuft were black and rotten. No trace of insect or of fungus was observable, though the rotten condition suggested the presence of bacteria, or of some mould-like Peronospora, and these may still ultimately be found. Our French friends suffer from the same plague, and treat it, according to the *Revue Horticole*, by cutting out the affected parts, and dusting the wound with charcoal and lime in equal proportions.

THE UNITED STATES.—It is rather discouraging, from an American point of view, to find that, so far, at least, foreign horticulturists show a greater interest in the Exposition than those in this country. At the recent convention of the Society of American Florists, Mr. THORPE, Chief of the Bureau of Floriculture, called attention to this fact, impressing upon the Society the need for prompt action, since European exhibitors have already called for far more space than Americans. A large collection of hardy Roses is already sent in by an English grower, with the intention of providing a grand show next June. The horticultural building is of such immense size, that the effect of ordinary decorative plants would be entirely lost, especially under the lofty dome. To obviate this difficulty, a miniature mountain of rockwork is being erected; it will be 60 feet in height, having a base 80 feet in diameter. The present intention is to begin the spring exhibit with early bulbs, followed by Pansies, the latter flower—which is the greatest of all spring favourites in America—being used in very large quantities. Roses will follow in June, Gladioli in August, while the early autumn is to be brilliant with Chrysanthemums. In planting perennials for permanent effect, the winter climate has to be considered, the cold usually being very severe, intensified by the cutting late winds. California, always a land of great things, promises to furnish an entire Orange grove; it will fill a train of twenty-five cars in transportation, while among the promised trees are a Date Palm 25 feet high, and a San Diego Palm 50 feet in height. One of the most promising landscape features in the vicinity of the Horticultural Hall is the "Wooded Island," an irregular islet, containing about 16 acres. This was originally a bit of dreary swamp, only relieved by a few scrub Oaks, but it is now being formed into a charming wild garden. The design is to make a display of native herbaceous plants as the chief feature, though a few foreign plants will be admitted, all of the herbaceous class. Surrounding the island is an aquatic garden. The collection of Irises on the island will be extensive, and promises a fine show for spring and early summer. The hardy herbaceous plants which we see here are not yet fully appreciated in America, and the wild garden is almost unknown, so Mr. THORPE's "Wooded Island" is likely to prove quite a missionary effort. *E. L. Taplin, Chicago, U.S.A.*

PLANT PORTRAITS.

AZALEA HEXE, *Garden*, August 16.

CYPRIPEDIUM CALURUM var. *ROUGIERI*, *Orchidophile*, June.

DICHRISANDRA ANGUSTIFOLIA, *Illustration Horticole*, t. 158.—Decorative stove plant, with leaves broadly lanceolate, deep green above, transversely barred with white, claret-coloured beneath.

DISA COOPERI, *Bot. Mag.*, t. 7256; see *Gardeners' Chronicle*, August, 1892.

FUCHSIA TRIPHYLLA, *Le Jardin*, July 20.

MASDEVALLIA ARMINI, *CARDERI*, *CAUDATA*, *COCINEA*, *CORIACEA*, *DAVISI*, *ESTRADE*, *POLYSTICTA*, *TRIANGULARIS*, and *WAGENERIANA*, all figured in part iii.

of the *Genus Masdevallia*, issued by the Marquess of Lothian, K.T.; plates and descriptions by Miss Florence H. Woolward.

NICOTIANA TOMENTOSA = *N. COLOSSEA*, *Bot. Mag.*, t. 7252.

PARANEPHELIUS UNIFLORUS, *Garten Flora*, t. 1377.

PEPEROMIA METALLICA, *Illustration Horticole*, t. 157.—Decorative stove plant, with leaves small ovate-lanceolate, dark green above, with a central silvery blotch, pale purple beneath.

STEMONA CURTISI, *Bot. Mag.*, t. 7254.

TULIPA BILLIETIANA, *Bot. Mag.*, t. 7253.

VERNONIA PODOCOMA, *Bot. Mag.*, t. 7255.

BOOK NOTICE.

THE GENUS MASDEVALLIA.*

In this part, Miss Woolward gives us the third decade of her drawings and descriptions of the species of this striking Orchid genus. We hear she is well on with material for Part IV., so that timid subscribers who shrink, perhaps not without reason, from taking up a new venture, may feel assured that the present work will be well carried through. The coloured drawings and dissections are as faithful as ever, and for accuracy of description and fulness of information, the text maintains the standard of excellence of previous parts, while a slight alteration in the mode of insertion of Consul Lehmann's notes on the habitat of those species he has been able to study in their native homes, will prevent mistakes as regards authorship for the future. In Parts I. and II., the authoress, anxious to give full credit for the help, had Lehmann's notes printed at the end of her descriptions, and appended his signature. To a careless reader, the signature might seem to govern the whole description, a view adopted in an important continental herbarium, where the work was catalogued as "Lehmann's *Masdevallia*." With the present arrangement, this will be no longer possible.

Two of the most well-known species are discussed in Part III., *M. caudata* and *M. coccinea*. The former is perhaps better known as *M. Shuttleworthii*, a species of Reichenbach, which, like various others of the eccentric professor, will not stand the light of investigation. The colour variety *xanthocorys* is also figured, and a short account is given of the hybrids in which *caudata* takes a part.

The brilliant *M. coccinea* is one of the most abundant and variable species. *M. Lindeni* and *Harryana*, which are mere colour forms, may be seen at every show where Orchids are included. It certainly deserves its native name, "*La Banderita*," "the little flag." *M. coriacea* forms the type of a well-marked section, many members of which, as first pointed out by Miss Woolward, have large nectaries at the base of the lip; this is carefully figured in the present instance. Under *M. Estrade* is included another of Reichenbach's species, *M. ludibunda*, which Miss Woolward considers only a variety of the first, and the differences are certainly very slight. The variety is figured, but not accounted for in the explanation of the plate. The other species contained in Part III., are *M. Arminii*, *M. Carderi*, the brilliant yellow *M. Davisii*, *M. polysticta*, an extremely variable species; *M. triangularis*, and, lastly, the pretty little *M. Wageneriana*. *A. B. Rendle*.

HOME CORRESPONDENCE.

THE WHITE-FLOWED FUCHSIAS.—The first batch of Fuchsias with white corollas was distributed by Messrs. E. G. Henderson & Son, then at the Wellington Road Nurseries, St. John's Wood, in 1855. They consisted of two raised by Mr. Story, viz., *Mrs. Story* and *Queen Victoria*, each of which were announced at one guinea per plant; and three others, viz., *Empress Eugénie*, *Lady of the Lake*, and *Water Nymph*—these were priced at half-a-guinea each, no raisers' names being affixed to the

three last-named, but it was generally believed they were also raised by Mr. Story. *Mrs. Story* was figured in the *Florist* for 1855, and it is stated therein, as accounting for the origin of this type of Fuchsia (*Mr. Story* being then dead):—"It is believed that Mr. Story obtained pollen through Mr. Veitch, of Exeter Nurseries, from a species with a small and almost white corolla, and transferring it to a dark variety, obtained ultimately the batch of seedlings of which *Queen Victoria* is one." The species alluded to as that from which pollen was obtained died shortly after it had flowered. As far as my memory serves me, the actual fact was, that Mr. Story, some years before, raised a small-flowered Fuchsia, which, beyond having a white corolla, was considered of no value; it, however, served the purpose of inspiring its fortunate owner with a desire to improve it; and by well-directed operations, and after a few generations of seedlings, varieties possessing improved form, good substance, and commendable habit rewarded the skill and patience of Mr. Story, as was seen in *Mrs. Story* and *Queen Victoria*. I was at the Royal Nursery, Slough, in 1855, and I remember the great interest aroused by the advent of these Fuchsias, and how novel and distinct they were considered when they bloomed. But they were at first spare growers and somewhat shy bloomers—defects which were soon remedied in succeeding years. In the following year (1856), the first double white-petalled Fuchsias put in appearance, viz., *Galanthiflora plena*, which, I think, came from abroad; and *Ranunculæflora*, also raised by Mr. Story; and, by the same raiser, *Countess of Burlington*, single-flowered, also with a white corolla. *Maid of Kent* was sent out in 1855, and *Venus de Medici* in 1856, both raised by Mr. E. Banks, and both still grown as decorative and exhibition varieties. *R. Dean*.

HYBRID BLACK CURRANT × GOOSEBERRY.—Your correspondent (August 6), Mr. Culverwell, is in error as regards his hybrid, as seventeen or eighteen years ago I knew of two large bushes in a garden at Ashford, off which I have gathered and eaten fruit. These two bushes were raised from cuttings, brought from the Isle of Wight by the late Dr. Maund, and if my memory serves me truly, his father raised the hybrid there. The parents were Black Currant and the small red-rough Gooseberry, but which was the pollen-parent was not known. The branches of this hybrid were erect, sparsely spiny, leaves five-lobed irregularly serrate, and of a dark green colour, glaucous above, and when crushed gave out the unmistakable odour of the "gazel," as we call the Black Currant in Kent. The fruits were axillary, and produced on the wood of the year before, solitary, but occasionally in pairs, and rarely with a small undeveloped fruit at the apex of the bunch, denoting the Currant cross. In colour the fruit was black, or dark purplish-red, slightly pubescent and carrying the withered flower at the point, as the parents do. In flavour they were sweet, but at the same time astringent, and with the pronounced flavour of *R. nigrum*. Last year I tried to get some cuttings of this hybrid for my friend, Mr. T. Laxton, but found to my regret the trees had been destroyed. It is certainly singular that *Rib. nigrum* should hybridise with *R. grossularia*, as Loudon says (*Ency. Plants*, p. 191), "no varieties have been raised of this species, nor will it produce hybrids, as far at least as has been tried with other cultivated sorts of *Ribes*." *Senec.*

BEDDING AT KEW.—*Tropæolum Vesuvius* is considered one of the finest bedding plants here this summer, bright scarlet, very dwarf, and free-flowering. *Lobelia King of the Blues* and *L. pumila magnifica* are both good. *Violas*: the best white is certainly *Countess of Hopetoun*, far ahead of *Snowflake*; amongst the yellows, *Ardwell Gem* or *Greiveli* is the best; blues, *True Blue*, *Montgomeryana*, and a good light *Pilgrimage*. *Queen of the Belgians* is the best white *Pelargonium* for outside work; scarlets, *King of the Bedders* and *Henry Jacoby*; two good pinks are *Titians* and *Mrs. Leavers*. *Carnations*, apparently, do not flourish at Kew. They are great favourites, and many varieties are grown, but *Raby Castle*, and the old crimson and white *Clove* are about all that succeed well. A really good mixed border, near the range of houses (7 to 12); has been very showy all the summer—a feature, indeed. But the recent heavy rains have somewhat marred its beauty. *J. B.*

WASPS.—Seeing the statement in a contemporary, that "it has been calculated that the damage done to ripe fruit alone during a season by the above-

* Issued by the Marquess of Lothian. Plates and Descriptions by Miss Florence H. Woolward. Part III. Price, £1 10s. (Porter, London.)

mentioned pests exceeds one million pounds sterling," one is tempted to suggest remedies. Now, without going into figures, there is no doubt that gardeners, fruit-growers, and others, do suffer almost incalculable loss from the ravages of wasps, whilst the ranks, even of humanity itself, are yearly decreased to some slight extent, thanks to the fatal nature of the sting on certain constitutions. It is the duty, then, of everyone, I contend, to assist in the destruction of an insect which, so far as I have been able to discover, performs no good function in life, and is hatched only to annoy (!). A series of experiments with various kinds of exterminators, has proved to me that nothing is so effective as a chemical compound called "Death to Wasps," and for which I have looked through your advertisement columns in vain. Its effect is instantaneous and painless, as I have found after a trial of four or five years, and I am merely writing *pro bono publico* in thus bringing it to the notice of your many readers. I may add that every queen wasp observed in the spring or early summer should be destroyed at all risks. *Vespa*. P.S.—Since penning the above, I have had my attention called to the death of an unfortunate lady in Devonshire through a wasp becoming entangled in her hair. A sad end to an accomplished woman. *V.*

CONFERENCE ON BEGONIAS AND APRICOTS.—I regret that I was prevented from being present at the recent Conference on Begonias and Apricots at Chiswick. The rise and progress of our present race of tuberous-rooted Begonias and their possibilities in the near future form a most interesting chapter in the history of horticulture of recent years. Had I been present, I should have deprecated the enlargement of the flowers in the future, but would afford welcome to greater variety in form and colour and in hardness. The introduction of variety in the way indicated would be better than the reducing all to one uniform circular outline, and creating flowers, which might (so far as form is concerned), be Hollyhocks, or double Balsams or Camellias, rather than Begonias (*Gard. Chron.*, p. 244). Had I been at the Apricot Conference I should have liked to ask the French reader of the paper as to the general lack of flavour of French Apricots and those grown on the Continent generally. The list of sorts grown in France will doubtless be published in full in the *Journal of the Royal Horticultural Society*. It is probable that the generally inferior flavour of French Apricots is due to the practice of raising them from seed, to climate, culture, or other causes. Generally, too, French Apricots are smaller, paler, as well as more insipid than English ones, seldom larger or so large as the Kaisha—without a trace of its nice flavour. It is to be hoped that M. Jamin's views were very clearly ascertained as to the loss of the branches of Apricots in France. Very diverse views have been circulated on this matter, some asserting that by the use of the seedling trees this provoking malady is quite overcome. The effect of frost as a producing cause of ulcer or canker in Apricots has probably been exaggerated, seeing that the trees in the coldest countries are not the worst sufferers from these maladies. It is less prevalent in Scotland and in the northern counties of England than in the east or south. It seems also amenable to root-pruning, lifting the roots, and liberal culture. I see in to-day's paper that Mr. G. Wythes made a fine show of Apricots at Earl's Court the other day, carrying off all the leading prizes. I had the pleasure of seeing his trees recently, the finest high wall of Apricots without spot or flaw either in leaf, branch, or fruit that I have seen for many a year. It is hoped that the papers of Messrs. Rivers of Sawbridge-worth, and Mr. Smith of Mentmore, on Plums will soon be published in full. There is more money in Plums than in any other English hardy fruit at the present, and no greater services can be rendered to growers and the general public, than trustworthy instructions by experts. In spite of the comparative failure of the Plum this year, planting is likely to be carried on extensively in November, and instructions as to what and how to plant will be of much value. *D. T. F.*

SCIADOPITYS VERTICILLATA.—Having noticed the remark by "H." in his interesting paragraph on this Conifer (*Gardeners' Chronicle*, Sept. 3, p. 271), that this tree is of a slow-growing nature, I think it may be worth while to mention that there is a specimen in the Cambridge Botanic Garden, growing at the rate of not less than 1 foot in height each year; it is now 8 feet 10 inches high. It is planted in peaty soil, in a low sheltered part of the garden,

where there is a good deal of moisture. The low temperatures of the last two winters have done it no injury whatever. *R. Irwin Lynch.*

—We have in the gardens of which I have charge, two plants of this species of Conifer, which have been in the place twelve years, and I cannot say they have not increased in size since they were planted, but it is very little. It is one of the few trees which I must admit I have not been able to grow, no matter how I try; fresh sites and soils have all had a turn, whilst the results are the same. The best Orchid peat, mixed with leaf soil, was last tried, but the effect of this addition to the staple is the same. Of water of different kinds the plant has had enough. After what "H." p. 271, says of it, I feel inclined to take fresh heart, and give it another trial. *E. M.*

PAULOWNIA IMPERIALIS (see p. 280).—Last year I again raised this from seed supplied by Mr. Child, of Floral Park, New York. I had three seedlings. One, before it was a year old, I planted out in a field (in a sheltered spot for the Cotswolds). It died down from frost, but it has sprung up from the roots, and is now over 1 foot high, and healthy. No. 2 survived the winter in a perfectly cold house. This I have given away to be planted out. No. 3 also survived in a cold house, won 3rd prize as a specimen plant at our show, and is now planted out to harden for the winter. I planted it deeply, i.e., above the commencement of this year's growth. It still stands 3 feet 2 inches above the ground, and the leaves are more than 1 foot each way. It has not flowered yet. I have also raised from Child's seed the *Ailanthus glandulosa* (Chinese Tree of Heaven). This also, if cut down by frost, will spring from the roots. But mine survived last winter in the field. *A. P. Bower.*

—Close to where I am writing, there is growing a handsome specimen of this tree, fully 20 feet high, and 40 feet in the spread of its branches. It flowers freely every year. The frosts of the last two winters, although they were the most severe ones that I have experienced in South Hampshire, do not appear to have injured this tree. The Paulownia is a tree which requires, for full development, ample space, as the growth is more inclined to extend laterally than to ascend. As a lawn tree it is unequalled. *E. Molyneux.*

SALVIA HORMINUM AND INSECTS.—The question raised on page 279, "How do flowers attract insects," reminds me of this little-known annual; which, although rather ornamental, and cultivated in English gardens in the time of Gerard, is seldom seen. The plant, having shabby inconspicuous flowers, hidden in the axils of the leaves, and not being satisfied with them, has provided itself with showy tufts of leaves, probably to attract insects at the top of each stalk, which are either purple, pink, or white, varying in different individuals with the colour of the flowers. It might be interesting to grow the colours separately, and watch whether they are visited by the same insects equally. The plant is of the Sage or Clary tribe, and is common in south-eastern Europe. *C. Wolley Dod, Edge Hall.*

PRUNUS PISSARDI.—The *Prunus Pissardi* is, we believe, the earliest tree to flower, and one of the very last to lose its leaves. It is budded or grafted on the Myrobalan, or the Brompton or Plum Stocks. Myrobalan has green leaves and thorns. It is a plant that is now being largely grown by nurserymen as a foliage tree, and very handsome its dark purple leaves are; but we believe it seldom fruits in this country. *Shuttleworth & Co., Limited, Fleet, Hants, and Peckham, S.E.*

SEEDLING TUBEROUS BEGONIAS.—I send for your inspection a few flowers of Seedling Double tuberous Begonias taken from plants growing in the borders. These plants were noticed by M. Goldring in the pages of the *Gardeners' Chronicle* the week before last. The plants are all from seed sown last spring. You will notice what a stout petal and stalk the darkest flower has. The lighter-coloured and white varieties are not in the best form, they having suffered from the recent wind and rain more than the others. *F. Geeson.* [The flowers are of extraordinary size, and good quality. *Ed.*]

LETTUCE-GROWING BY ELECTRICITY.—If your correspondent, who signs himself "Non-believer," had dubbed himself "Non-arithmetician," he would have given a correct appellation. The figures given by him in his reference to electrical Lettuce culture, seemed to me so incorrect that I ventured to work them out for my amusement, and here is the result.

The Lettuce-house in question is given at an area of about one-third of an acre; we will, as your correspondent has done, take it at an exact one-third. Now, the superficial area of an acre is 4840 square yards, one-third that area being 1613 $\frac{1}{3}$. How "Non-believer" makes it to be only 1493 $\frac{1}{2}$ square yards, I do not know. Then the further developed area of this third-of-an-acre is 14,517 square feet, and this number multiplied by 144 gives a total of 2,090,448 square inches. Now, the number of plants taken off the area from one cropping is 24,000, and the above number of inches divided by this lesser number, instead of giving to each plant an area of only 8 $\frac{1}{2}$ square inches, which is hardly 3 inches square, really gives to each plant a trifle over 87 inches, or an area of 9 $\frac{1}{2}$ inches by 9 inches—such a diverse result, that it is singular that anyone should have fallen into such an arithmetical error. I admit it would be difficult in the open ground to grow our best Cos Lettuces in even an area of 87 square inches, but, under glass, and with a crop literally forced into very rapid maturation, it is quite possible, and we can very well imagine that every leaf would be tender, and even delicious eating. Why the ground should be ploughed, it is hard to understand, as half-a-dozen sturdy labourers should do it in a day. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 6.—The meeting held in the Drill Hall, James Street, Westminster, was of much interest to lovers of Orchids, Gladioli, hardy perennials, and fruit, the display being an especially fine one with regard to the first two named. The hardy kinds of fruits were clear in the skin, and of fair development for this period of the autumn. The display of a numerous collection of varieties of Runner Beans of a very diverse character, afforded a valuable object-lesson to market and private growers, who were, alas! but few in number.

Floral Committee.

Present: W. Marshall, Esq., chairman; Messrs. B. Wynne, H. Herbat, D. P. Laird, R. Dean, C. T. Druery, G. Phippen, H. B. May, G. Gordon, N. Davis, C. J. Salter, C. E. Pearson, J. Bennett-Poe, W. Goldring, J. Fraser, and W. H. Williams.

Messrs. Kelway, of Langport, Somerset, exhibited a fine collection of Gladiolus spikes, reaching almost from end to end of the Hall, though scarcely so good as in other seasons. Many of the varieties arrested attention, and Awards of Merit were granted for Numa, a good and large flower, the ground of which is white, flaked with rose, and the bottom petals slightly sulphured. Also for Poetis, a pretty bluish-white variety, slightly marked with yellow and rose (Silver Flora Medal).

Messrs. J. Veitch & Sons, Chelsea, exhibited a plant of *Retinospora squarrosa* sulphurea, in habit exactly similar to the type, but with a sulphur instead of the glaucous tinge. Also sprays of *Clerodendron trichotomum*, and of *Bignonia grandiflora*.

A stand of seedling varieties of Cactus Dahlias, of considerable merit, came from Messrs. Keynes, Williams, & Co., The Nurseries, Salisbury. Awards of Merit were granted to the following: Bertha Mawley, scarlet, good; Mrs. Bashan, pink, falling to a bronze in the centre; Countess of Radnor, pink, with a tinge of yellow; and Kaiserin, a very pretty yellow.

Messrs. Wm. Cutbush & Co., Highgate, contributed a collection of cut herbaceous flowers, including *Statice latifolia*, *Tradescantia virginica rubra*, *Coreopsis lanceolata*, *Harpalum rigidum*, varieties of *Helianthus* and *Gladiolus*, and a number of blooms of Hollyhocks, &c. (Bronze Banksian Medal).

Messrs. Cannell & Sons, Swanley, had blooms of their double Begonias, Rosebud (pink) and Octavie, a very good white Camellia-like bloom.

From the Royal Horticultural Society's Gardens, Chiswick, came a collection of varieties of *Helianthus* and *Rudbeckia*; also some sprays of *Fuchsia fulgens*.

Messrs. Pitcher & Manda, Hextable, Swanley, Kent, sent a collection of cut herbaceous flowers, in which we noticed the following:—*Clematis Davidiana*, *Eupatorium perfoliatum*, *Poterium canadense*, *Monarda didyma*, *Lilium Batemanna*, auratum, and *L. a. macranthum*, *Asclepias incarnata pulchra*, &c. (Silver Banksian Medal).

Messrs. Hugh Low & Co., Clapton, contributed a handsome group of *Lilium Wallichianum superbum* in full bloom (Silver Banksian Medal).

A very good double Marigold, named Prince of Orange (large scarlet), came from Messrs. J. R. Pearson & Sons, of the Chilwell Nurseries, near Nottingham.

A very fine Canna, called Star of '91, a rich scarlet, came from Mr. C. L. Allen, Floral Park, New York, and was granted an Award of Merit.

Mr. Richard Dean, Ranelagh Road, Ealing, sent a collection of hardy flowers, of great merit, including Asters, Zinnias, Anemones, &c. Bronze Banksian Medals.

Some new single Dahlias and seedling Phloxes came from Mr. Jno. Farquharson, Wrexham.

A seedling Tacsonia, named Smythiana, came from Mr. Smythe, gr. at Basing Park, Alton, Hants. The interior of the flowers are brilliant scarlet, and the tips of the calyx segments yellowish-green; the leaves are dark green, and glabrous.

Mr. T. B. Hayward, Woodhatch Lodge, Reigate, showed *Passiflora* ×, a result of crossing *P. racemosa* and *P. quadrangularis*. The flowers are pleasing in form, but the colours are rather dull. It was figured in these pages December 22, 1888.

Orchid Committee.

Present: Dr. Maxwell T. Masters, F.R.S., in the chair; and James O'Brien (Sec.), F. Sander, J. B. Hayward, Rev. E. Handley, E. Hill, H. M. Pollett, W. H. White, Chas. Pilcher, and H. Ballantine.

There was an extraordinarily fine show of Orchids, to which Messrs. F. Sander & Co. of St. Albans contributed the best group. Among their most noteworthy specimens were a new *Cattleya* of the *C. imschootiana* class, and probably a natural hybrid. It was named *Cattleya Oweniana*. The flowers were equal in size to those of *C. Hardyana*, to which the rich dark crimson, gold-veined labellum bore much resemblance. The sepals and petals were cream-white, with a faint purple tinge at the tips (First-class Certificate). Messrs. Sanders' group also contained eight large specimens of *Vanda Sanderiana*, bearing together 124 blooms, one of the best, a grand variety, having six spikes; several good *V. cœrulea*, *V. Kimballiana*, *Lycaste Skinneri* alba, a batch of the pretty *Dendrobium bigibbum*; several *Cattleya Warscewiczii* *Sanderiana*, and good representatives of the other *Cattleyas* of the season; several *Dendrobium*, *Phalenopsis Schroderiana*, three of the beautiful *Cypripedium Chamberlainianum*, *C. Youngianum* ×, *C. picturatum* ×, *C. Macfarlanei* ×, *C. radiosum* ×, *C. polystigmaticum* ×, and the new hybrid *C. Mrs. G. D. Owen* × (*superciliare* × *villosum*), a massive variety, of good shape; *Odontoglossum Pescatorei*, *Roebelin's* variety, a fine white, with the labellum heavily marked with purple; *Cynoches chlorochilon*, *Catasetum purum*, &c. (Silver-gilt Medal). Next in importance was a group of *Dendrobiums* from W. B. Farnham, Esq., Quorndon House, Loughborough (gr., Mr. Cooke). There were thirty-six plants of *Dendrobium Phalenopsis Schroderianum*, in every shade of colour to be found in the species, and exhibiting good culture, as also did the batch of well-bloomed *Dendrobium formosum giganteum*, set up with them, and the whole were tastefully arranged (Silver Flora Medal). From the gardens of Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr., Mr. W. H. White), came a large basket of sturdy plants of the bright vermilion-coloured *Habenaria militaris*, which is cultivated there with so much success, and for which a Cultural Commendation was awarded; also a finely-flowered specimen of *Mitonia spectabilis* *Morelliana*.

W. R. Lee, Esq., Beech Lawn, Audenshaw, near Manchester, sent *Cattleya speciosissima* var. *Sanderiana*, one of the handsomest and purest of white *Cattleyas*. Its single large flower bore but a faint lemon-yellow tinge in the throat. It is a very fine and distinct *Cattleya* (First-class certificate).

Messrs. J. Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, exhibited another of their remarkable hybrid Orchids in *Sophro-Cattleya Veitchii* × (*Lælio-Cattleya elegans* (Schilleriana) ♂, *Sophranitis grandiflora* ♀). The flowers equal in size those of *Sophro-Cattleya Batemaniana* ×, and are borne on a plant only 3 or 4 inches in height; the sepals and petals are of a clear rosy-red, with an orange or scarlet tinge, the veining being of a darker hue. The lip is yellow at the base, with crimson veining, which deepens in tint as it reaches the front lobe (First-class Certificate). They also exhibited their pretty *Lælio-Cattleya Proserpine* × (*C. velutina* ♂, *L. pumila* *Dayana* ♀), and *Cypripedium H. Ballantine* × (*Fairrieanum* ♂, *purpuratum* ♀), both of which had previously received awards.

Thos. Statter, Esq., Stand Hall, Whitefield, near

Manchester (gr., Mr. Johnson) showed a grand spike of *Lælia elegans superbissima*, one of the finest forms of the *Turnerii* section yet seen. The labellum had a very broad and large middle lobe, both it and the tips of the side lobes being of a glowing purplish-crimson (Award of Merit). Mr. Statter also sent cut spikes of *Cattleya Amesiana* ×, and of a light unspotted form of *C. granulosa*, closely approaching *C. Dubuyssoniana*.

Messrs. Linden, l'Horticulture Internationale, Park Leopold Brussels, exhibited *Aërides Augustianum*, a distinct form with pale pink flowers (Award of Merit), three good varieties of *Cattleya Acklandiae*, and cut flowers of forms of *Cattleya guttata Leopoldii* (Vote of Thanks).

Messrs. Pitcher and Manda, The United States Nurseries, Hextable, Swanley, Kent, staged an effective group composed chiefly of rare *Cypripediums*, for which the firm is noted, over which came the graceful sprays of *Oncidium incurvum*. *Cattleya maxima* and *Oncidium papilio* also were in the group (Silver Banksian Medal).

From McArthur's Nursery, Maida Vale, London, W, came a small selection of well-flowered Orchids, in which the *Cattleyas* and *Cypripediums* were good; and Messrs. Hugh Low & Co., The Nurseries, Clapton, E., exhibited plants of *Vanda Kimballiana* and *Cypripedium Parishii*.

Rev. E. Handley, Royal Crescent, Bath (gr., Mr. Kerslake), showed two remarkably well-grown *Dendrobiums*, viz., *D. Phalenopsis Statterianum*, with six spikes, and *D. P. Schroderianum*, with a noble spray of twenty-three flowers (Cultural Commendation for both).

From Baron Schroder's gardens, the Dell, Egham (gr., Mr. H. Ballantine), came a fine spike of the beautiful Veitchian hybrid *Phajus maculato-grandifolius* ×, which proves to be one of the finest yellow Orchids we have.

Stanley G. Lutwyche, Esq., Oakfield, Eden Park, Beckenham, sent a large healthy specimen of *Peristeria elata*, with one spike.

Drewett O. Drewett, Esq., Riding Mill-on-Tyne (gr., Mr. A. J. Keeling), sent cut flowers of *Masdevallias*, which arrived too much withered to be considered fair specimens; and John Larking, Esq., Delrow, near Watford, sent, for the opinion of the Committee, a hybrid *Cypripedium*, which was determined to be *C. T. B. Hayward* × (*Druryi* × *Spicerianum*).

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; Dr. Hogg, Messrs. W. H. Divers, G. Norman, H. Balderson, J. Hudson, G. H. Sage, G. Reynolds, W. Bates, A. Dean, J. Wright, W. Warren, G. Taber, J. Cheal, T. J. Saltmarsh, G. Bunyard, H. Pearson, H. Weir, T. Francis Rivers, and G. T. Miles.

A very good collection of fruit was to be seen, owing to the exhibits of Messrs. Veitch, and Messrs. Bunyard and Co., of Maidstone. Messrs. Jas. Veitch & Co. had some eighty dishes of autumnal fruit, all of which had been grown in the open, many of the samples being so fine as to suggest orchard-house cultivation. Of Apples, perhaps the best were Emperor Alexander, Worcester Pearmain, Kerry Pippin, Potts' Seedling, Seaton House, Warner's King, Frogmore Prolific, Stirling Castle, Lady Sudeley, Early Strawberry, and Benoni. Amongst thirty dishes of Plums, were very fine Kirke's, Prince Engelbert, Frogmore Orleans, Belle de Louvaine, Large Black Imperial, Michelson, Angelina, Duke of Edinburgh, Victoria, Pond's Seedling, Late Transparent Gage, Bryanston's Gage, Lawson's Golden Gage, Jefferson's Yellow, White Magnum Bonum, &c. There were also Damsons, Figs, Pears, Gooseberries, and four dishes of ornamental Crabs, the best of which was Jno. Downie, an exceedingly decorative variety, and quite eatable (Silver-gilt Knightian).

Messrs. Geo. Bunyard & Co., had a collection embracing twelve large baskets and seventy-nine dishes of very fine quality. There were good fruits of Apple Lady Sudeley, Duchess of Oldenburgh, Potts' Seedling, Emperor Alexander, Peasgood's Nonsuch, Stirling Castle, Worcester Pearmain, Red Astrachan, Warner's King, New Hawthornden, &c.

Of Pears, there were Louise Bonne of Jersey, Pitmaston Duchess, Dr. Jules Guyot, Petite Marguerite, Madame Treyve, and Doyenné Boussoch; Peaches, Nectarines and Gladstone; also some Damsons, and a few dishes of ornamental Crabs (Silver Gilt Knightian Medal).

Some excellent Peaches and Nectarines came from Mr. W. H. Divers, gr. to J. T. Hopwood, Esq., Ketton Hall, Stamford, including Peaches, Princess of Wales, Sea Eagle, Bellegarde, Violette Hativé,

Crimson Galande, Lord Palmerston, Barrington, Diamond, and A bec; Nectarines, River's Orange, Spenser, Pine-apple, River's Large Elruge, Lord Napier, and Dryden. All of the samples were of excellent quality, and we doubt if there were any better at the great fruit show at Earl's Court (Silver Knightian Medal).

Mr. J. Miller, gr. to Lord Foley, Ruxley Lodge, Esher, exhibited a very fine collection of fruit (hardy and orchard-house, including Figs Bourjasotte Grise (very fine), White Marseilles and Black Ischia; Nectarines, Large Elruge, Pine-apple, River's Early Orange, and Humboldt; Peaches, Noblesse, Grosse Mignonne (very fine, from orchard-houses) Royal George, &c. Also some Apples, and four Melons, including two very pretty fruits of Ruxley Favourite, and A. F. Barron (Silver Knightian Medal).

Mr. W. Wright, gr. to J. Buchnall, Esq., Langley Court, Beckenham, staged a dozen fine and well-coloured fruits of Sea Eagle Peach. Messrs. J. Cheal & Sons, Crawley, a collection of ornamental Crabs (Vote of Thanks).

From the Duke of Northumberland, Syon House (gr., Mr. G. Wythes), came a new Pea, called Veitch's Success, which received a First-class Certificate. Also a dish of very fine Pond's Seedling Plums (Vote of Thanks). Mr. Weir, The Gardens, Acton Park, Wrexham, exhibited a new Grape (black), called Weir's Cape Muscat, the flavour of which was very good.

A brace of seedling Melons came from Mr. W. Palmer, Conder Villa, Junction Road, Andover; and a half-dozen large red Tomatos (Ponderosa) from Mr. R. Owen, Floral Nursery, Castle Hill, Maidenhead. Mrs. Cooper, Lewes Road Nursery, Brighton, sent a dish of culinary Apples, named Mr. Cooper; and another dish of Apples came from Mr. J. Bowerman, Hackwood Park Gardens, Basingstoke, called Owen's Seedling.

Mr. R. Dean, Ealing, showed a good dish of Tomatos (Conference), and Apples (Lord Grosvenor), very fine. Mr. E. Burnand, Woodcote Road, Welington, had a small red Tomato called Sabine's Choice.

From the Royal Horticultural Society's Gardens, Chiswick, came a collection of Runner Beans, including about forty-six varieties. There were excellent examples of the ordinary green Runners in great variety, of some of the best French varieties, and of the blue-podded, white-podded, and a very pretty variety called Speckled Butter, the pods of which are flaked with rose. Besides these, were some Butter Beans from Hungary, not very appetising to look at, perhaps, to those accustomed to green Beans; these were excellent examples of culture. Butter Beans are great favourites on the Continent, served in some simple kind of sauce, and when once tasted, they are generally liked. Some are stringless—at least, while young—and they are usually broken across when prepared for cooking; hence the name "snap," which some of them bear.

LECTURE ON ROOT-PRUNING.

In the afternoon, Mr. George Bunyard, of the Maidstone Nurseries, gave a lecture on the above subject, the chair being occupied by Mr. Geo. Gordon. The lecturer in commencing said that, if cultivators wished to maintain a proper balance between the different parts of a tree, attention would have to be paid to the roots, and went on to explain how it was, and in what circumstances root-pruning became a necessity. The difference between the fibrous surface-roots and the thick tap-like roots was explained, and the usefulness of the former in securing good fruitful wood pointed out, which was illustrated by young Apple trees on the Paradise and Free stock. The use of each stock was dwelt upon, hints given as to pruning of the Free stock, so as to ensure as many fibrous surface roots as possible. Mr. Bunyard said, that large pyramidal trees were those most generally neglected in gardens, and gave instructions how to proceed in the matter when it was wished to renovate specimens that had been neglected for a long time, emphasising the importance of careful procedure, and of not attempting more than one-half the tree in the same season, lest the check be too much for the tree to recover itself. After having cut off a large tap-root, it was advised that a slate, or other suitable material, should be placed under the cut so as to force the new roots that would be emitted to assume a horizontal position when starting. A pair of Vine-loppers like those used in the Continental vineyards was shown, as being the best instrument for cutting of the tap-roots, and as the shears cut both ways, a very clean cut is secured. Mr. Bunyard reminded his hearers that fruit trees

liked a close hard soil, and advised that vegetables should never be planted nearer to a wall where fruit trees are planted than 3 feet, remarking that it was when the roots got into the soft, deeply worked, and richly manured soil of the garden, that thick green growths were made, that were of no use to the fruit-growers. Peaches, Nectarines, and Apricots in houses would sometimes require root-pruning, and this operation could be done in wet weather in the autumn after the fruit has been gathered, but before the leaves have fallen. When a tree has been subjected to severe pruning, the lecturer said he would not mulch until the following spring. In concluding, Mr. Bunyard pointed out that a proper and judicious system of root-pruning induced fertility, improved the flavour of the fruit, prevented the formation of useless shoots, minimised the necessity of winter pruning, and prevented canker.

Mr. Alex. Dean, in proposing a vote of thanks to the lecturer, referred to the advisability of cutting roots in such a manner that the cut rested on the soil instead of looking towards the operator. Such a method would tend to induce the roots to assume a horizontal position. Mr. Dean then made a few remarks upon the system of root-pruning, and thought that nurserymen and gardeners were to blame for the necessity of such an unnatural treatment—the nurseryman for raising his trees in such rich land, and the gardener for planting the trees in land of the same nature. The chairman instanced a case in which root-pruning had been carried out on less careful methods than Mr. Bunyard had advised, and when the check had been such that trees operated upon some seven years ago had not yet recovered.

KINGSWOOD HORTICULTURAL.

AUGUST 24.—While Bristol city appears unable to maintain a horticultural Society, its great industrial suburb, Kingswood, does so with marked success, and its second exhibition, held on the above date in the grounds of Mrs. Stone, on Kingswood Hill, was highly successful. The weather was fine, and the neighbourhood was gay with flags and floral decorations. The exhibition was a great improvement upon that held last year, and the attendance very large.

Certain classes open to all brought a spirited competition. With twelve stove and greenhouse plants in flower, Mr. J. Cypher, Cheltenham, was 1st, being particularly strong in well-grown and flowered *Ericas* and other flowering plants; 2nd, Mr. J. F. Mould, nurseryman, Pewsey.

The only eight fine-foliaged plants came also from Mr. Cypher. Mr. G. Tucker had the best eight exotic Ferns. *Begonias* were very good. *Fuchsias*, zonal *Pelargoniums*, *Petunias*, &c., also. The best new and rare plant was *Dendrobium Phalenopsis Schroderi*, from Mr. Cypher; Mr. Mould taking the 2nd prize with a white form of *Erica Aitoniana* named Lady Mary.

Open class cut flowers were represented by some very fine Roses from Dr. S. P. Budd, of Bath, flowers remarkable for such fine quality so late in the season, H.P.'s and Tea-scented alike being in splendid condition. Messrs. Parker & Son, nurserymen, Bristol, also had some very good flowers. Dahlias were very good from Mr. G. Humphries, nurseryman, Chippenham; and from that well-known amateur, Mr. Hobbs, Lower Easton, Bristol. Flat-petalled and German *Asters* were excellent, especially the former, shown by Mr. G. Garraway, Bath. *Gladioli* and *Phlox Drummondii*, the latter in large and handsome bunches, were excellent features, the *Phloxes* so good indeed as to put the *Verbenas* quite in the shade. The best collection of stove and greenhouse cut flowers came from W. K. Wait, Esq., Bristol; Mr. G. Tucker, being a close 2nd. Stands of hardy cut flowers in twelve bunches were a leading feature, good subjects admirably staged; a bunch of *Tigridias* in this stand which gained the 1st prize for Mr. A. A. Walters, of Bath, was particularly novel and striking.

Fruit was sparingly shown. Vegetables were very good, especially the fine collection of eight dishes staged by Mr. G. Garraway, of Bath.

Plants shown by cottagers, a cottager being defined as a person whose rent does not exceed £13 per annum, were a surprise. The growers of these are mainly shoemakers, all of them having a small greenhouse or frame, and the plants shown included variegated well-coloured *Ananas*, *Caladiums*, *Palms*, *Ferns*, *Hoya carnosa*, *Vallota purpurea*, *Begonias*, zonal *Pelargoniums*, *Fuchsias*, and many others. The cut flowers, hardy fruits, and vegetables were remarkable for good quality.

BIRMINGHAM FLOWER SHOW.

AUGUST 30, 31, AND SEPTEMBER 1.—An exhibition of Dahlias and other flowers, fruits, and vegetables was held in the Moseley Gardens. Good prizes were offered for collections of Dahlias (any kinds being allowed) to occupy a space of not less than 12 feet by 3 feet wide, and seven competitors entered, with stands that occupied from 15 to 20 feet in length. A long bank of these flowers was staged, and a most effective display was made, chiefly in neatly set-up bunches of Cactus, singles and Pompons especially, nicely arranged, with stands of prize flowers in the foreground. Messrs. Perkins & Sons, Coventry, were 1st, with a very fine display, in which bouquets of Dahlias were introduced; 2nd, Messrs. Jones & Son, Shrewsbury; 3rd, Messrs. Kimberley & Sons, Coventry. The classes for thirty-six and twenty-four Dahlias were well filled. Messrs. Heath & Son, Cheltenham, 1st; Messrs. Kimberley & Son, Coventry, 2nd, in both classes. For twenty-four bunches of hardy border flowers, dissimilar, Mr. W. B. Child, florist, Acocis Green, was 1st; Messrs. Harkness & Sons, Bedale, 2nd.

Good prizes for fruit brought out some fine exhibits. For collection of eight varieties, Mr. Daves, gr. to H. M. Biddulph, Esq., M.P., was 1st, with a fine display; 2nd, Mr. T. Roberts, gr. to H. W. Foley, Esq., Prestwood, Stourbridge, with a good lot; 3rd, W. Gilman, Ingestre Hall Gardens.

Fruit.—For three bunches Black Hamburgh Grapes, Mr. Bannerman was 1st, as he also was for three bunches Muscat of Alexandria, and three of any variety of black Grapes but Hamburgs. Mr. Stainton, Stoneleigh Village, staged two dozen very large Williams' Bon Chretien Pears; and Messrs. Bunyard & Son, Maidstone, Kent, a grand display of fifty-six dishes of Apples and Pears, and eight baskets of Apples. Amongst the Apples were fine examples of leading sorts; and in Pears, *Souvenir du Congrès*, *Pitmaston Duchess*, *Beurré d'Amanlis*, and *Triomphe de Vienne*, were very fine.

Novelties, &c.—Messrs. Sutton & Sons, of Reading, sent a fine display of their new *Gloxinias*, to four of which First-class Certificates were awarded, viz., *Cyclops*, *Duke of York*, *Admiration*, and *Her Majesty*. Other fine sorts were staged, and choice annuals also.

Mr. Chas. Turner, Slough, sent new Cactus and Pompon Dahlias, and First-class Certificates were awarded to seedling Cactus varieties, H. E. Milner, Blushing Bride, Joseph Chamberlain, Sir Hugo, a fine scarlet; and to Pompon, Little Lady, cream, tipped with bright rosy-crimson.

Messrs. Perkins & Sons, Coventry, received a First-class Certificate for a very fine true Cactus Dahlia, Matchless, rich deep maroon-crimson, almost black.

Mr. Henry Eckford, Wem, contributed new Sweet Peas, and First-class Certificates were awarded to five of them, viz., H. M. Stanley, Lady Beaconsfield, Venus, Lady Penzance, Ovid, and Royal Robe. Specimens of his fine new culinary Pea, Ambassador, were also staged.

Amongst other honorary exhibits were a grand lot of thirty specimen double and single tuberous *Begonias*, sent by Mr. F. Jenkins, Olton, near Birmingham, large well-grown plants, admirably flowered, which closely covered a space 30 feet by 7 feet.

Messrs. Hewitt & Sons, The Nurseries, Solihull, staged 40 feet in length of cut herbaceous and other flowers, *Begonias*, *Carnations*, and other blooms and plants, a very fine display. Messrs. Thomson & Co., The Nurseries, Sparkhill, also had a fine display of cut flowers and plants, including fine new *Carnations* and *Picotees*, *Violas*, and other things. Messrs. Harkness & Co., Bedale, contributed a fine display of cut hardy flowers and border *Carnations*; Messrs. Pope & Sons, The Nurseries, King's Norton, a superb wreath and shower bouquet; Messrs. Shaw, of Kidderminster, and Jones & Sons, Shrewsbury, collections of *Gladioli*; and Mr. H. Whately, Kenilworth, a basket of very fine fruits of the new Tomato "Ignatum." Several other exhibits well demand notice also.

READING HORTICULTURAL.

AUGUST 31.—This annual late summer exhibition was held in the pretty Forbury Gardens adjoining the town, the plant, flower, and fruit exhibits being arranged as best they could in several small tents, dotted about amidst the flower-beds, whilst the superb collections of vegetables were staged in the open. Owing to the loss by a windstorm last year of the Society's large tent, which covered in the old show ground in the abbey ruins, the Society seems

to be in great difficulty. The show consequently suffered very much, because so cut up, and especially was this found to be objectionable when rain fell heavily during the afternoon, and drove visitors to shelter. Later the weather improved, and the attendance was so large that at times progress through the tents was again difficult. The plant classes owed much to the presence of some good specimens from Alderman Marriott's garden at Coventry, his gr., Mr. Finch, taking 1st place easily with six stove and greenhouse plants in bloom, having very good *Clerodendron Balfourianum*, *Stephanotis floribunda*, *Ixora Duffii*, *Ericas* *Marnockiana* and *Urania*, and *Dipladenia amabilis*; Mr. Mould, of Pewsey, was 2nd, with good plants.

The best six foliage plants came from the gardens of G. W. Palmer, Esq., M.P. (Mr. Dockerill, gr.); Mr. Mould again being 2nd. The finest flowering specimen *Ixora Duffii*, carrying several immense heads of bloom, came from Coventry. Mr. Finch also had the best specimen foliage plant in a very fine *Croton*. Mr. Finch also had the best six *Palms*; Mr. Turton, gr. to J. Hargreaves, Esq., Maiden Erleigh, being 2nd. A very fine half-dozen Ferns were staged by Mr. Dockerill, consisting of *Microlepia hirta cristata*, *Alsophila australis*, *Nephrolepis exaltata*, *Dicksonia antarctica*, and *Adiantum cuneatum*; Mr. Willis, gr. to W. J. Simmonds, Esq., Reading, was 2nd, having in his lot a huge *Davallia Mooreana*. Mr. Dockerill had the best six pans of *Lycopods* in beautiful fresh compact cones. Mr. Balchin, gr. to B. Simmonds, Esq., the largest six *Balsams*, but loose and over-potted. Mr. Bracey, of Tilehurst, had twelve superbly-headed dwarf *Cockscombs*. Six very fine bush *Coleuses*, richly coloured, came from Mr. Goodman, gr. to C. A. Tonge, Esq.; and Mr. Best, gr. to Mrs. Chute, the Vine, Basingstoke, had the 2nd lot in tall but thin pyramids.

Mr. Woolford, gr. to A. Palmer, Esq., was the only exhibitor of a large decorative group of plants, and was 1st for six zonal *Pelargoniums*, doubles unnamed. As might be expected, Tuberous *Begonias* were excellent, but only two lots of six plants were staged, Messrs. Dockerill and Woolford being the exhibitors. The former had the best pans of *Achimenes*, but these were not yet fully open. The smaller groups of plants were poor. Mr. Best was placed 1st with six table plants. Mr. Phippen, of Reading, set up a nice collection of plants, with some very handsome floral wreaths, crosses, &c., of cut flowers. Dahlias from Mr. Mortimer, Farnham, and Messrs. Cheal & Sons, Crawley, were excellent; these growers taking prizes in classes for eighteen and twelve blooms in this order. Messrs. Cheal made a beautiful exhibit of twelve bunches of single Dahlias; Mr. Such, Maidenhead, being 2nd. Messrs. Perkins & Sons, Coventry, showed beautiful Roses, including six blooms of Mrs. J. Laing, taking 1st place; they were also awarded a First-class Certificate for Cactus Dahlia Matchless, dark crimson. Mr. Finch showed splendid bunches of cut stove and greenhouse flowers. Mr. Best was 1st for *Asters*, and Mr. Turton for fine *Zinnias*. There were also *Gladioli* and other flowers shown, but being stood on the ground, somewhat escaped notice.

Fruit forms a striking feature always at Reading shows, the average quality being so good, in fact, relatively—so said an experienced fruit grower—as to have been equal to that of the recent show at Earl's Court. The best collection of eight dishes came from Heckfield Place, where Mr. Maxim, gr. to the Hon. Miss Lefevre is doing his best to keep up its old reputation for fruit. He had, in good condition, Mrs. Pince and Golden Queen Grapes, Sea Eagle Peaches, Lord Napier Nectarines, Washington Plums, Moor Park Apricots, &c. Mr. Goodman, gr. to Miss Hammersley, Bourne End, was 2nd; his dishes of fruits were excellent, but his Grapes rather weak.

In the class for six dishes, Mr. Smith, gr. to R. Overy, Esq., Badgemore, was 1st, having fine bunches of black *Alicante* and Muscat of Alexandria Grapes, with other fruit; Mr. Johnson, gr. to A. Gilliat, Esq., Slough, was 2nd.

With two bunches of black Hamburgh Grapes, Mr. Osman, gr., Ottershaw Park, was 1st, and Mr. Turton 2nd; both had very handsome samples.

With any other black Grape, Mr. Maxim was 1st, with good *Alicante*; Mr. Pound, gr. to Alfred Sutton, Esq., coming 2nd, with fine, well-finished clusters.

Mr. Smith was 1st with Muscat of Alexandria Grapes, not large, but well-finished; Mr. Pound coming 2nd, with fine bunches that were not quite ripe. These exhibitors took the same position with any other white, the former having very handsome Golden Queen, and the latter Buckland Sweetwater.

Mr. Bowerman, gr. to C. Hoare, Esq., Hackwood

Park, had the finest dish of Peaches, with Barrington; and of Nectarines, with Humboldt.

Mr. Paxton, gr. to the Hon. C. S. Irby, Taplow, had the best Figs; and Mr. Waite, Glenhurst, Esher, the best three dishes of Plums.

With five dishes of dessert Apples, Mr. Turton was well 1st, with rich-coloured Strawberry, Duchess' Favourite, Worcester Pearmain, Kerry Pippin, Irish Peach, and Astrachan; Mr. Paxton coming 2nd.

In the class for six dishes of kitchen Apples, honours were divided, Mr. Turton and Mr. Dockerill being placed equal 1st. The former had fine examples of Saltmarsh's Queen, Lord Suffield, Warner's King, Peasgood's Nonsuch, Waltham Abbey Seedling, and Ecklinville. Of other varieties the latter had very fine Bramley's Seedling, Emperor Alexander, and Stirling Castle.

Mr. Dockerill had the best flavoured Melons in two classes, in Hero of Lockinge, though over-ripe; and Mr. Mortimer the best brace of Cucumbers in Sutton's Matchless. The vegetables were wonderfully fine, and plentiful: Mr. Pope, gr. to the Earl of Carnarvon, Highclere Castle, was 1st with Messrs. Carter & Co.'s unlimited collection, having nineteen dishes; Mr. Lye, Sydmoncton Court, was 2nd, having seventeen dishes of fine quality; and Mr. Waite was 3rd, with twenty-four dishes. Messrs. Webb & Son's prizes for six varieties of vegetables were taken by Mr. Kneller, gr. to W. Portal, Esq., Malshanger Park, Mr. Bowerman, Mr. Waite, and Mr. Pope respectively, the average quality being exceptionally good. For a similar class, Mr. C. Fidler's prizes, to which a Gold Medal was added to the 1st prize, Mr. Lye was 1st, with a superb lot; Mr. Kneller coming 2nd; Mr. Best, gr. to Mrs. Chute, The Vine, Basingstoke, 3rd.

Messrs. Sutton & Sons offered prizes in twelve classes for single dishes of vegetables, and brought a wonderful competition together of splendid products, all of which had to suffer from crowding on the tables and undue exposure to wind and rain. The chief prizetakers were Messrs. Lye, Kneller, Bowerman, Best, Waite, Turton, and Pope, who may be said to be a septet of high class vegetable growers, hard to beat anywhere. There were also large numbers of cottagers' exhibits in vegetables displayed.

EASTBOURNE HORTICULTURAL.

AUGUST 31.—The annual summer show was held on the above date in the grounds of Compton Place, and drew a large number of visitors. The leading features were stove and greenhouse plants, Ferns, and Fuchsias. The entries of fruits and vegetables for competition were fewer than usual, but a large space was occupied by fruits and by plants sent for show only, and were in themselves interesting to the visitors.

For eight stove and greenhouse plants, Mr. F. Portnell, gr. to Sir A. Lamb, Bart., Beaufort Park, Hastings, was easily 1st, with *Bougainvillea glabra*, *Allamanda Hendersoniana*, well-flowered; plants of *Dipladenia amabilis*, and *Ericas McNabiana* and *Everianum*; Mr. E. C. Gilbert, Springfield Nurseries, Hastings, was 2nd, his plants being good, but not so uniform as regarded size as Mr. Portnell's. The best were *Allamanda Hendersoniana*, *Lapageria alba*, *Statice imbricata*, *S. Gilbertii*, and some *Ericas*; Mr. A. Gadd, gr. to P. A. Eagles, Esq., Hollington, took the 3rd prize with half-specimens, the lot including a superb *Vallota purpurea* with numerous flowers.

In the class for six plants, Mr. Portnell was again 1st with well-bloomed plants of *Ericas*, *Statice*, and *Alamandas*; 2nd, Mr. A. Offer, gr. to J. Warren, Esq., Handcross Park, with nice fresh plants, amongst them a fine *Franciscea calycina* major, beautifully flowered; and the old and rarely exhibited *Clerodendron fragrans*; 3rd, Mr. Watson, Eastbourne.

In exotic Ferns, Mr. Offer was easily 1st with large well-grown specimens of tree and other species; 2nd, Mr. Gilbert, with smaller specimens, his best being a plant of *Microlepia birta*.

Mr. Watson, gr. to C. H. Simmons, Esq., was 1st for six Ferns, and Mr. Tugwell 2nd.

The class for foliage plants was one of the best, which is not a matter of surprise when such a well-known exhibitor as Mr. Offer brought some of his best plants, with which he easily secured the 1st prize; the group consisted of *Crotons* (beautifully coloured), fine *Cycas revoluta* and *C. circinalis*, and some large *Palms*. Mr. Gilbert, Hastings, was 2nd, with smaller plants.

Mr. Offer was again 1st with six, well grown—

Maranta Makoyana, *Dieffenbachia magnifica*, an *Alcacia*, and *Crotons*; 2nd, Mr. G. Watson, with larger plants, but not so well grown.

Mr. Portnell was 1st for six specimen *Ericas*.

The competition for groups of Ferns arranged for effect brought three nice groups, and Mr. Gilbert, who was 1st, had a base of *Adiantum*, with one large Tree Fern in the centre, a wooden stage being erected at the back, which did not add to the gracefulness of the arrangement, and with groups staged on turf little support of this kind is required; 2nd, Mr. Griffin, gr. to Mrs. Randall, Eastbourne, with a group in which were "dot plants" of choice species, and varieties of *Adiantum*.

Fuchsias were a telling class. 1st, Mr. Siggs; 2nd, Mr. Portnell, both lots being beautifully flowered.

Coleus of large size were well coloured, Messrs. Griffin and Holliday securing the chief prizes.

Balsams and *Petunias* were not well done; whereas *Begonias* were fine, Messrs. Holliday and Mills taking the prizes in the order of their names.

Pelargoniums were excellent, but there being only one class, the Ivy-leaved varieties—a fine lot of plants—scarcely got justice done there, Messrs. Holding and Griffin taking 1st and 2nd prizes.

Achimenes formed a noteworthy exhibit, being well grown. Fine pans of these plants were staged by Messrs. Holding, Watson, and Tugwell. There was but a limited competition for the best single specimen flowering plant; and for the collection of thirty-six varieties of cut *Roses*, Mr. Gorrings was 1st, Mr. Woolland 2nd. In the class for twenty-four *Roses*, 1st, Mr. Slaughter; 2nd, Mr. Brooks.

Fruit.—The quantity of fruit shown was not large. Culinary Apples were good, as were dessert Pears and Plums, and the prizes went to local exhibitors. For nine dishes, Mr. Blake was 1st, with good Grapes and Peaches. Mr. Holman, gr. to Viscount Gage, Lewes, was a close 2nd.

Melons were shown in quantity. Mr. Holman 1st, for flavour; 2nd, Mr. Gower. Many of the Melons shown lacked size.

Grapes, as a class, were poor. Messrs. Tugwell, Gadd, and Clapson were the successful exhibitors in the classes for black varieties; and Messrs. Clapson, Foxley and Tugwell in those for white ones. The cottagers' exhibits were not numerous, and Potatoes were the only items that were largely shown.

Wild flowers were well shown in trays, with their names attached, as were the flowers of annuals and herbaceous plants. There was a good exhibit of Grapes, Apples, Plums, and Tomatos, from Mr. Larkin; of Dahlias, from Messrs. Cheal, Crawley; a large collection of herbaceous cut flowers, from Messrs. Cutbush, of Highgate, N.; of decorative plants and wreaths, from Mr. Scott, Eastbourne; and fruit from Messrs. Knight & Dann, Hailsham, and from Mr. Goringe. For Messrs. Sutton's vegetable prizes, Mr. Holman was a good 1st, with a very even lot of produce; 2nd, Mr. Blake.

BISHOP'S STORTFORD HORTICULTURAL.

AUGUST 31.—This Society held its autumnal exhibition in the grounds of John Barker, Esq., J.P., The Grange, on the above date. This is one of the oldest-established Societies, having been in a flourishing state in 1843, but it seems to have lapsed until 1870, when it was revived, under the energetic management of the present Hon. Secretary, Wm. Smith, Esq., of The Links. The members of the Society have this year presented Mr. Smith with a very handsome gold watch and chain, to mark their appreciation of his valuable services to the Society for twenty-one years. The exhibition is a remarkably good one, not so much for the number of large specimen plants exhibited, but because of the general good quality of the exhibits from cottagers and amateurs. There were about 1300 entries altogether, and of course the gardeners of Essex were well to the fore in good culture, especially with vegetables.

Flowering stove and greenhouse plants were few, but foliage plants were represented by good specimens of *Crotons*, *Palms*, and *Alcacias*, the 1st prize for six going to the Misses Pulteney, Stanstead. The best exhibit of flowering plants was a collection of splendidly-grown double and single *Begonias*, from Wm. Smith, Esq., to which the 1st prize was awarded; two other good collections were shown. Groups of foliage and flowering plants were admirable; the best-arranged group, as well as the best-grown plants, were from Lord Rookwood, Down Hall, Hailson (gr., Mr. George Hersey). An admirable group of *Chrysanthemums*, principally Madame

Desgranges and George Wermig, came from Lieut.-Colonel Archer Houlton, Great Hallingbury (Mr. B. Calvert, gr.), which obtained a 1st prize. The Rev. J. Menet, Hockerill, easily obtained two 1st prizes with admirable blooms of Madame Desgranges and George Wermig, amongst ten competitors.

Table plants, always an admirable feature at flower shows, were well represented. The best half-dozen were sent from Lord Rookwood's garden.

Collections of single and double zonal *Pelargoniums* formed a good feature, and the best six in each class were sent by M. Taylor, Esq., The Wharf, Bishop's Stortford.

Cut flowers were not quite up to the average, but herbaceous plants, *Asters*, &c., were very good.

A good-sized tent was filled with table decorations, sprays, button-holes, and fruit. There were fourteen tables set out, some of them being very prettily arranged, all of them distinguished by lightness and good taste in arrangement. The 1st prize was awarded to Miss Gertrude A. Cass, Half-Acres, for an arrangement of long, rambling growths of *Ampelopsis Veitchii*, *Calioptis atro-sanguinea*, and the pale blue *Plumbago capensis*. The 2nd prize table from Mrs. Philip Frowne, Great Hallingbury, composed of *Plumbago capensis*, blue and white, with *Gypsophylla* and *Asparagus plumosus*, was also very elegant.

The best collection of fruit, also the best black and white Grapes, were from the garden of Lieut.-Col. Archer Houlton; the black Alicante Grapes were very fine indeed.

Collections of vegetables were in considerable force, and very good in quality. P. A. Taylor, Esq., Hadham Road, obtained the 1st prize, with a numerous and well-grown assortment. Walter Gibbey, Esq., Elsenham Hall (gr., Mr. Plester), obtained a 1st prize in another class. To give a list of all the well-grown vegetables, cut flowers, and fruit exhibited, would be tedious and uninteresting to general readers. The single epergnes, vases, &c., filled with flowers, from the ladies, filled up one side table in a long tent, the arrangement throughout being exceedingly tasteful. Messrs. Paul & Sons, of The Old Nurseries, Cheshunt, and Mr. W. Paul, of Waltham Cross, exhibited cut flowers.

Messrs. Rivers & Son, of the Nurseries, Sawbridgeworth, exhibited a fine lot of fruit trees in pots, and dishes of fruit.

Messrs. Venbury & Tarling, Sheering Nurseries, exhibited admirably-grown fruiting Vines in pots, for which they also received very high commendation. The rain fell heavily during the day, and sadly interfered with the enjoyment of the visitors.

NATIONAL DAHLIA.

SEPTEMBER 2, 3.—The drenching showers of last week told heavily against many of the Dahlia growers, and the sweeping winds which accompanied the storms seriously damaged many plants; bearing this kind of weather in mind, the exhibition of the National Dahlia Society at the Crystal Palace, was remarkably good. The entries were as numerous as ever, the competition was keen in most of the classes; the Cactus and decorative, the Pompon and single types were very good, and a substantial addition was made to the Cactus section by the addition of some novel varieties. Never before, perhaps, in the history of the Society was there such a scanty contribution of new show varieties, and not a single Certificate was awarded to any representative.

The first twelve classes were open to nurserymen, and in all those for show Dahlias, the fancy types were mixed with the self and edged flowers. It may be instructive to some to know that, according to the definitions set forth in the catalogue of one of the leading firms of Dahlia growers, a show Dahlia is a large self-coloured flower, or else the base colour is light, edged with a darker shade; in the latter case, the flower is termed "edged." A fancy Dahlia is similar in size and shape, but has two or more colours; either the ground colour of the florets is splashed or striped with other colours, or the florets have a dark base with a paler edge, in which case the flower is termed "tipped." The Cactus type follows the character of the species *Juarezii*. The decorative Dahlias are mainly small flat flowers of the show type.

Show and Fancy Dahlias.—In the class for sixty blooms, distinct, there were four entries, the 1st prize being awarded to Messrs. Keynes, Williams & Co., nurserymen, Salisbury, who had larger flowers than those shown by Mr. Chas. Turner, Royal Nursery, Slough, who had blooms a little less in size, but fresh, bright, and of higher quality, especially in

the matter of the centres. Messrs. Keynes & Co. had Harrison Weir, Mrs. Kendal, James O'Brien (Fancy), Shirley Hibberd, Duchess of Albany (F.), Colonelist, J. N. Keynes, Richard Dean, Rebecca (F.), Rev. J. B. M. Camm (F.), J. Hickling, Buffalo Bill (F.), Gloire de Lyon, Arthur Ocock, William Rawlings, R. T. Rawlings, J. T. West, Imperial, Matthew Campbell (F.), Dandy (F.), Alice, Emily, T. S. Ware, Maud Fellowes, Willie Garratt, Duke of Fife, William Powell, another fine yellow; Mrs. Langtry, Mr. Stancomb, Comedian, a charming new Fancy; Miss Fox, and F. Pearce (F.). 2nd, Mr. Charles Turner. 3rd, Mr. Arthur Rawlings, nurseryman, Romford. 4th, Mrs. M. V. Seale, The Nursery, Sevenoaks.

There were four exhibitors of forty-eight varieties, and here Messrs. Keynes & Co. were 1st, with James O'Brien (F.), Mr. Glasscock, Colonelist, Richard Dean, Duchess of Albany (F.), Mrs. Foreman, John Hickling, James Cocker, Rev. J. B. M. Camm (F.), William Powell, William Rawlings, Hon. Mrs. P. Wyndham, Thomas Hobbs, Buffalo Bill (F.), Mrs. J. Downie (F.), J. N. Keynes, J. C. Vaughan, Frank Pearce (F.), Comedian (F.), Crimson Globe, and Willie Garratt; 2nd, Mr. C. Turner; 3rd, Mr. A. Rawlings.

There were four competitors for thirty-six blooms. Here Messrs. Saltmarsh & Son, nurserymen, Chelmsford, were placed 1st, having fine blooms of Perfection, William Rawlings, Harrison Weir, Jupiter (F.), Henriette, Rev. J. Godday, Maud Fellowes, Hugh Austin (self), and Mrs. Saunders (F.); 2nd row: Shirley Hibberd, Henry Walton, John Walker, William Keith, Frank Pearce (F.), R. T. Rawlings, Mrs. D. Saunders, Willie Garratt, and J. T. West; front row: Mrs. Langtry, Crimson Globe, T. S. Ware, Lustrous, Lady G. Herbert, Mr. Harris, Matthew Campbell (F.), Lord Carlingford, and Mrs. Gladstone. 2nd, Mr. George Humphries, nurseryman, Chippenham, with a stand almost equal, though some thought superior, to the foregoing. 3rd, Mr. A. Rawlings. 4th, Mrs. M. V. Seale.

The same number of competitors showed twenty-four blooms, Mr. G. Humphries taking the 1st prize, with Harry Keith, Buffalo Bill (F.), William Powell, William Rawlings, Mrs. Gladstone, Purple Prince, and Henry Walton; second row: R. T. Rawlings, Colonelist, Frank Pearce (F.), Duchess of Albany (F.), Salamander (F.), and Arthur Rawlings; front row: Volunteer, Victor, Henry Bond, and Mrs. J. Downie (F.). 2nd, Messrs. Saltmarsh & Son. 3rd, Mr. S. Mortimer, nurseryman, Farnham. 4th, Mr. J. Walker, Thame.

With twelve varieties, Messrs. J. Cheal & Sons, nurserymen, Crawley, were 1st, with Colonelist, Crimson King, J. T. West, Lord Chelmsford, Matthew Campbell (F.), Mrs. Foreman, John Walker, Mrs. P. McKenzie, Mrs. Gladstone, Mrs. Langtry, Norah Creina, and Mrs. Jefford. 2nd, Mr. J. R. Tranter, nurseryman, Henley-on-Thames. 3rd, Mr. H. Harris, Writtle Road, Chelmsford.

Cactus and Decorative Dahlias.—In the class for eighteen varieties, two blooms of each, but two collections were staged, but they came very close together, Messrs. Cheal & Son gaining the 1st prize by a very few points. They had very good examples of Lancelot, similar in colour to Panthea, but a true Cactus type; Robert Maher, a good yellow; Josephine, new, maroon-crimson; St. Catherine, rich deep yellow, a true Cactus; Black Prince, large and somewhat coarse, but of a rich deep maroon colour; Lady Marsham, Charming Bride, Beauty of Arundel, Harry Freeman, a fine white; Juarez, Mrs. J. Douglas, Marchioness of Bute, Edith Cheal (new), brilliant maroon-crimson, very fine; Mrs. Hawkins, Duke of Clarence, Rayon d'Or, bright orange-red, with a band of white down the centre of each petal; and Honoria. 2nd, Mr. C. Turner.

There were four exhibitors of twelve varieties, six blooms in a bunch, Messrs. Keynes & Co. being placed 1st, with a collection which included several fine new varieties of exceptional merit, and of the true Cactus character, such as Countess of Pembroke, delicate lilac—very pretty; Countess of Radnor, yellow base, and deep reddish-salmon; Apollo, deep scarlet; Countess of Gosford, yellow, tinted with cinnamon and mauve; Bertha Mawley, orange-crimson, shaded and tinted with mauve; Mrs. Bashaw, mauve-pink and salmon; Kynerith, Duke of Clarence, Juarez, Amphion, Beauty of Brentwood, and Miss Violet Morgan, the basal petals tinted with delicate lilac-pink. 2nd, Messrs. J. Burrell & Co., Howe End Nurseries, Cambridge. Messrs. Paul & Son were 3rd, and Mrs. M. V. Seale 4th.

With twelve bunches of Cactus varieties only, Messrs. Keynes & Co., were placed 1st, with Duke of

Clarence, Kaiserin, pale yellow; Baron Schroder, St. Catherine, Apollo, Delicata, Kynerith, Daphne, orange salmon, suffused with mauve, very distinct and pretty; Wiltshire Lass, deep salmon, pale golden centre; Countess of Gosford, Bertha Mawley, and Countess of Radnor. 2nd, Messrs. J. Cheal & Son. 3rd, Mrs. M. V. Seale.

Pompon Dahlias.—These were as usual finely shown; out of four exhibitors, the best twenty-four varieties came from Mr. C. Turner, who had Marion, Lady Blanche, Isabel, Mabel, Fairy Tales, Dark-ness, H. F. Searle, Little Lady, Phoebe, Favourite, Golden Gem, Admirer, Mars, White Aster, Boule d'Or, Ringdove, Whisper, Cupid, E. F. Jungker, Ariel, Gipsy Queen, Amber, and two seedlings. 2nd, Messrs. Keynes & Co. 3rd, Messrs. J. Cheal & Son.

With twelve varieties, there were also four competitors, Mrs. M. V. Seale taking 1st prize with E. F. Jungker, Grace, Admirer, Red Indian, Favourite, Leila, Mabel, Dora, Phoebe, Whisper, Isabel, and Lilian, primrose, edged with peach, very pretty. 2nd, Mr. G. Humphries, with Lilian, W. Hiscock, dark maroon; Whisper, &c. 3rd, Messrs. J. Burrell & Co.

Single Dahlias.—There were three competitors with twenty-four varieties in bunches of twelve blooms, and very attractive they were. Messrs. J. Cheal & Sons were 1st with a superb lot, remarkable for freshness and moderate size. The varieties were Annie Hughes, clear yellow and peach, very pretty; Miss Roberts, the best yellow; White Queen, Lowfield Beauty, James Scobie, Mrs. Bowman, W. C. Harvey, Miss Linnaker Evelyn, delicate pinkish-mauve round a white ring; Lady Whitehead, rich rosy-purple; Duchess of Fife, Cleopatra, Miss Henshaw, Duke of York, bright orange-scarlet, very distinct and extra fine; Marion Hood, Amos Perry, Northern Star, Duchess of Albany, Formosa, Lady Helen, bright yellow tipped with white, very distinct; Mrs. W. C. Harvey, bright magenta, with edging of mauve; Victoria, Duchess of Anhalt, creamy-white, with broad margin of deep rose; and Little Snow-white, pure white. 2nd, Mrs. M. V. Seale. 3rd, Mr. E. F. Such, nurseryman, Maidenhead.

Twelve bunches, twelve blooms of each; there were but two competitors. Mr. G. Humphries was 1st, having Maude, white, with side margins of bright crimson-purple; Mr. Barker, Miss Ramsbottom, Northern Star, bright red, margined with deep golden yellow; Miss Roberts, Victoria, &c.; 2nd, Messrs. Paul & Son.

Amateurs: Show and Fancy Dahlias.—In the class for twenty-four blooms there were eight competitors, Mr. J. T. West, The Gardens, Cornwall, Brentwood, winning the Silver Cup given by the trustees of the Turner Memorial Fund, having fine blooms of R. T. Rawlings, Queen of the Belgians, Arthur Rawlings, J. T. West, William Rawlings, Mrs. Gladstone, and Duke of Fife in his back row; middle row: Glowworm, Mrs. Langtry, Shirley Hibberd, Mrs. D. Saunders, Lustrous, William Powell, Rev. J. Godday, and Mrs. J. Downie; front row: Prince of Denmark, Harrison Weir, Crimson Globe, Prince Bismarck, Frank Pearce, and Willie Garratt. 2nd, Mr. A. Ocock, gr. to Mrs. McIntosh, Havering, Romford, who had good blooms. 3rd, Mr. Thomas Hobbs, Lower Easton, Bristol.

For twelve show blooms only, Mr. S. Cooper, Chippenham, was 1st with Maude Fellowes, Gold-finder, Duchess of Albany (Self), Victor, Henry Bond, Harry Keith; 2nd, Mr. T. Vagg, gr. to J. Theobald, Esq., M.P., Romford; 3rd, Mr. G. Boothroyde, Red Hill, Havant. There were ten entries. There were seven competitors with six varieties: Mr. J. Couzens, Langley Burrell, Chippenham, being 1st with Colonelist, J. T. West, Victor, Henry Walton, Mrs. Gladstone, and Picotee; 2nd, Mr. J. Gilbert, Freshwater, Isle of Wight.

Fancy Dahlias.—There were seven exhibitors of twelve blooms, Mr. S. Cooper was 1st with Rebecca, Mrs. J. Downie, Prince Henry, Salamander, Lottie Eckford, Mrs. Saunders, Duchess of Albany, John Cooper, Mandarin, Comedian, Dorothy, and Peacock; 2nd, Mr. J. T. West; 3rd, Mr. A. Ocock. There were ten competitors with six varieties, Mr. G. Boothroyde, was 1st with Matthew Campbell, Rev. J. B. M. Camm, Dorothy, Mrs. Saunders, Frank Pearce, and Comedian; Mr. T. Vagg was placed 2nd.

Cactus and Decorative Dahlias.—There were three competitors in the class for twelve bunches, six blooms in each, and Mr. J. T. West was 1st with Joseph Chamberlain, bright scarlet, rather paler than Juarez, Baron Schroder, Stebbing Wheeler, yellow, flaked with pale red; Black Prince, Kynerith, Mar-

chioness of Bute, Nellie Scupham, Mrs. Douglas, Mrs. Keith, Lancelot, and Seedlings. 2nd, Mr. James Strudwick, Silver Hill, Hastings. 3rd, Mr. W. Mist, Ightham, Sevenoaks.

There were eight competitors with six bunches, and Mr. W. Hopkins, Pilning, near Bristol, was 1st, with Duke of Clarence, Robert Maher, St. Catherine, Cannell's Favourite, Robert Cannell, and Delicata; 2nd, Mr. S. Cooper, with Mrs. Hawkins, Juarez, Baron Schroder, and H. Freeman, distinct from the foregoing.

Messrs. H. Cannell & Son offered special prizes for six varieties of Cactus and decorative Dahlias, sent out by themselves. There were two competitors, but one was disqualified for staging varieties not sent out from Swanley. Mr. C. Osman, Sutton, Surrey, who had Constance, Mr. J. Douglas, Juarez, Germania nova, Lady Marsham, Lord Lyndhurst, but badly set up.

Pompon Dahlias.—There were four exhibitors of six bunches of Pompon Dahlias, ten blooms in a bunch. Mr. J. T. West was 1st, with Tommy Keith, white and cerise-crimson; Sunshine, Mary Kirk, Eva, Little Sweetheart, and Gipsy. 2nd, Mr. J. Strudwick; 3rd, Mr. C. Osman. With six bunches, six blooms of each, Mr. S. Cooper was 1st, with E. F. Jungker, White Aster, Lorna Doone, Leila, Whisper, and Thisbe; 2nd, Mr. R. Burgood, Eynesbury, St. Neots.

Single Dahlias.—With six bunches, ten blooms of each, Mr. T. W. Girdlestone was 1st, with Annie Hughes, Jack, maroon-yellow satin; Kitty, Little Snow White, and Florence. 2nd, Mr. C. Osman, with six bunches.

Special prizes were offered by Messrs. J. Cheal & Son, for twelve varieties, six blooms of each, Mr. T. W. Girdlestone was 1st, with Marion Terry, Evelyn, Sunningdale White, Mikado, Bessie Hatton, Yellow Satin, Sunningdale Scarlet, Awdrey, yellow, flaked with crimson; Fred Leslie, red, tipped with white; Dearest, white, with side margins of yellow, very pretty; Marion Hood, and Leila, white, with side margins of crimson. Mr. C. Osman was 2nd.

Open Classes: Show and Fancy Dahlias.—The best six blooms of any dark Dahlia were those of the Rev. J. Godday, from Mr. A. Ocock; Mr. Geo. Humphries was 2nd, with Arthur Rawlings; and Messrs. Saltmarsh & Son 3rd, with William Rawlings. Diadem, John Henshaw, Purple Prince, and James Cocker were also staged. The best light, not yellow, was white self, John Walker, shown by Mr. John Walker; Mr. G. Humphries was 2nd; and Mrs. Scale 3rd, with Mrs. Gladstone. Seven out of nine competitors staged the last-named variety. The best six blooms of yellow were those of R. T. Rawlings, from Mrs. Scale; Messrs. Saltmarsh & Son were 2nd, and Mr. J. T. West 3rd, with the same. The best tipped was Mrs. Saunders (Fancy); Mr. C. Turner was 2nd with the same. Mr. G. Humphries had Henry Walton, but this is an edged rather than a tipped flower. The best striped Dahlia was Mrs. J. Downie (F.); Mrs. Scale was 2nd with the same; Messrs. Saltmarsh & Son 3rd, with Frank Pearce. The best edged was Henry Walton, from Mr. S. Mortimer; Messrs. Saltmarsh & Son were 2nd; and Mr. A. Rawlings 3rd, with J. T. West.

Miscellaneous collections consisted of a large collection of cut Dahlias of all types from Mr. T. S. Ware, Tottenham; a collection of Chrysanthemums and other flowering plants backed by Palms from Messrs. Reid and Bornemann, nurserymen, Sydenham. Messrs. Pitcher & Manda, Hextable Nurseries, Swanley, had a large collection of cut flowers, including examples of two varieties of Liliun auratum, viz., rubro-vittatum and amabile; Messrs. Paul & Son, Old Nurseries, Cheshunt, hardy flowers, Dahlias, Roses, &c.; Messrs. J. Cheal & Sons, Crawley, a similar collection, Dahlias being largely represented; Mr. E. F. Such, nurseryman, Maidenhead, had hardy flowers and Dahlias; Messrs. J. Peed & Sons a large group on the floor and tables, also consisting of plants and cut flowers; and Messrs. H. Cannell & Sons, Swanley, a large and representative collection of Dahlias and other flowers.

Certificated flowers will be noticed next week.

ROYAL OXFORDSHIRE HORTICULTURAL.

THE third of the exhibitions held by this Society took place in the quadrangle of Queen's College, the plants, cut flowers, and fruit being arranged in the covered colonnade, and the vegetables in the open. Plants are always limited in quantity, the

principal prize winners being Mr. J. Mattock, nurseryman; Colonel Meller, Shotover Park; Mr. G. Jacob, nurseryman; Mr. J. Johnson, J. Arnall, Esq., Mr. John Walker, &c. The *Gardeners' Magazine* Medal for special excellence was awarded to Mr. T. Antiss, Brill, for a very fine example of *Vallota purpurea*, with over thirty trusses of bloom. Cut flowers consisted of Dahlias, Mr. John Walker, Thame, being a leading exhibitor; also Roses, well shown by Mr. J. Mattock; zonal Pelargoniums, very fine indeed; *Gladiolus*, hardy flowers, a very strong feature, &c. Fruit was good generally, and vegetables very fine. The Oxonian Runner Bean shown by the Provost of Worcester, is the finest of all the Scarlet Runner type, and was seen here in fine condition. Mr. J. R. Tranter, nurseryman, Henley-on-Thames, showed a self-coloured show Dahlia, named Gwendoline, claret-crimson in colour, a fine flower. An interesting collection of new selections of vegetables was shown by Mr. J. Jefferies, seedman, Oxford.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 7, 8.—This society held its annual early autumn exhibition of Chrysanthemums and Dahlias on Wednesday and Thursday in the Royal Aquarium, Westminster. The number of Chrysanthemums at this early show is usually not great, and it is at least doubtful if there is any need of the large winter-flowering section in the month of September. However, we think that the show this week is quite up to the usual standard, and, indeed, in some instances, it may be said to have surpassed that of last year.

A great deal of interest had been aroused by the announcement that a collection of Chrysanthemum blooms that had been sent from New Zealand in the early part of this year, frozen in blocks of ice in a similar manner in which the frozen meat is preserved, would be exhibited at this autumn show, and interested groups of curious persons surrounded the blocks of ice during most of the time.

The collection consisted of eight blooms in the following varieties:—Tarawera, an incurved yellow; Zealander, incurved pink; Rimutaka, an incurved bloom that might perhaps have been bronze, but the colour was difficult to determine in this case; Tongarirua, a Japanese pink—this one had kept its colour better than any of them; J. J. Kerslake, an incurved yellow and Lady Bell. At the time we saw them, the appearances were such that we should think the size of the blooms was not quite equal to those we see in this country, and as they were perfectly surrounded in ice, it may be expected that we saw them through a magnifying medium. Mr. Jno. Earland, Wellington, N.Z., was the exhibitor, and he was awarded a Silver-gilt Medal.

The 1st class for Chrysanthemums was for a group consisting of any varieties, and the successful competitor was Mr. E. Wince, gr. to the London Cemetery Co., Highgate Cemetery, who staged a group of plants that reminded one strongly of November. A number of Japanese varieties, of good merit, were surrounded by dwarf plants of the summer-flowering kinds. Mr. Norman Davis, nurseryman, was 2nd, with a very similar lot.

For six plants, there appeared to be only one competitor, Mr. H. Neary, gr. to the Rev. R. W. Powell, Holy Innocents' Vicarage, Hornsey.

Mr. Robert Owen, Floral Nursery, Castle Hill, Maidenhead, was 1st for a collection of cut blooms, shown in bunches, who staged about eighty bunches. Most of the varieties were of the summer-flowering section, and we noticed that many of the best varieties were seedlings of 1891, and unnamed at present. Mr. E. F. Such, nurseryman, Maidenhead, with similar bunches, was 2nd; and Mr. W. Wells, Earlswood Nursery, Redhill, Surrey, was 3rd, with a collection of winter or autumn-flowering kinds, mostly Japanese.

For twelve blooms of Madame C. Desgranges, Mr. Turk, gr. to T. Boney, Esq., Cholmeley Lodge, Highgate, was 1st; and Mr. John Wright, gr. to the Hon. Society, Middle Temple, 2nd. Both exhibits were of good quality. Mr. Turk was again 1st for twelve blooms of any other kind, showing Mrs. Burrell.

For twelve Pompon Chrysanthemums the 1st prize was secured by Mr. H. Neary, with a very fine exhibit staged in bunches of threes. The best were Blushing Bride, Alice Butcher, Mrs. Davis, Mrs. Cullingford, Madame Lyon Tassal, and Madame Jolley-vart; 2nd, Miss C. Debenham; and 3rd, Mr. Norman Davis, nurseryman, Camberwell. Mr. Beech, gr. to L. Seligman, Esq., Hereford House, South Kensington, was 1st for six bunches of Madame

C. Desgranges; and Mr. Jno. Wright 2nd. Mr. Beech being again 1st for six bunches of any of the yellow varieties of Madame C. Desgranges. For six blooms of Madame Desgranges or of its sports, Mr. H. Wedekind, 13, Warlock Road, Paddington, secured a Bronze Medal.

Gladiolus.—Prizes were offered for a collection of *Gladiolus* spikes, and Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge, was 1st, with about 120 spikes of good quality; W. Herbert Fowler, Esq., Claremont, Taunton, was 2nd, with a collection almost equally good.

For twelve spikes of distinct *Gladiolus*, the 1st prize went to E. B. Lindsell, Esq., Bearton, Hitchin, showing Pyramid, Mons. A. Brongniart, Le Vesuve, Bicolor, Atlas, Baroness Burdett-Coutts, Delila, Hesperides, Horace Vernet, African, Grand Rouge, and Crêpuscule. W. Herbert Fowler, Esq., was 2nd.

Dahlias.—There was a very good show of Dahlias, but as a report of the National Society's show at the Crystal Palace will be found in this issue, we must be very brief in noticing this section of the present exhibition. The principal class was for sixty blooms of Dahlias of any kind, and the successful exhibitors were Messrs. Keynes, Williams & Co., Salisbury; Mr. F. W. Seale, Vine Nursery, Sevenoaks; and Messrs. W. Heath & Son, nurserymen, Cheltenham, in their respective order. All three lots were of good merit, especially that of Messrs. Keynes, Williams & Co., who put up a magnificent group of specimens. The same exhibitors were again 1st in the class for thirty-six, being followed by Mr. Rawlings, nurseryman, Romford; and Mr. F. W. Seale, Sevenoaks.

For twenty-four blooms, Mr. George Humphries, Chippenham, was 1st; and Mr. S. Mortimer, Swiss Nursery, Farnham, 2nd.

For twelve blooms the same exhibitor was again 1st, being followed in this instance by Messrs. Saltmarsh & Sons, The Nurseries, Chelmsford.

In the amateurs' class for twenty-four, Mr. J. T. West was successful, with a stand of first-rate merit.

Messrs. Cheal & Son, with an excellent stand, won for twenty-four Pommpons; and Mr. Geo. Humphries, Chippenham, for twelve bunches. Messrs. Cheal & Son were also 1st for twenty-four bunches of singles; and Mr. F. W. Seale, Sevenoaks, was 2nd. For twelve bunches, T. W. Girdlestone, Esq., Sunningdale, was 1st; and for six, the 1st was E. Mawley, Esq., Rosebank, Berkhamstead.

Messrs. Cheal & Son were again 1st for decorative Dahlias, and for twelve bunches of Cactus; whilst for six bunches, Mr. W. Hopkins, Cross Hands, Pining, near Bristol, was 1st.

Messrs. Laing & Son had a very fine stand of hardy flowers, boxes of Roses, some good double Begonias, and some thirty dishes of Apples, culinary and dessert. Another collection of herbaceous flowers and Lilies came from Messrs. Pitcher & Manda, Hextable, Swanley. Mr. E. F. Such had also a collection of hardy herbaceous flowers, Roses, &c. Mr. Charles Turner stands of seedling Cactus and Pompon Dahlias. Messrs. Cutbush & Sons a group of hardy flowers. Mr. R. Dean a collection of dwarf and Runner Beans.

Messrs. Reid & Bornemann, Shrewsbury Road, Sydenham, exhibited a miscellaneous group of Chrysanthemums, stove and greenhouse plants, &c.—as pretty a group as we have seen for some time.

LOCAL SHOWS.

WARKWORTH FLOWER SHOW.—The thirty-third annual exhibition took place on August 22, in the courtyard of Warkworth Castle, by the permission of the Duke of Northumberland. Owing to a sunless season, there seemed to be a lack of competition. Roses, exhibited by Messrs. Harkness & Son, Bedale, attracted great attention. The principal prize-takers were:—Messrs. Harkness & Sons, Robson, Brown (Bedlington), J. Spoor, D. Wylam, J. Morris (Low Fell), N. Walker, Jas. Guy (Eastfield), R. J. Coulter, J. Wardle, A. Thompson, Jas. Thompson, Thos. J. Wilson (Warkworth), Geo. Robinson (Long Houghton), S. Egdell, and others.

SHERBORNE COTTAGE GARDEN SOCIETY.—The Cottagers' Garden Society, of which Mr. Wingfield Digby, M.P., of Sherborne Castle, is President and founder, held its second annual exhibition on August 31, in the grounds of the Old Castle at Sherborne. The weather was unpropitious, but, nevertheless, the show proved a success. The exhibits, numbering over 500, showed a considerable improvement in quality upon those of last

year. Of Potatoes, there were quite 150 entries, and the quality here displayed was high. Onions, Vegetable Marrows, Peas, Turnips, were also strong classes, and in every department of the exhibition there was a keenness of competition which at times gave the judges (Messrs. Crump and Pyper) trouble in the making of their awards.

DUNDEE.—The Dundee Horticultural Society's annual three days' show was opened on the Magdalen Green by Lord Kinnaird. His Lordship said that, according to his information, the exhibits on this occasion were up to the high standard previously reached by the Society, and he trusted that this manifested intelligent and marked progress in the sciences of horticulture, a progress which, he hoped, would grow deeper and deeper. It was clear, he said, that if they were to cope with the competition from abroad in the matter of fruit, they must be up and doing, and produce the best article. These horticultural societies were doing much for the moral and material progress of the country, and were assisting the people to use to the best advantage that leisure which, he hoped, they would gradually get more of.

STIRLING.—The annual show of the Stirling Horticultural Society was opened, Sept. 1, in the New Public Hall, ex-Provost Yellowlees performing the opening ceremony. The show was, as compared with previous years, a very good one, the exhibit of plants and flowers being especially fine; while fruits and vegetables were a large and splendid variety. The bee and honey exhibits were good, and altogether the show was an especially interesting one, notwithstanding the unpropitious weather of the past few days. The principal prize-winners were from Gargunnoch.

GREENLAW.—The eighth horticultural show, held Sept. 1, was entirely confined to amateurs, whose exhibits were in quality fully up to last year's. Pot plants were superior, and vegetables above the average.

GREENOCK.—The annual flower show of the Royal West Renfrewshire Horticultural Society took place, Sept. 1, in the Town Hall. The total entries were 846, as against 888 last year, the decrease being wholly in cut flowers, due, no doubt, to recent heavy rain. A special feature of the show was the wild flower section, for which a large number of prizes had been offered by the members of Greenock Burns Club. The entries in this section alone were sixty-nine, and some exceptionally fine collections were shown. The show was opened by Dr. N. G. Cluckie.

LOCKERBIE.—The annual horticultural show was held here, Sept. 1. The entries numbered nearly 800. Pot plants were a splendid show, especially in the gardeners' department, this portion of the show being much enhanced by a selection for exhibition only from Sir Robert Jardine's Castlemilk conservatories.

LIVERPOOL AMATEUR GARDENERS' ASSOCIATION.—The Liverpool branch of the National Amateur Gardeners' Association held their monthly exhibition at the Common Hall, Hackins-hey, on September 1. There was a capital entry of exhibits, and many of the plants were of the finest description. On the conclusion of the judging, an interesting and instructive paper on "Carnations" was read by Mr. Norris, who has been a grower of this kind of flower for many years.

SHIFNAL FLOWER SHOW.—The twenty-sixth annual show of the Shifnal Cottagers' Horticultural Society was held on Sept. 1 in the Cricket Field. The exhibits were staged in a large tent, the centre of which was adorned with groups of plants exhibited not for competition. The principal group belonged to the President of the Society, the Rev. W. B. Garnett-Botfield. Adjoining it was a group shown by Mr. J. T. Brooke, of Haughton Hall, its chief attraction being Orange plants, together with Palms, Coleus, Gloxinias, Ferns, Dracenas, and Chrysanthemums. Mrs. Kenyon-Slaney sent a smaller and well-arranged group, containing Coleus, Vallotas, Ferns, and Geraniums, and also Dahlias, Carnations, and Picotees; whilst Miss Kenyon-Slaney and Miss Maud Kenyon-Slaney exhibited a fine collection of Sweet Peas. Collections of cut flowers were exhibited by Messrs. Jones & Son, nurserymen, of Shrewsbury, and Mr. J. H. White, nurseryman, of Worcester; and honey, by Mr. E. Hampton, of Hatton. The vegetables, exhibited by cottagers residing in the parishes comprising Shifnal Union, were of fine quality, and there was good competition.

SWALWELL.—The thirteenth annual floral and vegetable exhibition in connection with the Swal-

well Garden Protection Society was held in the beautiful grounds of Axwell Park on September 3. The exhibitors consisted almost entirely of the working-classes; the exhibits were quite up to the standard of other shows which make greater pretensions. The competition for the Ramsay Challenge Cup, which is valued at 6 guineas, and which is offered for the best three Leeks, proved a great attraction. The cup has been held during the past year by Mr. Robert Gardner of Dunston, but on the present occasion it was wrested from him by Mr. Lawrence Johnson of Gateshead. The Leeks shown were perhaps the finest that have been exhibited in the North during the present season.

PRUDHOE.—The thirty-eighth annual show in connection with Prudhoe and West Wylam Floral and Horticulture Society took place on Sept. 3 at Prudhoe. Compared with previous years, it was the largest show that has been held since the formation of the Society, whilst in point of excellence it has never before been equalled. Each department was greater in size, and the whole of the exhibits were of superior quality. There was a grand show of plants in pots. In the cut flower section, there was a choice variety of bloom, Dahlias, Carnations, Picotees, and hand-bouquets being very conspicuous. Fruit was of excellent quality, whilst vegetables formed one of the prominent features of the show. Messrs. Fell & Co., the well-known nurserymen of Hexham, had an attractive exhibition at the entrance of the show of exotic plants and cut blooms, including Roses and hardy flowers of the best kinds.

KENTON BAR.—Kenton Bar flower show was held on Sept. 3, in a field adjoining the village, and kindly lent for the occasion by Mrs. White, Kenton. The flowers and vegetables upon the benches were quite up to the average. In both divisions excellent specimens were noted. Among the flowers, Roses, whilst not largely in evidence, were far superior to many we have come across in the most important of local shows.

VARIORUM.

EXTINCTION OF BRITISH PLANTS.—Lovers of rural England are aware that changes are taking place in the fauna and flora of the country. In too many cases these changes possess a melancholy interest, for they savour of extinction. Birds and other animals have forsaken haunts which were once familiar to them, and plants of divers species have been exterminated in localities where they were once known to abound. Many and varied are the causes which have been in operation, but whilst some of them were inevitable, others it is equally certain are preventable. For five years a committee of the British Association has been collecting information as to the disappearance of native plants from their local habitats, and year after year it has reported the same story of suppression or extermination. This year it is the West of Scotland which has been the special area of observation, and about fifty species of native plants are recorded as having disappeared from places which not long since were included amongst their regular haunts. The graceful meadow Rue has vanished from a spot on the banks of the Clyde owing to some unascertained cause. The celery-leaved Crowfoot has disappeared from a locality in Dumfriesshire owing to the reclamation of a marsh. The superb Mountain Globe flower has become extinct at a place in Ayrshire. The quaint yellow-horned Poppy has been swept away by summer visitors on the coast of Argyllshire, between Danoon and Toward. The burnet-leaved Sweetbriar has been washed away by a high tide at Seamill, on the coast of Ayrshire. The island of Cumbrae, Buteshire, has been almost entirely bereft of its Primroses by fair depredators who should know better, "being carried off in basket loads by lady visitors." The very rare smooth Gromwell is rapidly disappearing from the Argyll shore, "being probably all gathered by collectors and summer visitors." At Stevenston, Ayrshire, the Viper's Bugloss, with its many-coloured flowers, has fallen a victim to drifting sand. At Cambuslang, Lanarkshire, the exigencies of a new railway have led to the extinction of the lesser Skullcap. The fragrant

Sweetgale, or Bog-myrtle, has forsaken West Kilbride, Ayrshire, after the draining of a bog. At Kilwinning, in the same county, the quaint Bird's-nest Orchid has been rooted out by school children, whilst that sweet Orchid, the Heileborine, has been cleared out of the Isle of Arran, for removal to gardens, where, in ungenial environments, it will probably perish. At Gourrock Burn, Ayrshire, the Daffodil has met with a similar fate. At Crosbie Glen, another locality in Ayrshire, the native Snow-drop was threatened in like manner, but luckily the proprietor intervened. Of Ferns, the black Spleenwort, the sea Spleenwort, the green Spleenwort, and the Maidenhair Spleenwort are being cleared out of the Western Isles and the Argyllshire hills, their roots being offered for sale in large numbers in the streets of Glasgow. Near Paisley the Ceterach has fallen a victim to a Fern dealer. At Portincross Woods and at Hindog Glen, in Ayrshire, the Hart's-tongue has almost disappeared. In the Island of Cumbrae the same Fern was growing abundantly fifty years ago, whilst now it is difficult to find a single specimen. "In summer the lady visitors were seldom seen leaving the island without a basket of Ferns, a practice carried on year after year, till now, when the Ferns are nearly exhausted, the gathering mania is passing from Ferns to Primroses," as intimated above. The royal Fern, *Osmunda regalis*, is vanishing, or has gone, from numbers of localities in the Isle of Arran, "having been carried away by cartload and boatload." The Fir Club Moss is disappearing from Mons, Ayrshire, owing to drainage, and from the Western Isles on account of the demand for sale in Glasgow. Cases such as these can unfortunately be paralleled in all districts of our island, and our towns are not as a rule so noted for their loveliness that we can afford to sacrifice without a protest any part of the wild Britain that still remains. The rarer a species happens to be, the greater is the mania amongst so-called "collectors" to exterminate it. At the present time the beautiful coral-seeded *Præny* has been driven to its last foothold of British soil in one of the islands of the Bristol Channel. Those who know where the Snake's-heads dot the greensward in Oxfordshire, where the lovely Pasque flower revels in the soil of the Cotswold Hills in Gloucestershire, where the Lily of the Valley sheds its fragrance upon the air in the deep woods of Kent, or where the lurid *Asarabacca* lurks in the lanes of Wiltshire, render the best service by keeping their discoveries to themselves. *Morning Post*, August 23.

INCORRECTLY NAMED ROSES.

DURING the last few weeks I have had several lots of Roses forwarded to me, with a request that they might be named. Many of these had names attached to them, and it was remarkable how very few of them were correct. I am quite aware of the sometimes totally different character, as well as slight variations that many Roses assume in different districts and soils; but when one finds several of the plants sent to purchasers under the names of newer kinds, are no more or less than some of the old and out-of-date varieties with the names of our best new Roses attached, I feel it is time attention was drawn to the matter.

I can understand such transparent mistakes in naming as Climbing Forestier for Celine Forestier, and similar errors. In these cases I have no doubt the names were badly written in the first place, or were partially obliterated before being made secure and plain by the purchaser; with the result that after much scrutiny, the nearest name possible was made out of the few existing marks. A batch of Roses are to hand this morning from Scotland, and out of about fifteen varieties, only six are true. Even these are in some cases slightly mixed; for example, Climbing Forestier for Celine Forestier; Madame for Prince Camille de Rohan, &c. There are two sent as Dr. Andry, one being Duchess of Edinburgh, and one Prince Camille de Rohan; both of these were purchased as Dr. Andry, and my correspondent

assures me they were so named when received from the nurseryman. "Cheap (?) Roses," and those purchased at sales, are the most fruitful cause of wrong names. Unless more care be taken in this respect, "What's in a name?" will soon be unpleasantly true to the real lover of Roses.

I shall be very pleased indeed to assist, to the best of my ability, in naming any Roses my readers may be doubtful about, and if they will forward a full and a half-blown flower, with a little of the growth attached, I will reply to them at once.

Pack firmly, placing the stem of the Rose in a small piece of Potato, and using Spinach leaves, if possible, in preference to moss or cotton-wool, and post to A. Piper, The Nursery, Uckfield, Sussex.

THE INFLUENCE OF DEPTH IN THE SOIL ON GERMINATION.

THE vigour of vegetation during germination may depend on the depth at which the seed is planted in the soil. "There is a medium in all things," and care is not usually exercised upon this important condition of healthy development. If the seed be planted too near the surface, the seedling is not vigorous. The best depth for each species can only be determined by trial, but it does not in any way depend upon the size of the seed. KRAUSS has been experimenting in this direction lately, and has written a paper embodying his chief results in the *Forsch. aus d. Geb. d. Agriculturphysik* (it has also been translated into French, vide *BONNIER'S Rev. Gén. de Bot.*, iii., p. 438). It is curious to find that leguminous seeds are, within certain limits, indifferent to the depth at which they are planted. Vegetative reproductive organs, such as the eyes of Potatoes, are subject to the same law.

TRADE NOTICE.

MESSES. PROTHOROE & MORRIS announce that they are about to enlarge their premises in Cheapside, E.C., by an additional sale-room on the ground-floor. It will be lit with the electric light, will communicate directly with the existing room, and will have a separate entrance from Queen Street, E.C. The sales of Dutch bulbs last year, we are told, averaged 12 tons weekly during the season, and Orchid sales take place twice weekly, and yet additional sale-room is required.

MARKETS.

COVENT GARDEN, September 8.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.]

No alteration. Business keeps very flat. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, p. half-sieve	1 0-3 6	Peaches, per doz.	2 0-6 0
Grapes, per lb.	0 6-1 6	Pine-apples, St. Michael	4 0-8 0
Kent Filberts, per lb.	0 6-0 8	Plums, p. half-sieve	2 0-4 0
Lemons, per case	15 0-35 0		
Melons, each	0 6-1 3		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	15 0-30 0	— per 100	5 0-8 0
— specimen, each	7 6-21 0	Ficus elastica, each	1 6-7 6
Asters, per doz.	3 0-6 0	Fuchsia, per doz.	3 0-6 0
Balsams, per doz.	3 0-6 0	Heliotrope, per doz.	3 0-6 0
Begonia, per doz.	6 0-12 0	Hydrangea, per doz.	9 0-18 0
Campanula, per doz.	6 0-9 0	Lilium, various, doz.	18 0-30 0
Chrysanthemums, p. doz.	4 0-12 0	Marguerite, per doz.	6 0-12 0
— large plants, ea.	1 6-2 6	Mignonette, doz. pots	4 0-6 0
Coleus, per doz.	3 0-6 0	Palms, various, each	2 0-10 0
Cyperus, per dozen	4 0-10 0	— specimens, each	10 6-84 0
Dracena, each	1 0-5 0	Pelargonium, p. doz.	6 0-12 0
		— scarlet, p. doz.	2 0-4 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0-4 0	Odontoglossum
Asters, p. doz. bun. 1 6-4 0	crispum, 12 blms. 2 0-6 0
Carnations, 12 blms. 0 9-1 6	Mignonette, 12 bun. 1 0-3 0
— 12 bunches ... 3 0-6 0	Myosotis, or Forget-me-not, 12 bunches 1 6-3 0
Chrysanth-mums, p. doz. blooms 0 6-2 6	Pauses ... 1 0-2 0
— p. doz. bunches 3 0-9 0	Pelargonium, scar-
Cornflower, 12 bun. 1 6-3 0	let, per doz. 2 6-4 0
Eucharis, per dozen 1 0-2 6	— 12 sprays ... 0 6-1 0
Gardenia, per dozen 1 6-3 0	Poppies, 12 bunches 2 0-4 0
Gladiolus, doz. bun. 6 0-12 0	Primula, double ... 4 0-6 0
— p. doz. spikes 0 9-1 6	Pyrethrum ... 2 0-4 0
Heliotrope, per doz. sprays ... 0 3-0 6	Roses, Tea, per dozen 0 6-2 0
Lavender, doz. bun. 4 0-6 0	— coloured, dozen 1 0-1 6
Lilium Harrisii, doz. 2 0-4 0	— yellow (Maré-
— various, do. ... 1 0-3 0	chals), per doz. 2 0-5 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— red, per dozen ... 1 0-2 0
Marguerite, per doz. bunches ... 3 0-4 0	— outdoor, 12 bun. 2 0-6 0
Orchids:—	Stephanotis, 12 sprays 1 6-3 0
Cattleya, 12 blms. 4 0-8 0	Stocks, doz. bunches 3 0-4 0
	Sunflower, doz. bun. 2 0-6 0
	Sweet Peas, doz. bun. 1 0-3 0
	— Sultan, 12 bun. 1 6-3 0
	Tuberose, 12 blms. 0 3-0 6

ORCHID-BLOOM IN VARIETY.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-...
Beans, French, lb. ... 2 6-3 0	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 2 0-3 0	Parsley per bunch ... 0 3-0 6
Carrots, per bunch ... 0 4-0 6	Shallots, per lb. ... 0 6-...
Cauliflowers, each ... 0 3-0 6	Spinach, per bushel 3 6-...
Cucumbers, each ... 0 4-0 8	Tomatoes, per lb. ... 0 4-0 9
Endive, per dozen 2 0-3 0	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

MARKETS firm, at late quotations. J. B. Thomas.

SEEDS.

LONDON: Sept. 7.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that the demand for Trifolium is now meagre. For winter Tares, which are very scarce, high rates are obtained. Rye continues firm. New Rape seed, being cheap and good, attracts attention. In Canary seed, the excitement on the market has somewhat abated, but nevertheless prices continue firm. Hemp seed remains firm at recent prices. The new Peas now showing are of good quality, and the prices asked are moderate. White sowing Mustard, which is very scarce, tends upwards. Linseed, Dari, and Buckwheat unchanged. Other articles offer no subject for remark.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (bushel), for the week ending September 3, and for the corresponding period last year:—1892: Wheat, 29s. 1d.; Barley, 24s. 2d.; Oats, 20s. 3d. 1891: Wheat, 41s. 8d.; Barley, 29s. 3d.; Oats, 21s. 8d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 110s.; do., inferior, 46s. to 75s.; Hay, best, 60s. to 105s.; do., inferior, 20s. to 50s.; and Straw, 26s. to 38s. per load.

FRUITS AND VEGETABLES.

SPITALFIELDS: Sept. 6.—Quotations:—English Apples, 2s. 6d. to 4s. per bushel; Pears, 2s. 6d. to 4s.; Egg Plums, 2s. to 2s. 6d.; Victoria do., 2s. 6d. to 3s. 3d.; Orleans do., 2s. 9d. to 3s. 6d.; Damsons, 3s. to 3s. 3d.; Green Gages, 3s. to 4s. per half-sieve; English Tomatoes, 4s. per peck; foreign do., 6d. to 1s. 6d. per box; Seakale, 9d. to 1s. per punnet; Cabbages, 2s. to 2s. 9d. per tally; Spinach, 1s. 6d. to 2s.; French Beans, 1s. 6d. to 2s.; Scarlet do., 1s. to 2s.; Peas, 1s. 6d. to 2s. 6d. per bushel; Turnips, 2s. to 2s. 3d.; Carrots, 1s. 6d. to 2s. 3d.; Onions, 1s. 9d. to 2s.; Parsley, 1s. to 1s. 6d. per dozen bunches; Endive, 9d. to 1s.; Cabbage Lettuces, 2d. to 3d.; Leeks, 2s. to 2s. 3d.; frame Cucumbers, 1s. 6d. to 2s.; natural do., 6d. to 9d. per dozen; Cos Lettuce, 3d. to 4d. per score; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Belgian Onions, 2s. 9d. to 3s. 3d.; Dutch do., 2s. 9d. to 3s. 6d. per bag of 110 lb.; Spanish do., 4s. 3d. to 5s. 6d. per case; Horse Radish, 1s. to 1s. 2d.; Celery, 9d. to 1s. per bundle.

STRATFORD: Sept. 6.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Cabbages, 2s. to 3s. 6d. per tally; Cauliflowers, 1s. to 1s. 6d. per dozen; 3s. 6d. to 5s. per tally; Turnips, 1s. 6d. to 2s. per dozen bunches; Mangolds, 20s. to 22s. 6d. per ton; Beans, 1s. 6d. per sieve; Onions, English, 1s. 6d. to 2s. per dozen bunches; Port, 5s. 6d. to 9s. per case; Apples, English, 2s. 6d. to 3s. 6d. per bushel; eating, 3s. 6d. to 6s. 6d. do.; Cucumbers, 1s. to 2s. 6d. per dozen; field do., 3d. to 6d. do.; Scarlet Beans, 6d. to 1s. 6d. per sieve; 1s. to 2s. 6d.; Damsons, 3s. to 3s. 3d. per half-sieve; Plums, 2s. to 3s. 6d. do.; Greengages, 4s. to 5s. do.; Pears, 1s. 6d. to 2s. per molley; 2s. 6d. to 3s. 6d. per half-sieve; Carrots, 2s. to 2s. 6d. per dozen bunches.

BOROUGH: Sept. 6.—Quotations:—Cabbages, 2s. 6d. to 4s.; Marrows, 2s. 6d. to 3s. per tally; Scarlet Beans, 6d. to 1s.;

French do., 1s. to 1s. 6d. per bushel; Peas, 2s. 6d. to 3s. 6d. per bag; Cauliflowers, 1s. to 2s. 6d. per dozen; Lettuces, 6d. to 1s. per score; Carrots, 2s. 6d.; Turnips, 3s. to 4s.; Parsley, 2s. per dozen bunches; English Onions, 3s. 6d. to 4s. per cwt.; Horseradish, English, 2s. 6d.; foreign do., 2s. per bundle; English Apples, 2s. 6d. to 5s. per bushel.

FARRINGTON: Sept. 8.—Quotations:—Apples, cooking, 3s. to 3s. 6d. per bushel; do., Maux Codlins, 3s. 6d. do.; Pears, Hazel, 5s. to 6s. do.; Cucumbers, frame, 1s. 6d. per dozen; Plums, Victoria, 4s. per half-bushel; do., Orleans, 4s. 6d. do.; Grapes, Lisbon, 9s. per box; Tomatoes, 2s. per box of 18 lb.

POTATOS.

BOROUGH: Sept. 6.—Quotations:—English Magnums 50s. to 70s.; Hebrons, 60s. to 60s.; Snowdrops, 60s. to 75s. per ton.

SPITALFIELDS: Sept. 6.—Quotations:—Magnums, 50s. to 60s.; Sutton's Early Regents, 50s. to 60s.; Imperators, 50s. to 60s.; Hebrons, 50s. to 65s.; Early Rose, 50s. to 55s.; White Elephants, 55s. to 60s.; Snowdrops, 60s. to 80s.; Sutton's Abundance, 50s. to 65s.; Fillbaskets, 50s. to 60s.; Reading Giants, 50s. to 60s. per ton.

STRATFORD: Sept. 6.—Quotations:—Magnums, light land, 55s. to 65s.; do., dark land, 50s. to 55s.; Hebrons, 60s. to 70s.; Snowdrops, 60s. to 70s.; per ton.

GENERAL AVERAGES: Sept. 7.—Hebrons, 60s. to 75s.; Magnums, 60s. to 70s.; Snowdrops, 65s. to 80s.; Imperators, 50s. to 60s.; Kidneys, 60s. to 65s.; Early Regents, 50s. to 60s. per ton.

FARRINGTON: Sept. 8.—Quotations:—Snowdrops, 60s. to 70s.; and Magnum Bonums, 60s. to 70s. per ton.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.				No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
	Above (+) or below (−) the Mean for the week ending September 3.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.			
0	4	52	0	8	212	3	166	29.2
1	4	58	0	170	241	12	132	18.1
2	1	92	0	99	186	8	128	16.5
3	1	110	0	80	210	2	120	16.1
4	1	100	0	55	250	4	113	15.1
5	0	123	0	65	138	5	100	13.5
6	3	70	0	82	193	20	128	28.7
7	2	95	0	51	165	17	119	22.6
8	1	103	0	9	117	10	117	17.4
9	3	78	0	68	122	8	141	21.2
10	2	96	0	6	132	6	126	25.2
* 1	+	134	0	85	42	9	117	17.2

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.

Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands)

THE PAST WEEK.

The following summary record of the weather for the week ending September 3, is furnished from the Meteorological Office:—

"The weather during this week was extremely unsettled, with frequent and heavy falls of rain in all districts. Thunderstorms were experienced over the northern parts of England on Tuesday, and again at a few stations on Saturday.

"The temperature just equalled the mean in 'England, S.' and slightly exceeded it in the 'Channel Islands.' In all other districts it was below, the deficit in the north and east of Scotland being 4°. The highest of the maxima were registered during the earlier part of the period, and ranged from 73° in the 'Channel Islands,' 72°

in 'England, E.' and 71° in the 'Midland Counties' and 'England, S.' to 63° in 'Scotland, W.' and 60° in 'Scotland, N.' The lowest of the minima were recorded either on August 29 or September 3, when the thermometer fell to between 32° and 35° in Scotland, to between 40° and 42° in Ireland, and to between 37° and 45° in England. In the 'Channel Islands,' the thermometer did not fall below 54°.

"The rainfall exceeded the mean in all districts. Over the Kingdom generally the fall was more than twice as much as the normal, and in some of the north-western districts more than three times as much.

"The bright sunshine was below the mean very generally, but exceeded it at some of the extreme northern stations. The percentage of the possible duration ranged from 47 in the 'Channel Islands,' to between 34 and 38 over the greater part of England, to 26 in 'Scotland, W.,' 25 in 'Ireland, N.,' and 22 in 'Scotland, N.'"

NOTICES TO CORRESPONDENTS.

** PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

ASSESSMENT OF GREENHOUSES: G. C. See p. 308, of present issue.

BOOKS: G. E. Domestic Floriculture, W. Burbidge, published by W. Blackwood & Sons, Edinburgh and London.—Select Ferns and Lycopods, by B. S. Williams, Victoria Nurseries, Upper Holloway, N.; published at same place.—W. S. Carnation Manual, published by Cassell & Co., Limited, London. Free to members of the Carnation and Picotee Society.

CORRECTION: In report of Earl's Court Show in last issue, the Gold Medal accredited to Messrs. Butt & Son, was awarded to Mr. Geo. Monro, who, after staging, sold the whole exhibit to Messrs. Butt & Son.

EXHAUSTED SOIL: Slugs. Could you not remove one or two of the trees, or, failing that, have them reduced somewhat by careful lopping? The land might be improved by deep digging, but avoid trenching it, unless it has been so treated in times gone by. If the subsoil has not been touched, about 1 or 2 inches, if it be clayey stuff, might be spread over the surface, doing this before winter sets in. Gravel is best left alone. An equally thick layer of strong adhesive top-spit loam from a pasture would be of more immediate benefit to plants; and a heavy dressing of half-rotted stable-dung would do much good dug in without letting it waste its goodness by laying on the surface for any length of time. Liming the soil of an evening in damp weather will do much to lessen the slug plague. These creatures may be caught by means of Cabbage-leaves and heaps of bran laid about the garden. Pieces of board or slate placed just above the soil make good harbouring-places, and many may be trapped in this way. Deep digging will lessen their numbers, and a few pinioned ducks or a sea-gull would help to make a clearance of them.

FUNGUS: K. E. There are no means by which you can get rid of the fungus spores on the Ferns, but you could hunt out all the fungus whilst still immature. It grows in decaying wood, &c.

GRAPES: R. E. Hardwick. The berries are affected with "spot," a disease for which there is no known cure. See p. 286 in our last issue.

GRAPES AND VINE LEAVES: A. H. J. The leaves are literally being devoured by thrips, red-spider, mealy bug, &c., and the berries are just such as one would expect to find with leaves in such a bad state as are these. The fruit should be cut and given to the pigs, and the viney, if possible, exposed fully to the elements. If the laterals are growing at the usual length, cut them back to about 1 foot from the main stem. Clear out and burn all these trimmings, also all fallen leaves. Shovel out the upper crust of soil to a depth of 2 to 3 inches, and top dress. It may be necessary to replant in fresh soil the whole of the Vines, but of the necessity for that we are unable to judge from the samples of fruit and leaves sent. Lime-wash the walls twice, wash with soap and water all woodwork and the glass, and in the winter

clear the Vines after finally pruning them of all loose bark. Paint the whole of the wood with petroleum emulsion or some kind of smothering mixture like clay, cow dung, soot, and Gishurst's soap at the rate of 4 oz. to the gallon of other ingredients. This should be rubbed well into all cracks and crevices. Buy the *Vine and Vine Culture* by Mr. A. F. Barron, published at 171, Fleet Street, or *Grape Growing for Amateurs* by Mr. E. Molyneux, published by L. Upcott Gill, 170, Strand, W.C.

GRASSES FOR BINDING SAND-HILLS WASHED BY THE SEA: *A. M. Elymus arenarius* and *Arundo arenaria*.

LINDLEY'S VEGETABLE KINGDOM: *J. M., New Jersey*. There is no modern edition of this. The nearest approach to what you want is in Hentley's Elementary Course of Botany (*J. Van Voorst, Pater-noster Row*).

NAMES OF FRUITS: *S. & M., Kelso*. Apple: Keswick Codlin.—*Carter & Co.* Plum: Duke of Edinburgh.

NAMES OF PLANTS: *Thos. C. & Sons*. *Astrantia helleborifolia*.—*W. H. D.* A Boragineous plant, allied to *Cynoglossum*. We regret we cannot get nearer to it, but the specimen had collapsed before we got it.—*Constant Reader, W. 1*, *Helleborus foetidus*; 2 *Spiraea Lindleyana*; 3, *Geranium sylvaticum*; 4, *Rudbeckia speciosa*; 5, *Agrostemma coronaria*; 6, *Pulmonaria officinalis*; 7, *Chelone obliqua*; 8, *Helenium autumnale*; 9, *Kerria japonica*, double flowered var.—*B. F.* *Medicago echinus*, the Calvary Clover.—*Constant Reader*. 7, *Impatiens Roylei*. Send the Gooseberries to a grower of these fruits.—*W. S.* *Veronica Andersoni*. We cannot name the *Fuchsias*, send them to some grower.—*C. W. D.* *Veronica* next week. The *Sedums* are both varieties of *S. maximum*.—*M. R.* We cannot give you further information than the following:—1, *Ulmus Berardi*; 2, *Virgilia lutea*; 3, *Ulmus viminalis* var.; 4, *Quercus Cerris* variegata; 5, *Ulmus*; 6, *Quercus*; 7, *Fraxinus*; 8, not recognised; 9, *Crataegus*; 10, *Ulmus*; 11, *Sambucus nigra*; 12, *Fraxinus*.—*B. L. 1*, *Rudbeckia Neumanni*; 2, *Helianthus decapetalus*; 3, *Helenium autumnale*; 4, next week; 5, *Rudbeckia Neumanni*; 6, *Helenium autumnale*; 7, *Symphytum asperillum aureo variegatum*; 8, *Rudbeckia Neumanni*.—*G. H. 1*, *Alnus cordata*; 2, *Panicum plicatum*; 3, *Reineckia carnea* variegata.—*A. Fairbairn*, 1, *Solidago canadensis*; 2, *Eranthemum variegatum*; 3, *E. aureum reticulatum*.—*Enquirer*. 1, *Adiantum formosum*; 2, *A. decorum*; 3, *Aspidium falcatum*; 4, *Adiantum tenerum*; 5, *Davallia bullata*; 6, *Adiantum Mariesii*.—*T. R.* *Cattleya Loddigesii*.—*G. P. H.* *Oncidium incurvum*.—*J. M. 1*, *Polypodium glaucum*; 2, *Aspidium pungens*; 3, *Phyllanthus nivosus variegatus*; 4, *Magnolia sp.*, send when in flower; 5, *Begonia Digwelliana*.—*G. H.*, *Brighton*, 1, *Abelia rupestris*; 2, *Hibiscus syriacus fl.-pl.*; 3, *Begonia discolor*.—*T. Imlie & Sons*. *Senecio elegans*.—*C. C.*, *Brighouse*. *Lysimachia vulgaris*.

PEACH: *G. H.* There is a mould on the skin, but it is unknown to us; and, moreover, we cannot tell if it is the cause or the consequence of the disease. It has nothing to do with *Glaeosporium*, the ordinary destructive germs upon fruits. Another season, a timely application of one of the accepted remedies against mildew might be of service.—*R. H.* No insects or fungus, but probably a root-trouble, caused by lack or excess of nutriment—most likely the latter.

RHUBARB: *Amateur*. The price for planting roots should not exceed 6s. to 8s. per dozen. The plant may be raised from seed, but the produce would be very varied in character, and you would have to wait at least three years before the plants afforded usable stalks. Sow in March in a cold frame, and prick off when large enough to handle. Early varieties are *Myatt's Linnaeus*, *Kershaw's Paragon*, and *St. Martin*.

PHOTOGRAPHS RECEIVED.—*H. M.*—*W. L.*—*A. W. E.*

SPECIMENS RECEIVED.—*J. P.*—*Apples, G. G.*

COMMUNICATIONS RECEIVED.—*H. M.*—*H. E. C.*—*Charles*.—*J. C.*—*W. S.*—*T. E. H.*—*J. P.*—*E. R. S.*—*J. B.*—*W. D.*—*Dr. Cooke*.—*H. R. M.*—*J. P.*—*E. C.*—*M. T.*—*C. C. H.*—*Pope & Sons*.—*W. J. T.*, Hong Kong.—*R. B.*—*City Press*.—*Expert*.—*W. N.*—*T. H.*—*W. J. B.*—*J. D.*—*M. T.*—*T. R. B.*—*K. E.*

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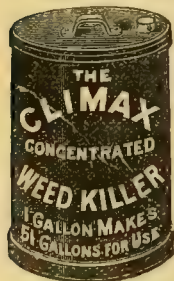
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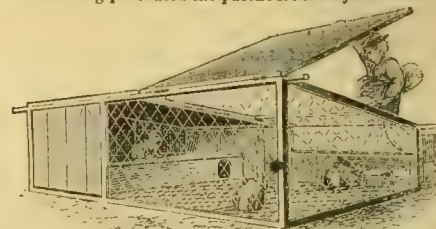
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THE

HORTICULTURAL DIRECTORY

FOR 1893.

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On view morning of Sale, and Catalogues had.

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MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Rooms, on MONDAY NEXT, September 19, and THURSDAY NEXT, September 22, at 12 o'clock precisely, consignments of *CAMELLIAS*, *AZALEAS*, *PALMS*, and other plants, from well-known Nurseries in Belgium.

The Sale will also include an importation of rare Iris from the Holy Land, Anemones, Hardy Climbers, including Clematis, Ampelopsis, and others; Tree and Border Carnations, a quantity of the new Pink, "Her Majesty," Greenhouse Ferns from an English Nursery, and about 100 lots of miscellaneous Bulbs.

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Clapham, S.W.—Expiration of Lease.

GREAT CLEARANCE SALE OF CHOICE ORCHIDS, by order of Messrs. Charlesworth, Shuttleworth & Co., to be held on the Premises, 213, Park Road, Clapham, S.W., on TUESDAY NEXT, September 20, and two following days.

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THIRD ANNUAL TRADE SALE of well-grown STOVE and GREENHOUSE PLANTS, fit for immediate Sale, by order of Messrs. Roberts Brothers.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by AUCTION, on the Premises, the Moat Nursery, East Grinstead, close to the Railway Station, on TUESDAY NEXT, Sept. 20, at half-past 11 o'clock precisely, the following unusually WELL-GROWN STOCK:—

200 Specimen <i>Eucharis</i> , a grand lot of clean plants	50 <i>Marechal Niel</i> Roses, rods 8 to 10 feet long
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800 Mixed Ferns	3000 Roses in pots
2300 <i>Bouvardias</i> of sorts, in 48-pots	1500 <i>Adiantum cuneatum</i> , in 48-pots
800 <i>Cyperus</i>	350 <i>Grevillea robusta</i>
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Maidenhead.

UNRESERVED SALE of well-grown GREENHOUSE and STOVE PLANTS, FERNS, &c., by order of Mr. R. Owen.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION on the Premises, the Floral Nursery, Castle Hill, Maidenhead, on WEDNESDAY NEXT, September 21, at 12 o'clock, 2000 GREENHOUSE PALMS and FERNS, 1000 *CYCLAMEN*, 500 *PELARGONIUMS*, 1000 *BEGONIAS* (tuberous and fibrous roots in pots and for bedding), Seedling *CHRYSANTHEMUMS*, 1000 Dwarf ROSES, on own roots and Manetti Stocks; 500 *IVIES*, 300 *P. EONIES*, 1000 *ARBOR-VITAE LAURELS* and other SHRUBS, 1000 *NARCISSUS* for planting, &c.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.

THOUSANDS of Imported *ODONTOGLOSSUM ALEXANDRE*, in fine condition.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. F. Horsman & Co., Colchester, to sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 23, at half-past 12 o'clock, THOUSANDS of Imported *ODONTOGLOSSUM ALEXANDRE*, in fine condition, collected by the employees of Mr. John Carder (late of the firm of Messrs. Shuttleworth, Carder & Co.). It is a splendid consignment, and all will be offered. In addition, Messrs. F. Horsman & Co. will include some superbly-grown *CATTLEYAS* of all the leading varieties in sheath (unflowered), also other CHOICE ORCHIDS in spike for Winter and Spring Blooming.

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Brixton, S.W.

GREAT ANNUAL TRADE SALE of beautifully-grown PALMS, FERNS, and OTHER PLANTS.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, The Nursery, Wiltshire Road, Brixton, S.W., 10 minutes' walk from Loughborough Junction and Brixton Stations, on MONDAY, September 26, at 12 o'clock, by order of Messrs. Lane & Martin, 3000 *KENTIA BELMOREANA* and *FOSTERIANA*, fine plants, in 48 and 66-pots; 3000 *LATANIAS*, in 32 and 48-pots; 1000 *SEAFORTHIA ELEGANS*, 300 *CORYPHAS*, 1000 well-grown FERNS, 600 *DRACENAS RUBRA*, 500 *ASPIDISTRAS*, in 48's; 800 *CYPERUS ALTERNIFOLIUS*, 1200 *C. VARIEGATA*, 10,000 FERNS, in variety; *LIME TREES*, *CYCLAMENS*, SPECIMEN PLANTS for Furnishing, *BEGONIAS*, &c.

On view. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Fine-apple Nursery, Maida Vale.

GREAT UNRESERVED CLEARANCE SALE of GLASS ERECTIONS, PLANTS, ORCHIDS, and UTENSILS in TRADE, by order of Messrs. Hooper, Dyer & Co., the Land having been disposed of for Building Purposes.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, the Fine-apple Nursery, Maida Vale, N.W., a few minutes' walk from Edgware Road and St. John's Wood Stations, on TUESDAY, September 27, and THREE FOLLOWING DAYS, at 12 o'clock precisely each day, 3000 ESTABLISHED ORCHIDS, mostly for cool house culture, and consisting chiefly of *Odontoglossums*, *Masdevallias*, *Cyripediums*, and *Oncidium*; thousands of PALMS, in all sizes, including some specimens comprising *Kentias*, *Latanias*, *Peasforthias*, and others; *SARRACENIAS*, specimen *CYCAS*, *ZAMIAS*, and TREE FERNS, a fine collection of *CALADIUMS*, a large assortment of Herbaceous and Bulbous PLANTS, a quantity of the beautiful hardy *CRINUM POWELLI* and *POWELLI ALBA*, 40,000 good *KENTIA* SEEDS, the ERECTION of the magnificent Winter Garden and Conservatory, which was built at a considerable expense. Also several GREENHOUSES, thousands of feet of HOT-WATER PIPING, BOILERS, several old LIGHTS, SEED-DRAWERS, SUMMER-HOUSES, OFFICE FURNITURE, HORTICULTURAL IMPLEMENTS, and UTENSILS in TRADE. The ornamental IRON RAILING in front, and the BUILDING MATERIALS of the Residence.

May be viewed three days prior to the Sale. Catalogues may be had on the Premises; at the Seed Warehouse, Covent Garden, W.C.; and of the Auctioneers & Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The valuable GOODWILL of this Branch Nursery will be offered as a separate lot on the FIRST DAY. The Purchaser will have access to the books, and the addresses of all Customers handed to him.

Henfield, Sussex.

Abutting on the London, Brighton, and South Coast Railway, about ten minutes' walk from Henfield Station.

By Order of the Trustees of the late S. Clarke, Esq.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on WEDNESDAY, September 28, at 2 o'clock, in Three Lots, the exceedingly choice FREEHOLD MARKET GARDEN and NURSERY, most favourably situated, and known as the Henfield Nurseries, Sussex, comprising a modern and convenient brick-built Residence, Twenty-two Greenhouses and Vinerias, all heated; Pits, brick-built Stabling, and other Trade Buildings. Also Cottages, and another Dwelling-house, Orchard, and productive Market Garden and Nursery Land, the whole containing an area of about 11 Acres. Possession will be given on completion of the purchase.

Particulars and plans had at the Mart; of Messrs. Howlett & Clarke, Solicitors, 8, Ship Street, Brighton; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C.

Heaton Norris Nurseries, near Stockport and Manchester, ten minutes walk from Heaton Norris on the London and North Western line, Manchester to Crewe.

ABSOLUTE CLEARANCE SALE, Without Reserve, by order of Messrs. G. and W. Yates, who are relinquishing this branch of the business in order to devote their whole attention to the seed trade.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION on the Premises, the Nurseries, Green Lane, Heaton Norris, near Stockport and Manchester, on MONDAY, October 3, and THREE FOLLOWING DAYS, at 12 o'clock precisely, the whole of the valuable NURSERY STOCK, covering 11 acres of ground, comprising 5000 Ornamental Flowering and Foliage TREES and SHRUBS, 6000 Hybrid and Named RHODODENDRONS, including Waterer's and other exhibition varieties, these being a specialty; RHODODENDRON STOOLES full of layers; 6000 CONIFERS and Evergreen BORDER SHRUBS; 7000 fine HOLLIES, including many specimens 3 to 6 feet; 10,000 FRUIT and ORNAMENTAL TREES; 30,000 Privet HOLLIES, and quick for hedges; ROSES, IVIES, CLIMBERS, HERBACEOUS PLANTS, and OTHER STOCK.

Also eight span-roof GREENHOUSES, 40 to 60 feet long; 150 feet of FRAMES, three BOILERS, almost new; nearly 2000 feet of 4-inch PIPING, &c.

May be viewed. Catalogues had on the Premises, at the Seed Warehouse, 28, Market Place, Manchester, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The LAND, about 10 acres, TO BE LET, rent 23 per acre. The Nurseries are only 6 miles from Manchester. There is a good opening for anyone wishing to embark into the nursery business. The incoming tenant would have the opportunity of purchasing at the sale such stock as he might require at Auction prices.

Worcester.

HIGHLY IMPORTANT UNRESERVED SALE of about 20 Acres of NURSERY STOCK, by order of Messrs. Richard Smith & Co., in consequence of a portion of their land in the City boundary being required for Building purposes.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to sell by AUCTION, on the Premises, the Saint John's Nurseries, Worcester, on MONDAY, October 17, and four FOLLOWING DAYS, about 20 acres of unusually well-grown NURSERY STOCK.

Amongst the principal items may be mentioned 25,000 STANDARD and PYRAMID ORNAMENTAL TREES, in great variety, from 4 to 18 feet; 12,000 specimen CONIFERS and EVERGREENS, from 12 to 12 feet; 2500 golden Yews, grand plants; 1600 Standard and Pyramid gold, silver, and green HOLLIES; a magnificent lot of CLEMATIS, in splendid variety, including 2000 *Clematis Jackmannii*, and others.

Detailed particulars will appear in future announcements.

Woking, Surrey.

A short distance from the Woking Railway Station.
UNUSUALLY IMPORTANT FIVE DAYS' UNRESERVED SALE

Of exceptionally well-grown and rooted NURSERY STOCK, in the finest possible condition for transplanting, and embracing the most important lot of Stock offered by Auction for many years, the quality of which is unsurpassed in the Trade, by order of the Trustees of the late Mr. George Jackman, the land being required for Building.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, the Woking Nurseries, Woking, Surrey, on MONDAY, October 10, and four following days, commencing at 12 o'clock precisely each day, several acres of exceptionally well-grown

NURSERY STOCK.

The whole of which is in the best possible condition for removal; comprising—
10,000 CONIFERS, 3 to 4 feet, amongst them numerous fine specimen Conifers.

Thousands of smaller EVERGREENS and CONIFERS, for Potting, &c. 1000 BOX, in variety.
10,000 Green and Variegated HOLLIES, 1 to 5 feet.

3000 LAURELS, of sorts, 1 to 5 feet. PORTUGAL LAURELS.
5000 Named RHODODENDRONS, Hybrids, &c., 1 to 3 ft.

A fine collection of ORNAMENTAL DECIDUOUS TREES, comprising Maples, Thorns, Almonds, Peaches, Planes, Poplars, &c., 7 to 10 feet.

1000 LIMES, 5 to 10 feet.
FOREST TREES in great quantities; amongst them several thousands of Sycamores, Oaks, Beech, Spruce, Limes, Poplars, &c.

5000 Common ASH, 2 to 5 feet. 40,000 QUICK, 1 to 2½ feet.
20,000 ST. JOHN'S WORT.

A splendid collection of ORNAMENTAL TREES, for Park and Avenue Planting, 10 to 20 feet, including Horse Chestnuts, Purple Beech, Scarlet Oaks, Lime, Planes, Sycamores, Maples, Elms, Poplars in variety, &c.

25,000 FRUIT TREES, comprising Standard, Feathered, and Single Cordons, Apples, Pears, Plums, and Damsons.
3000 Standard and Feathered Flowering Almonds, Peaches, Prunes, Pissardi, and other Stock.

The Auctioneers have personally inspected the Stock, and desire to call the attention of intending purchasers to this important Sale. It is undoubtedly the most important Auction of Nursery Stock held for many years, and an inspection will well repay a visit by those contemplating planting during the season.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises, or of the Auctioneers, Land Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Sunningdale.

A few minutes' walk from Sunningdale Station.

THREE DAYS' CLEARANCE SALE WITHOUT RESERVE

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. C. Noble, to sell by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks., on WEDNESDAY, October 19, and TWO FOLLOWING DAYS, at 12 o'clock precisely, a choice Assortment of beautifully-grown NURSERY STOCK, including Standard and Bush Rhododendrons of the best named kinds, Hybrid ponticum and other Rhododendrons, 2000 *Azalea pontica*, 4000 *Aucubas*, 2500 *Portugal Laurels*, 15,000 Conifers in various sizes, 8500 Limes and Planes, 6 to 10 feet, fine and straight trees, particularly suitable for Avenue, Park, or Street Planting; many thousands of Ornamental Trees for immediate effect, several thousands of Standard and Pyramid Fruit Trees, 200 Webb's Cob Nuts, Flowering Shrubs, Climbers, Plants, and other STOCK.

Purchasers can arrange with Mr. NOBLE to lift and forward any Lots to all parts of the Kingdom at cost of labour incurred and material used.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Chiffe, near Rochester.

IMPORTANT TO FRUIT GROWERS, MARKET GARDENERS, AND OTHERS.

GREAT ANNUAL SALE, by order of Mr. W. Horne, **MESSRS. PROTHEROE AND MORRIS** will sell by AUCTION, on the Premises, Chiffe, near Rochester, on WEDNESDAY, October 26,

100,000 FRUIT TREES, comprising 35,000 one, two, and three-year old Apples, Pears, Plums, and Cherries; 1000 Lady Sudeley and Bismarck Apples; 5000 of the new dessert Apple, Beauty of Bath; 50,000 Baldwin Black Currants, 4000 Red Currants, 10,000 Bob and Lad Gooseberries, 5000 John Ruskin Strawberries, also Noble and other varieties, in large and small pots; 45,000 Paxton, Noble, and John Ruskin Strawberries, from open ground; 20,000 three-year Connover's Colossal Asparagus roots, from French seed; 50,000 early Rainham Cabbage plants, &c.

May be viewed. Catalogues may be obtained on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY, at 12 o'clock, large consignments of first-class

HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland. 12 tons are sold every week.

Lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

CLAPHAM, S.W.—EXPIRATION OF LEASE.

GREAT CLEARANCE SALE OF CHOICE ORCHIDS,

BY ORDER OF

MESSRS. CHARLESWORTH, SHUTTLEWORTH, & CO.,

TO BE HELD ON THE PREMISES, 213, PARK ROAD, CLAPHAM, S.W., on
TUESDAY NEXT, SEPTEMBER 20, and Two Following Days.

5000 ODONTOGLOSSUM CRISPUM, Established.

2000

"

Semi-established.

5000

"

Various Species.

Choice CYPRIPEDIUMS, rare MASDEVALLIAS and PLEUROTHALLIS, CATTLEYAS, LÆLIAS, ONCIDIUMS, and others too numerous to mention in an advertisement. The whole Stock is in fine healthy condition, and will be SOLD by

Messrs. PROTHEROE & MORRIS. On View Three Days prior to Sale, and Catalogues had.

Choice Bulbs from Holland.

MR. J. C. STEVENS will SELL by AUCTION, every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice BULBS arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Thursday Next.

ESTABLISHED ORCHIDS, LILYUMS, BULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 22, at half-past 12 o'clock precisely, a good collection of ESTABLISHED ORCHIDS, a few in Flower and Bud; a collection of STOVE and GREENHOUSE PLANTS, 5000 ANEMONE FULGENS, 20,000 LILIUM HARRISII and L. CANDIDUM, 15,000 Early White ROMAN HYACINTHS, Paper-white and Double ROMAN NARCISSUS, FREESIAS, PANCRACTIUM, choice NARCISSUS and DAFFODILS, and many other BULBS and ROOTS.

On view morning of Sale, and Catalogues had.

Thursday Next.

Grand Importation of 1600 PHALENOPSIS GRANDIFLORA AUREA, COELOGYNE COMMINGII, VANDA LOWII, AERIDES SPECIES, just to hand.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 22.

On view morning of Sale, and Catalogues had.

Acton Vale Nursery, Acton, W. Expiration of Lease. WITHOUT RESERVE.

MR. T. A. HARDY is instructed by Mr. Bennett, to SELL by AUCTION, as above, on WEDNESDAY, Sept. 21, at 1 for 2 o'clock, 4000 GREENHOUSE PLANTS, FERNS, CHRYSANTHEMUMS (best sorts), Greenhouse Lights and Frames, and the whole of the Stock—to clear the ground. View day prior.

Catalogues of the Auctioneer, 24, The Parade, Acton, W.

Wednesday, Sept. 21, at 12 o'clock. Without reserve. To FLORISTS and PRIVATE BUYERS.

THE NURSERY, Bath Terrace, Richmond Green, Surrey. MR. JOHN BOTT is instructed to SELL by AUCTION, without Reserve, as above, on WEDNESDAY, September 21, at 12 o'clock sharp, the entire Stock of INDIA-RUBBER PLANTS, Splendid FERNS, TOMATO PLANTS, STANDARD ROSE TREES, &c., together with the Forcing-houses, Lights, &c.

On View Monday and Tuesday. Catalogues on the Premises, or of the Auctioneers, Herne Hill Station, S.E.

To Market Growers and Fruit Planters.

CLEARANCE SALE OF—

15,000 FRUIT TREES, APPLES, &c.
50,000 THORNS, QUICKS, and FOREST TREES,
which will be SOLD by AUCTION by

MESSRS. HATCH AND WATERMAN, at The Nurseries, Willesborough, Kent, 1 mile from Ashford Station, S.E. and L.C.D. Railways, on WEDNESDAY, September 21, at 10 o'clock sharp.

Catalogues may be had of Mr. JAMES WAGHORN, Trustee, West Boro' Chambers, Maidstone, or of the Auctioneers, Ashford, Kent.

WANTED, TO RENT, from 300 to 500 feet run of Modern-Built GLASSHOUSES.—Reply to J. J. C., 12, Durant's Villas, High Street, Ponder's End.

WANTED, a Small NURSERY, chiefly Glass, near Provincial Town; without stock preferred.—Full particulars to J. JACKSON, Stetchworth, Newmarket.

FOR SALE.—A good well-situated NURSERY FLORIST and JOBBING BUSINESS, doing an increasing Trade.—Full particulars of D., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, the LEASE of large GARDEN, with 3 Greenhouses, each 50 feet long by 12 feet wide, all well Heated, within 10 minutes of Railway, and about 15 miles from London Market. Dwelling-house adjoining held on agreement.

For particulars, apply to W. K. T., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Gentleman's Gardeners and Florists.

TO BE SOLD, a sacrifice, the LEASE, 15,000 feet of good GLASS, all well-heated with Hot-water; Stock, Horse Van, Harness, &c., all in going order; about one acre, good Dwelling-house, Stabling, and every convenience. Rent only £ 5.

Apply, J. S., 2, Elm Villas, Town Road, Low Edmonton.

FOR SALE, a compact, attractive, old-established NURSERY, SEEDSMEN, and FLORISTS' BUSINESS (including Retail Shop); several Greenhouses, comprising 4000 square feet of glass, well-heated, &c. Magnificent opportunity. Only Nursery in seaside town of 40,000 inhabitants. Within easy run of London.—For full particulars apply to L. M. N., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Nurserymen and Florists commencing Business. HAMPTON-ON-THAMES, on the Marling

Park Estate, free from London fogs, a deep rich Loam, the favourite neighbourhood for Growers. FREEHOLD LAND for SALE, on easy system of Purchase, or to be LET on Lease. For full particulars apply to Mr. FRED. G. HUGHES, Surveyor, The Estate Office as above.

To Nurserymen, Florists, and others.

TO BE SOLD, in Acre or larger Plots, excellent LANDS at Enfield Highway, a few yards from the Brimsdown and Ponder's End Stations, and adjacent to the line of the Great Eastern Railway. Adjoining land is extensively cultivated by florists of repute; a considerable portion of the purchase money can remain on mortgage at low interest. Particulars of Mr. ALFRED RICHARDS, Estate Agent, Lower Tottenham.

FELTHAM.—Valuable, Freehold ESTATE, comprising nearly 20 acres of Market Garden Land, with substantial Residence, Homestead, and Farm Buildings, for SALE by Private Treaty.

For particulars apply to Messrs. S. WALKER AND RUNTZ, 22, Moorgate Street, E.C.

To Market Gardeners, Fruit, Tomato, and Flower GROWERS.

MR. MALCOLM SEARLE is instructed by Mr. R. Clarke, of Pope's Grove, Twickenham, S.W., after an occupation of forty years, TO LET or SELL, the far-famed 3 acres of LAND, well-stocked with Choice Standard and Wall Fruit Trees and Bushes, with Residence, Cottages, Outbuildings, Forcing-houses, and Pits.

A valuable Plot of BUILDING LAND, adjoining, is also for SALE. Worth attention.

Apply, personally, at 9, Martin's Lane, Cannon Street, City, E.C.

ABOUT 400 yards of 4, 3, and 2-inch HOT-WATER PIPING, chiefly 4-inch, three BOILERS (one large, two small), a large quantity of all sorts of CONNECTIONS, VALVES, &c. Just taking down in suitable length. Would sell any quantity, but would prefer an offer for the whole. If applying by letter, send stamp, to—WM. HART, 26, Uxbridge Road, Shepherd's Bush, W., close to Uxbridge Road Station.

MUST BE SOLD, a well-built 2-span VINERY, 64 feet long, 15 feet wide. Piping and Boiler complete.—Apply, Fairlawn House, Bollo Lane, Chiswick.

CARNATION Mrs. Reynolds Hole, the popular terra cotta, strong rooted layers, 25s. per 100; £10 10s. per 1000. Cash.

CRANE AND CLARKE, Hillside Nursery, March, Cambs.

PRIZE PANSY PLANTS, for Early Spring and Summer Blooming, 1s. per doz.; 50, 3s. 6d.; 100, 6s. Show, Fancy, or Giant Yellow Variety. Carriage paid. Cash with Order.—R. H. BATH, Osborne Farm, Wisbech.

NEW MAIDENHAIR.

ADIANTUM CAPILLUS-VENERIS IMBRICATUM (DICKSONS)

This splendid NEW FERN is a decided acquisition, being quite equal in appearance to A. Farleyense, with the hardness of A. Capillus-veneris.

Full particulars, with price, on application.

DICKSONS (LIMITED), THE NURSERIES, CHESTER.

FOR ORCHIDS and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

ODONTOGLOSSUM GRANDE.—Splendid Plants in Flower; 3s. 6d. and 5s. each.

J. W. WILSON, Nurseryman, South Cave, East Yorks.

FOR SUCCESS ON EXHIBITION TABLES, send to Mr. Robt. Sydenham, Roseleigh, Birmingham, for really good Bulbs and Seeds. No nurserymen can serve you better or cheaper. Full List on application.

ROBERT SYDENHAM, Roseleigh, Birmingham.

HARTLAND'S ORIGINAL PUBLICATIONS.

Now ready, and post free. DAFFODILS 1—"Original Little Book" for the million. BULBS 1—"Little Book." A Cheap Edition. The most unique and select for Amateurs.

FLORAL ALBUM! of Conference Daffodils, illustrated by GERTRUDE HARTLAND. Copyright edition. Engraved by WELCH, of London, the price of which is 2s. 6d., but is presented gratis with Bulb orders value 40s.

HARTLAND'S DOUBLE WHITE FRINGED POPPY, "Snowdrift," for autumn sowing, 6d. and 1s. per packet. DAFFODIL and LENTEN ROSE SEED, per packet, 1s. Now is the time to sow.

WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

In Chancery.

FRUIT TREES.—80,000 very choicest kinds. Apples, Pears, Cherries, Peaches, Filberts, and Plums; 20,000 noble, tall, standard Victoria Plums and Damsons, 4 and 5-yr. old; and 2000 Rhododendrons and pretty Shrubs, Roses, and Hardy Flowers. In small or large quantities. Purchasers' selection. See CATALOGUES.—LAND STEWARD, Hon. GERTRUDE JONES, Churchfield, Cradley, near Malvern.

ORCHIDS.

BRAZILIAN ORCHIDS supplied in large or small quantities.

CATALOGUE and particulars free on application.

A. H. GRIMSDITCH, Importer, 5, Clayton Square, Liverpool.

Depôt: 17, Dryden Road, Edge Lane, Liverpool.

SOLE AGENT FOR CARLOS TRAVASSOS, RIO DE JANEIRO.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

HAVE AN

IMMENSE STOCK of ORCHIDS,

All in the finest health and condition,

And they are constantly receiving importations from various parts of the world.

The Company earnestly request the inspection of their Stock by intending Purchasers.

New, Descriptive, and Priced CATALOGUES post-free on application to the Company.

THE VINEYARD AND NURSERIES,
GARSTON, NEAR LIVERPOOL.

FLOWERS AT CHRISTMAS.

Procure fine Bulbs from **JOHN JEFFERIES & SON.**

WHITE ROMAN HYACINTHS, per doz., 1s. 4d.; per 100, 10s.
CREAM-WHITE NARCISS, per 100, 5s.
DOUBLE ROMAN NARCISS, per 100, 5s.
TULIPS, CRIMSON VAN THOL, per 100, 2s. 6d.

JOHN JEFFERIES & SON,
BULB MERCHANTS, CIRENCESTER.

THE KENT STRAWBERRIES

Are the best, and all the finest sorts are well grown by
GEORGE BUNYARD AND CO., Maidstone,
Who will be pleased to send a copy of New Descriptive
Strawberry LIST post-free.

COMPETITOR STRAWBERRY (New)
Proves to be the hardest of any, and is a prodigious
cropper, early and handsome. Extra transplanted runners
now ready. Per 100, 25s.; per dozen, 4s. post-free.

GEORGE BUNYARD AND CO., Old Nurseries, Maidstone.

L'HORTICULTURE INTERNATIONALE

(LINDEN), Leopold Park, Brussels,

Beg to announce to the Nobility, Gentry, Tradesmen, and Gardeners of the United Kingdom, that **Mr. P. WEATHERS** has been appointed their AGENT and REPRESENTATIVE for the British Isles.

Ladies and Gentlemen requiring Plants, or any Information as to Prices, &c., may communicate with **Mr. WEATHERS**, at **POPLAR VILLA, SOUTHGATE, LONDON, N.**, who will promptly attend to the same.

Please Note Address.

NOW READY.



**HARPE'S
BULB
CATALOGUE.**

Post Free on application to

CHARLES SHARPE & CO.,

SEED FARMERS AND MERCHANTS,
SLEAFORD.

EXTENSIVE COLLECTIONS
OF
**HYACINTHS, TULIPS,
NARCISSI, LILLIES,
SNOWDROPS,
CROCUSES,
SCILLAS,**
&c.

BULBS

Best
Qualities
Only.

ALL AT
CHEAPEST RATES.

Delivered Free by Rail
or Parcel Post.

Descriptive Catalogue, No. 414
POST FREE ON APPLICATION.

DICKSONS BULB GROWERS CHESTER
(Limited)



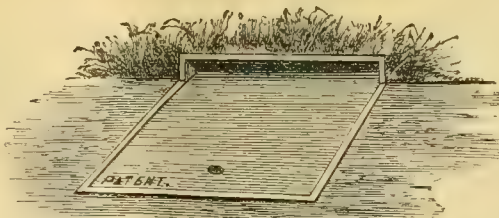
MARLY LILAC

(Well Budded).
The best of all for Forcing. Thousands
for Disposal.

CROUX ET FILS,

NURSERYMEN,
LE VAL, D'AULNAY, PRÈS SCEAUX
(SEINE), FRANCE.

Great Specialty in Trained Fruit
Trees for Immediate Planting.
CATALOGUES free on application.



FIXED.

Full Particulars on application. Testimonials:—

From **Mr. J. WILLARD**, Head Gardener to the **BARONESS BURDETT-COUTTS**, Holly Lodge Gardens, Highgate, N., July 12, 1892.—“Dear Sirs, Having given your Improved Garden Gully a fair trial, I may say that it proves in use all that you claim for it, and in my opinion has, for the sides of walks and drives, many advantages over the ordinary grating. Perhaps the best proof I can give you of this is that, as opportunity offers, I intend to use them instead of gratings. Faithfully yours, **J. WILLARD.**”—To Messrs. **VINCE & VINE.**

From **W. WALTON**, Esq., Secretary to the **LONDON CEMETERY COMPANY**, The London Cemetery Company, 29, New Bridge Street, Blackfriars, E.C., July 25, 1892.—“To Messrs. **Vince & Vine**, Highgate. I am very happy to testify that your Patent Garden Gully-Frames in lieu of the old fashioned gratings answer admirably. They were by my authority fixed in a new pathway made in Highgate Cemetery, and in the recent thunder showers they were severely tested and were

THE IMPROVED GARDEN GULLY (VINCE'S PATENT).

This useful invention is a great improvement on the ordinary Garden Grating, and is especially suitable for hilly walks and drives. As they never get stopped by rubbish or sand they effectually prevent the washing away of the gravel in heavy storms, and they save half the labour in cleaning out the cesspools. The prices are:—

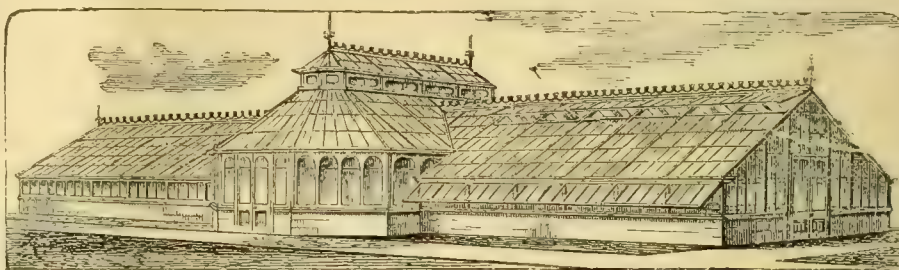
6-in., 1s. 6d.; 8-in., 2s.; 10-in., 3s.; 12-in., 6s. 6d.; 15-in., 8s.
(The larger sizes are very strong for carriage drives.)

most effectual in preventing the scouring of the gravel. At the inspection my Directors were much pleased with them, and gave instructions that they were to be used when required at Nunhead Cemetery.—I am, yours truly, **W. WALTON**, Secretary.”

From Messrs. **CUTBUSH AND SON**, Highgate and Barnet Nurseries.—“Highgate Nurseries, London, July 27, 1892.—Dear Sirs,—Referring to the Improved Garden Gully you fixed for us some months ago, we are glad to say it answers admirably. As you are aware, our Nurseries here are very hilly, and during the recent storms all the ordinary gullies were blocked, whereas yours was in good working order. We shall not hesitate to recommend the same to anyone requiring the gullies for sides of paths and carriage-drives, and we feel certain, when it is known, there will be a great demand.—We are, yours faithfully, **WM. CUTBUSH AND SON.**—Messrs. **VINCE & VINE.**”

VINCE & VINE, 58, Chester Road, Upper Holloway, London, N.

Five 1st Prize Medals recently
awarded in open competition.



Five 1st Prize Medals recently
awarded in open competition.

R. HALLIDAY & CO.,

**HOTHOUSE BUILDERS and HOT-WATER ENGINEERS,
ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.**

Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that **THE VERY BEST.**

Conservatories and Winter Gardens designed architecturally correct without the assistance of any one out of our firm, from the smallest to the largest. Hot-water Heating Apparatus, with really reliable Boilers, erected, and success guaranteed in all cases. Melon Frames, Sashes, Hotbed Boxes, &c., always in stock.

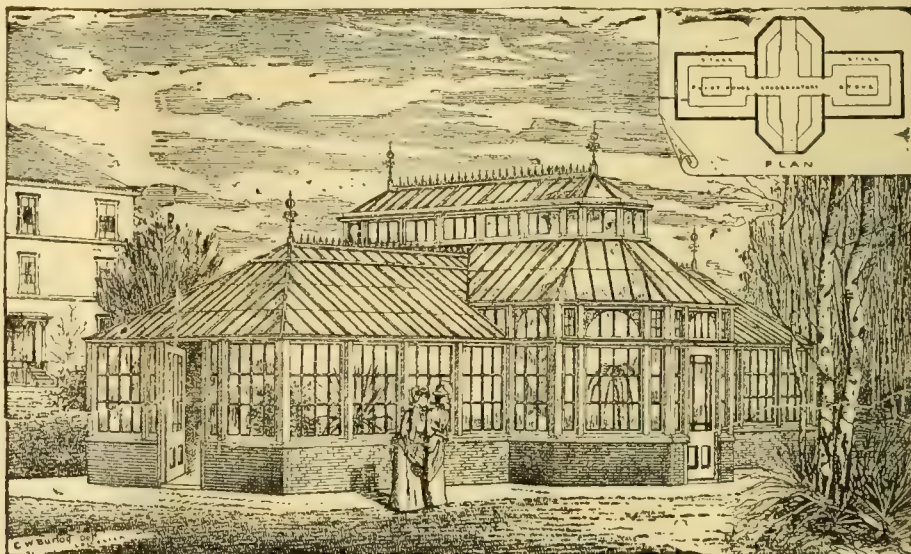
Plans, Estimates and Catalogues free. Customers waited on in any part of the Kingdom.

Our Maxim is and always has been—

MODERATE CHARGES.

FIRST-CLASS WORK.

THE BEST MATERIALS.



MESSINGER & CO.'S New CATALOGUE of Greenhouses and Heating Apparatus,

Just issued, will be found the most complete, practical, and reliable guide to all about to build, alter, or heat Greenhouses. Illustrations of every description of Glasshouse, from the largest range of Winter Gardens to the simplest forms of Portable Greenhouses, Plant Protectors, and Garden Frames; also of all the best kind of Boilers, Hot-water Pipes, and all appliances for heating. This Catalogue, possessing hundreds of illustrations of all the latest improvements in greenhouse building and heating, is on a scale never before attempted. It should be in the hands of every one interested in gardening, as it contains many practical hints on the subjects of which it treats, the result of many years' experience. Price, 2s. post-free.

A large number of the illustrations are taken from greenhouses erected by us in various parts of the country; an inspection of this Catalogue shows, therefore, buildings the efficiency of which has been well tested by actual use. The advantages possessed by us enable us to carry out work with the utmost promptness, and in the very best style, at prices which defy competition. Surveys made, and gentlemen waited on in any part of the country. Plans and Estimates free on application.

MESSINGER & COMPANY, LOUGHBOROUGH.

London Office:—163, Palmerston Buildings, Old Broad Street, E.C.

Kindly Note.

CACTUS AND DECORATIVE DAHLIAS.
GEORGE PHIPPEN would be pleased to give information to those having New Varieties or Seedlings of the above. If a few specimen flowers (packed in damp Moss), were sent him he would gladly compare them with his collection of over 120 varieties, and report to the sender free of any charge whatever.

The Nurseries, Reading, Berks.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well-grown Stock of ERICAS (Hyemalis, and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, of sorts; ADIANTUM CUNEATUM, and other Ferns; PALMS, in variety; GARDENIAS, STEPHANOTIS, FICUS ELASTICA, CROTONS, GAVILLEAS, TEA ROSES (in pots), BORONIAS MEGASTIGMA, and HETEROPHYLLA; VINES in pots, &c. An Inspection is invited.

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N.B.—No connection with any other firm of the same name.

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Ditto ditto	...	16s. 0d. per 100.
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Double Roman	...	3d. each, 1s. 6d. per doz.
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DOUBLE, scarlet and yellow	...	9d. per doz., 5s. per 100.

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HUGH LOW & CO.

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THOUSANDS OF IMPORTED ODONTOGLOSSUM ALEXANDRÆ AND ITS VARIETIES.

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MESSRS. FRED HORSMAN & CO., Colchester

have much pleasure in announcing the safe arrival of the above Superb Collection. *They are of the Best Type*, and will not fail to yield like those hitherto sent, superb spotted forms, regular in outline, and with grand markings. All the Consignment will be offered by—

MESSRS. PROTHEROE & MORRIS, 67, Cheapside, on FRIDAY, Sept. 23.

N.B.—These Plants have the Cool Season before them, and cannot fail to flower well next Spring.

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UNFLOWERED, SUPERBLY-GROWN CATTLEYAS,

With Splendid Sheaths, for Winter and Spring Blooming.

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 Send for Illustrated Catalogue, just issued.

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A GRAND INTERNATIONAL POTATO EXHIBITION

Will be held by the Executive of the International Horticultural Exhibition, in connection with the

SHOW of HARDY FRUIT, at Earl's Court, London, S.W., on OCTOBER 5, 6, and 7, 1892,

When PRIZES to the amount of £100 will be offered, also a GOLD MEDAL for the most meritorious Collection of Potatoes, and a SILVER MEDAL for the best Dish of Potatoes in the Exhibition.

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ODONTOGLOSSUM CRISPUM ALEXANDRÆ.

BEST VARIETY.

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ODONTOGLOSSUM LUTEO-PURPUREUM,
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CATTLEYA TRIANÆ, best variety, £8 per case.

Each case contains from fifty to sixty good, strong pieces, and measures about 20 inches by 34 inches.

The plants are packed with the greatest care and best method, but under no circumstances will G. K. hold himself responsible for the state of plants on their arrival in Europe. *Conditions*:—All Consignments are shipped entirely at Buyer's risk and expense from port of shipment. Plants ordered must be paid for on receipt of bill of lading to Messrs. ROESING BROTHERS AND CO., 10, Basinghall Street, London, E.C., who will then give orders for forwarding the consignment to the Purchaser.

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BEST BEDDING HYACINTHS, to name, Blue, 2s. 3d. per doz.; 16s. per 100. Red, 2s. 6d. per doz.; 18s. per 100. White, 2s. 9d. per doz.; 20s. per 100. Mixed, 2s. 6d. per doz.; 18s. per 100.

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LILUM CANDIDUM, 10 inches round, 2s. per doz.; 12s. per 100.

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In Splendid Condition for Forcing, &c.

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SNOWDROPS.

EARLY ORDERS SOLICITED.

For particulars see Illustrated Catalogue, forwarded Gratis and Post-free to all applicants.

B. S. WILLIAMS & SON

Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.



THE Gardeners' Chronicle.

SATURDAY, SEPTEMBER 17, 1892.

BODNANT.

BODNANT is situated on the east side of the Conway Valley, within the influence of the sea breeze, but protected in the lower parts by the high hills. From the lawn a fine prospect, embracing about 60 miles of mountain scenery, is to be seen. The soil is not rich, being shallow, and resting upon the Wenlock flags and shales of the upper silurian formation.

The garden was originally designed and laid out by the late Mr. Milner, but in recent years the taste of the proprietor, H. D. Pochin, Esq., aided by the skill of his gardener, Mr. Saunderson, has been mainly directed to the beautifying of the glen. The higher parts are planted with hardwooded deciduous trees, which afford sufficient shelter to the specimen Conifers, the latter making very rapid growth, and are of a beautiful colour. The effect of the Coniferæ is much improved by the judicious mixture of bright deciduous trees and shrubs, such as the rich purple Prunus pissardii and purple Hazel, clumps of Cornus sanguinea, scarlet Dogwood, and groups of flowering shrubs, such as Berberis, Rubus, Cotoneaster, Hypericum, &c., giving brightness without suggesting any artificial character to the place. Considerable labour has been spent in this part, forming the banks of the trout stream with slabs of the native rock, for what is now a pleasant stream is in winter a rushing torrent, carrying tons of earth along with it. The Cyclamen, Spireas, Yucca filamentosa, Primulas, Daffodils, &c., which border the stream, are protected from the winter floods by the turf in which they grow. There is scarcely a bare spot in this dell, the ground underneath the trees being clothed with St. John's Wort, Mahonia aquifolia, and Ivy. Where the rock appears on the surface, it has been planted with Sedums, Saxifrages, and hardy Heaths. Cotoneaster congesta makes a capital covering for stones.

Rustic bridges, some of wood, others simply large rough slabs of stone, cross the main stream and its tributaries, and shelter is afforded where some of the paths cross each other by little sheds with thatched roofs, over which Honeysuckle grows.

A border of choice herbaceous plants runs along a path between the dell and an adjoining field. This border is effectively edged with Heaths; the best for this purpose seems to be Erica vagans, being neat and compact. Among many choice groups, Enothera speciosa attracts attention by its large white flowers and peculiar scent, and Tropæolum tuberosum is a beautiful object on the railings. This path leads to a mausoleum, built on a crag overlooking the dell; the interior is a superb work of art, being formed of choice marbles, carved and polished, and the interior is dimly lighted by some rich stained glass windows.

VEITCH'S BULBS OF SUPERIOR QUALITY.



VEITCH'S BULBS

FOR
EARLY FORCING.

VEITCH'S BULBS

FOR
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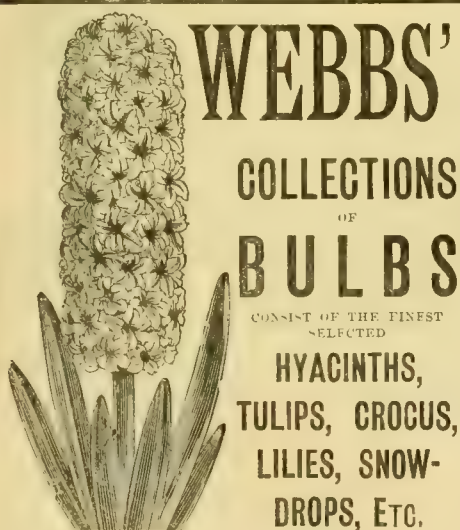
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FOR
OUTDOOR PLANTING.
AT LOWEST PRICES.

For details see CATALOGUE, forwarded Gratis and Post-free on application.

JAMES VEITCH & SONS

ROYAL EXOTIC NURSERY,
CHELSEA, LONDON, S.W.



WEBBS' COLLECTIONS OF BULBS

CONSIST OF THE FINEST SELECTED

HYACINTHS,
TULIPS, CROCUS,
LILIES, SNOW-
DROPS, ETC.

Prices, 5s., 7s. 6d., 10s. 6d., 15s., 21s., 42s., 63s., and 105s. each; Carriage Free.

FIVE PER CENT. DISCOUNT FOR CASH.

For full particulars of Contents of these Boxes, and Lists of the Best Bulbs of the Season, see

WEBBS' BULB CATALOGUE,
Beautifully Illustrated: Gratis and Post-free

Seed-men by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales.

WORDSLEY, STOURBRIDGE.

The grounds immediately surrounding the residence are planted with a very large variety of choice shrubs, all in groups. *Garrya elliptica*, both male and female plants, the former appearing at its best in spring, when its long pendulous catkins are seen, and the latter looking its best in the autumn, with its Grape-like bunches of purple berries. Clumps of *Pernettyas*, *Gaultherias* Shallon, Ghent Azaleas, *Andromedas*, *Phillyreas*, *Ericas*, and beds of *Rosa rugosa* and *Rosa pyrenaica*, both with brilliant scarlet hips, form a fine feature on the lawn. Specimens of rich yellow *Cupressus Lawsoniana lutea*, about 10 feet high, harmonise with the flower-beds. Two ornamental pieces of water filled with plants fed by a spring from the mountain-side, and it is said the water never falls below 50° F., even in winter, so that *Aponogeton distachyon* flowers about nine months out of the year.

A specimen of *Eucryphia pinnatifolia*, 7 feet high, is now full of white flowers, also *Hypericum Moserianum*. The walls of the hall are covered with *Pyracantha Lelandi*, which is most effective, and a wall along the carriage-drive facing north-west, is decked with purple-leaved Japanese Maple alternating with Golden Queen

a top dressing of artificial manure is put on. The ingredients are purchased separately, and mixed in the proportions recommended by Ville, which have been already given in these columns. To the liberal and skilful treatment thus afforded, much of the success is to be attributed. Peaches, Nectarines, and Plums, are also largely grown in lean-to houses, and bear very good crops.

The conservatory is a bright house with large specimens of *Acacia Riceana*, and *Tacsonia Van Volxemii*, *Lapageria alba*, and *L. rosea*, which growing together are most effective.

One thing which strikes the visitor, of whom there are many during the summer months, is the neatness and order which prevailed all over the place. Nature has done much to make the place attractive, but art has probably done more. F. V. D.

NEW OR NOTEWORTHY PLANTS.

BULBOPHYLLUM O'BRIENIANUM, Rolfe,
n. sp.*

COMPARATIVELY few *Bulbophyllums* have flowers large enough and handsome enough to enable them to become popular garden plants, though a few

with dark reddish-purple on a pale ground. It is a member of the *Sarcopodium* group, and will stand next to *B. psittacoglossum*, Rehb. f., which, however, has smaller, striped flowers, broader leaves, and other differences. It is a native of some part of the Himalayas, and was received with *Pholidota repens*, Rolfe, certain *Cœlogynes*, and other Orchids, by Mr. Jas. O'Brien, of Harrow-on-the-Hill, Middlesex. At present, a single plant only is known, and the exact locality remains to be discovered, so that it may remain scarce for the present. It is certainly handsome. R. A. Rolfe.

CATTLEYA BATALINI, Sander and Kränzlin.*

This addition to our stock of *Cattleyas* is not only a very beautiful plant, but a very striking one, on account of its affinities. At first sight its form recalls to my mind a small flowering *C. Schilleriana*, the colour that of *C. superba*, the enormous column of *C. bicolor*. There are besides some affinities to *C. granulosa* and *C. guttata*, but they are not so much developed as to lessen the resemblance it has to the first-named species, inasmuch as there is nothing to remind one of the leopard-like colour of those last-named species.

The flowers are fully 2½ inches across, the sepals pale purplish-rose coloured, the petals broader and somewhat darker, the short side-lobes of the lip whitish, with a very faint purplish hue; the middle



FIG. 53. —APPLE, LADY SUDELEY. (SEE P. 333.)

Holly, also trained against the wall. The rich colouring of the former in this position is remarkable, and it would, no doubt, be a useful plant for low terrace walls behind flower-beds.

Standard-trained Apples are planted by the outbuildings, the branches being trained on the roofs; the stems, in some cases, are in front of windows, and vary from 5 to 10 feet in height. From these roof-trees fine samples are obtained, Peasgood's Nonsuch weighing 20 oz., were gathered last year. The system has proved so successful, that it is being extended.

GLASS HOUSES.

The vineries are a particular feature. They have been planted for sixteen years with Black Hamburgh, Alicante, Lady Downes, and Muscat of Alexandria, all bearing good crops, but especially the last-named were so; most of the bunches are 18 inches long, and well shouldered. The borders are all inside, 2 feet deep, with a foot of rubble underneath. Every time the borders are watered

species find a home in most collections of any extent. The present species is an exceptionally fine one, and wherever *Bulbophyllums* are grown it should find a place. It is quite a small plant, as the accompanying description will show, yet the single flower is nearly 2 inches in diameter, and densely covered

* *Bulbophyllum O'Brienianum*, n. sp. — Rhizome stout. Pseudobulbs approximate, ovoid, or ovoid-oblong, 1–1½ inch long, 1-leaved, the old ones clothed with a network of persistent fibres. Leaf shortly petiolate, oblong, subacute, 2½ inches long, by 9 lines broad. Flowers solitary from base of pseudobulb, large, its pedicel 1½ inch long, with two or three short broad sheaths at base. Dorsal sepal ovate, obtuse, concave, nearly 1 in. long, by ½ inch broad; the lateral pair similar, but a little broader, oblique, and obtusely carinate. Petals ovate, obtuse, 7 lines long, by over 4 lines broad. Lip strongly recurved, very fleshy, linear-oblong, acute, with a pair of acute keels extending from base to near apex; margin recurved, ½ inch long. Column 2½ lines long, by as broad, angles acute, teeth very small, foot ½ inch long. Sepals and petals honey-coloured, inclining to pale yellow towards base, covered with numerous dark reddish-purple spots; lip very dark maroon-purple, except the under-side which is straw-coloured; column light yellow, foot densely spotted, and towards apex suffused with purple-brown; anther-case straw-colour, with a large fleshy apiculus. Native of some part of the Himalayas.

lobe is broader and cuneate, but not in such a remarkable way as in *C. Schilleriana*. In the disc there are two lines of small granular tubercles, but they are very smooth on the surface, and not so much developed as in some other species of this group. The colour of the mid-lobe is deep purplish, with a whitish border. The column is, for the dimensions of the flower, of an enormous size, it being nearly two-thirds of the size of the entire lip, and fills out the hollow made by the side-lobes.

* *Cattleya Batalini*, Sander and Kränzlin. — Affinis *C. Schillerianae*, Rehb. Sepalo dorsali late lineari acuto apiculato, lateralibus falcatis, lineari-lanceolatis acutis apiculatis; petalis cuneato-oblongis obtusatis; labelli lobis lateralibus semiovatis antice rotundatis vix dimidium totius labelli sequantibus, lobo intermedio cuneato dilatato antice alte sinuato margine crispulo, disco lineis 2 elevatis additisque minoribus utrinque instructo; gynostemio pro floribus magnitudine maximo curvato lobis labelli lateralibus tertia parte longiore infra profunde excavato, fovea stigmatica maxima. Pseudobulbi caulescentes ad 15 pollices alti vix ½ pollicem diametro. Folia e basi cuneata ovato-oblonga acuta ad 7 pollice longa, ad 2½ pollice lata. Floret media aestate. Flores pallide purpurei 2 ad 2½ pollices diametro, petala intensius colorata, labelli lobi laterales albidii roseo-suffusi, lobus intermedius violaceus albomarginatus.

Botanists who regard natural hybrids with enthusiasm may regard this plant as a hybrid between one or the other of the species named above. So far as one can judge from the results hitherto of cross-fertilisation, the result of fertilising *C. bicolor*, Lind., with the pollen of *C. Schilleriana*, Rehb., may, perhaps, produce a plant similar to ours, and surely a good new hybrid will be the result. But until I

honour of Professor Batalin, the Director of the Imperial Botanic Gardens at St. Petersburg. *Dr. Kränzlin.*

APPLES AT MAIDEN ERLEIGH.

IN taking some of the highest prizes for Apples at the Earl's Court Fruit Show last month, Mr.

the kingdom a better crop, or finer samples; indeed, the best counterpart to this crop that I have seen outside of a nursery was at Mr. J. Walker's fruit farm at Ham last year. The soil at Maiden Erleigh is far from being an ideal one for Apples. It is a stiff cold clay that needs an immense deal of hard work and of high cultivation to be put into it before it can be made friable



FIG 54.—APPLE, LANE'S PRINCE ALBERT. (SEE P. 334.)

have a real proof of its hybrid nature, I must regard *C. Batalini* as a new and distinct species, although intermediate between, and very near to *C. Schilleriana*, *bicolor*, *Aclandiae*, and others, all of which may have been derived from a common ancestor.

The plant was imported from Brazil by Messrs. Sander & Co., St. Albans, flowered in July of this year, and was exhibited at the meeting of the Royal Horticultural Society, July 12, in the Drill Hall, James Street, Westminster. It is named in

Turton, Mr. John Hargreave's gardener at Maiden Erleigh, near Reading, gave some evidence not only of the abundance of his crop, but admirable samples of these fruits he has at home. His success, too, at the great Apple display at the Guildhall last autumn afforded sufficient evidence that he could grow Apples well. A visit to the Maiden Erleigh gardens recently, afforded even more conclusive proof of that ability, for I very much doubt whether there is to be seen in any private kitchen garden in

and workable. The trees, with the exception of some standards in the orchard, are all on the Paradise stock, and it is evident that in strong soil this stock is capable of producing fine trees. Every tree in the two large kitchen gardens is planted in rows beside the paths. Those in the older garden have been planted some fifteen years; those in the newer garden from four to eight years. Some of the older trees show in a marked degree that the capacities of the Paradise as an enduring stock are

limited; some are already giving out, and appear to be spent. Some will very soon follow suit, whilst other varieties exhibit considerable strength and robustness, but are still less fruitful than formerly, and Mr. Turton inclines to the opinion that it is wise not to look for enduring trees on the Paradise, but to plant some young trees every two or three years, and grub out those that exhibit evidences of exhaustion, canker, or non-fruitfulness. That is, he thinks, a more satisfactory plan than peddling with attempts to renovate by grafting, or similar means, at renovating when trees are grown as his are in ungenial soil, and in kitchen gardens. The heaviest crops this year are undoubtedly found on the trees that have been the more recently planted, especially some four to eight years. All are somewhat free bushes, not too hard-pruned, and having ample room. That is far better practice, than is crowding the trees, compelling restrictive pruning, which again renders severe root-pruning needful. That excellent cultivator, Mr. Walker, gives his trees full play, prunes very lightly indeed, thins the branches only when needed, and thus secures splendid crops and fine samples. Of the kitchen sorts the finest early one, perhaps, is as usual, Lord Suffield, still the trees of this variety of the oldest planted seem to have done their best; on the other hand that splendid round, handsome variety, Frogmore Prolific, which in Mr. Turton's estimation is better than Stirling Castle, is not only a wonderful and most regular cropper, but the trees full of stout sturdy growth, look as if they would endure for many years. Warner's King, is finely fruiting; it is one of the best known of all the large-fruited section, the trees doing well—the same may be said of its types, D. T. Fish and Barker's Seedling, this latter being at Maiden Erleigh a favourite selection. Small's Admirable, like to a large firm Hawthornden, fruits abundantly, this sample was excellent. Alfriston is good too, but of two trees growing near each other, one is a very dwarfed restricted tree on the French Paradise; the other, on the English Paradise, is doubly large, and carries a fine crop; both, however, have large clean fruits. Saltmarsh's Queen is very fine and handsome, and is always a good bearer. This is one of the best average large Apples we have in cultivation. Schoolmaster has medium-sized fruit, very clean and handsome, that keeps well; the growth is stout and clean. Mère de Ménage has a loose thin habit of growth, but fruits freely; they carry good colour. It is not one of the best of keeping Apples, however, but its colour helps to sell it when marketed on a large scale. Ecklinville Seedling here, as so often on stiff soils, whilst having fine fruits, shows spot on them that derogates from their beauty; it fruits early and freely. Blenheim Pippin is represented here either by a diverse strain from that sometimes seen, or else the stock and soil serves to reduce the size of the fruit from what is ordinarily seen on old trees on the Crab stock. None the less the crop is a good one, the fruits very clean and handsome; the sample is a capital dessert size, and having regard to its table excellence, the variety is more useful for the dessert than it is in the kitchen. Grenadier is a favourite variety also, and strongly recommended for market, &c.; the fruits are large, flattish, and abundantly produced. Peasgood's Nonsuch has grand samples; finer and handsomer from bush trees outdoors are seldom seen. This is a somewhat loose-growing tree, but the beauty of the fruit brings some compensation; of course, apart from that recommendation it is regarded as one of the best varieties. Stirling Castle crops heavily, as elsewhere, but the tree is not enduring at Maiden Erleigh; the sample, however, is a fine clean one. Waltham Abbey Seedling ranks here as amongst the very best kitchen sorts. The trees simply need thinning; they crop heavily and regularly; the fruits are fine, and handsome, and keep well till March, cooking admirably. The old Dutch Codlin is fine, but soon falls. New Hawthornden has a grand crop; that, too, is a splendid variety; it fruits here so freely that little strong wood-growth is made. The sample is a fine clean one. Potts' Seedling fruits as freely as Stirling Castle, and does not make

strong growth. Cox's Pomona, and Cobbett's Fall Pippin, or Reinette Blanche, are both fine, having good crops. Galloway Pippin has a heavy crop of clean, handsome, medium-sized fruits, of good quality, that keeps well; it is not so well known as many others are, but looks a very useful variety. New Northern Greening is good; so is Annie Elizabeth, a shy bearer when young, but does well as older trees. Bramley's Seedling is very fine and free; so, too, is Bismarck, the finest-coloured variety, perhaps, that we have in large fruit. Niton House is a fine free bearer, almost as much so as Stirling Castle, but it is a late keeper. Rhymer is good; so, too, is Manx Codlin, the Apple of the year. In market gardens, Wellington and Golden Noble are cropping finely on standards; so also is the New Hawthornden. Baumann's Red Reinette, as elsewhere, colours finely. Stone's Pippin or Loddington, is found to be better on the Crab stock than on the Paradise.

Asked to name twelve selected kitchen Apples for general good qualities and for a long season, Mr. Turton gave Lord Suffield, Frogmore Prolific, Warner's King, Peasgood's Nonsuch, Saltmarsh's Queen, New Hawthornden, Waltham Abbey Seedling, Golden Noble, Beauty of Kent—very fine here, Lane's Prince Albert, Bramley's Seedling, and New Northern Greening, as a selection that will give fruits for use from the first of August to the end of May at least.

Turning now to dessert varieties, these are, perhaps, less numerous, as one-half of the kitchen sorts have not been referred to. Still, they are many. Of the early kinds some few are already past usefulness, and it is well for those who grow Apples to make of these first earlies a very limited selection. Mr. Gladstone, which fruits well, is one of the best first earlies. Beauty of Bath has not yet fruited fully, neither has Lady Sudeley, which makes sturdy growth. Irish Peach does well, and fruits abundantly. So also does the beautiful Duchess Favourite, and the not less beautiful Worcester Pearmain. A very soft pleasing early Apple is Cardinal, something in the way of Duchess of Oldenburg, but less coloured, more sweet, and earlier; this is a handsome round fruit, somewhat striped, red, and a delightful variety for old people, as its flesh is soft and sweet; it is a good bearer, and does well here. Copeman's is another nice early variety, rich red colour. Cherry Pippin is very good indeed, so to is Court Pendu Plat, but it is worthy of note that, whilst blooming late, it is not fruiting more abundantly than are early-flowering varieties; this variety gives the best colour here on standards. Claygate Pearmain is excellent. A very taking Apple is King Harry, the fruits not unlike those of Lemon Pippin, the skins turning a beautiful golden colour, and mottled red; it is ready in October, and has excellent flavour. Duchess of Oldenburg is, as almost everywhere, very free, and the samples handsome. Strawberry Apple, very rich coloured and conical, should have been referred to with the earliest section. Practically, we have enough and to spare of August and early September varieties; they are so fugitive in quality, that very few should be grown, and those only of the best; their chief use seems to be to make dishes at late summer shows. Margil is very good, especially on standard trees; and Fearn's Pippin not only crops heavily on standards, but colours handsomely. That comparatively tender Apple, American Mother, is here doing well, fruiting freely, and carrying fine form and colour. Of course, Cox's Orange Pippin is good; so too is the good old Cackle Pippin, and also that most excellent keeper, Rosemary Russet. King of the Pippins has a very fine crop on espaliers; so too has Adams' Pearmain, similarly trained.

There are other varieties too numerous specially to mention. Of dessert varieties, Mr. Turton gives the following dozen as his selection from local experience:—Mr. Gladstone, perhaps the earliest of all; Irish Peach, one of the best earlies; Cardinal, Worcester Pearmain, King Harry, King of the Pippins, Cox's Orange Pippin, Blenheim Pippin, Braddick's Nonpareil, Scarlet Nonpareil, Rosemary

Russet, and Cackle's Pippin. The selection still leaves out many good varieties, but all cannot be squeezed into a dozen. Very few first early varieties are named, as these have such very short seasons. A. D. [In illustration of these notes we supply figures of several of the best kinds, figs. 53 to 56.]

ORCHID NOTES AND GLEANINGS.

ONCIDIUM MACRANTHUM.

This is a magnificent Orchid, as anyone knows who has grown it to perfection; to achieve the best results, the plant must be grown on till quite strong before allowing it to flower. I have sent with this note a photograph of a specimen plant, a flowering spike, bearing upwards of sixty perfectly-developed flowers. The photograph fails to do justice to the plant, but it will convey some idea as to the dimensions of the flower spike. The treatment I afford is as follows: the plant is potted in a mixture of good lumpy peat, sphagnum moss, crocks, or charcoal, and as potting proceeds, a good quantity of silver sand is strewn over these. A moderate amount of shade is afforded during bright weather, and a plentiful supply of rain water in the growing season. Now is the time to re-pot or top-dress any plants requiring attention. I grow it in a temperature of about 50° during the winter months, but during the summer, it succeeds best in the Odontoglossum-house. *Herbert May, The Gardens, Markree Castle, Collooney, Ireland.*

ZYGOPETALUM LINDENI.

The flowers of this species, which was shown at the Royal Horticultural Society on June 7 last, are about 4 inches in diameter in each direction. Segments lanceolate, white; lip three-lobed, side lobes small, front lobe large, rounded, wavy, with radiating purple lines on the disc. *Lindenia, t. 337.*

GRAMMANGIS ELLISII.

This is a plant better known as *Grammatophyllum Ellisii*. It has dense conical, leafy, many-flowered spikes, each flower about 2½ inches across; segments oblong, acute, with numerous reddish-purple spots on a yellow ground. The lip is of the same size as the segments, three-lobed, lateral lobes obtuse, mid lobe triangular, revolute at the apex, provided with a prominent ridge ending in three points, and with numerous projecting plates. *Lindenia, t. 338.*

ZYGOPETALUM GRAMINIFOLIUM.

Sepals and petals light green, heavily blotched with dark brown. Lip of a uniform purple-blue, with a very large horse-shoe shaped crest near the base. *Lindenia, t. 339.*

DENDROBIUM NOBILE COOKSONIANUM.

A variety in which the lateral petals are blotched like the lip. *Lindenia, t. 340.*

VARIEGATED FERNS.

PTERIS Victoriae, an introduction from the Eastern Archipelago, which was distributed by Mr. W. Bull, of Chelsea, a little more than a year ago, is a most elegant little Fern. The basal fronds are broad, and cover the surface of the pot, and the fertile ones grow erect; they are pinnate, with some of the pinnae again pinnately divided near the base. The bright fresh green surface is relieved by a pure white linear marking, the white marking being much more distinct than in *P. albo-lineata*, or any other variegated form that I am acquainted with. Unfortunately, it is rather delicate. Since its distribution large numbers of seedlings have been raised, some of which are distinct from the parent. Among those raised by Mr. H. B. May three distinct forms have been selected, and these have all been awarded First-class Certificates by the Floral Committee of the Royal Horticultural Society. The most remarkable of these is one which has all the characteristics of *P. tremula*, with a distinct silvery-grey variation. A curious circumstance is that several made their ap-

pearance in the same batch, all being as near identical with one another as possible. The same thing occurred with the other two varieties, *P. reginæ* and *P. reginæ cristata*, the former being a more vigorous form of *P. Victoria*, having rather broader pinnae, and the variegation running through nearly to the margin of the pinnae; the veins and margin pale green. The crested variety is also well defined, and prettily crested. There are other slight variations among a large batch of seedlings, but the above are the most distinct, and should become general favourites, more especially as they appear to be of more vigorous growth than *P. Victoria*.

Among other variegated forms, the beautiful *P.*

conditions—yet the soft green, with the silvery-white linear marking, makes it one of the most desirable of our greenhouse Ferns.

Lastrea aristata variegata is a very handsome Fern. The bright deep-green surface is relieved by a distinct band of yellowish-green; the fronds being of good substance makes it a useful Fern for decoration. *Athyrium Garringianum pictum*, though a hardy deciduous Fern, deserves being cultivated under glass, the young fronds being almost as bright and distinct in their variegation as *P. tricolor*. *P. cretica albo-lineata*, and its crested varieties, are also among the most useful. I have several times found very prettily variegated forms of the ordinary

which are irregularly marbled with paler shade, is a very pretty and useful Fern.

By making a good selection of the variegated and other tinted varieties of Ferns, a very bright and pleasing effect may be produced, by what are usually considered a colourless class of plants. *Pteris*.

COLONIAL NOTES.

HONG KONG.

HABENARIA SUSANNE.—This is undoubtedly an extremely fine Orchid, and were it better known in England, it would be as much sought after

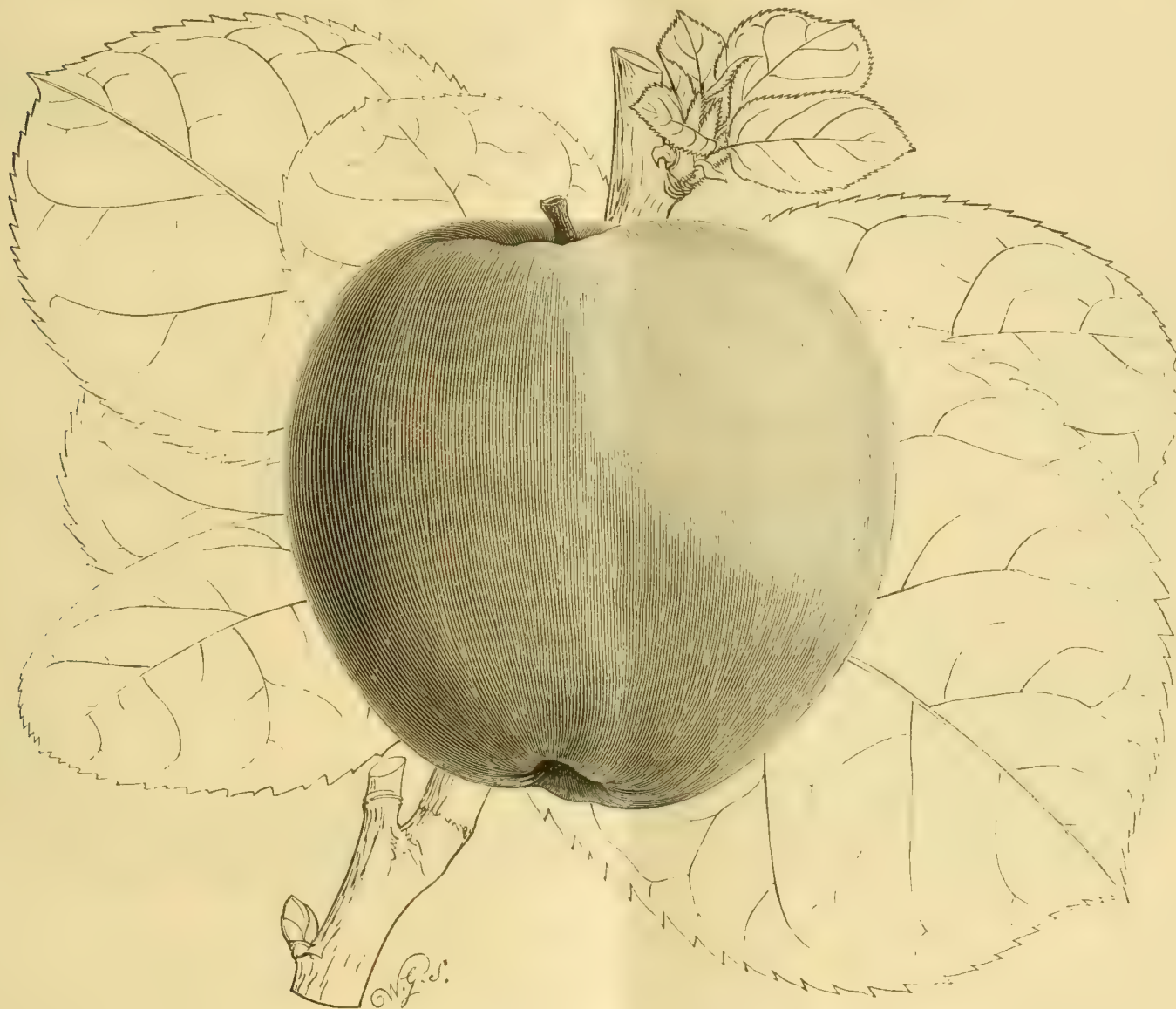


FIG. 55.—LODDINGTON OR STONE'S APPLE. (SEE P. 334.)

tricolor is a gem which is rarely seen in its best form, although it is not difficult to manage. If potted in a good porous compost, and grown in a moderate stove temperature, it will succeed well, an important point being to avoid damp settling on the fronds, for, should the sun strike the fronds while they are damp, it will discolour them. *P. nemoralis variegata* is another pretty variegated Fern, especially in a young state; and as seedlings may be easily obtained, it is never worth while to keep old plants. At first sight this somewhat resembles the popular *Pteris argyrea*, but it does not grow so large, and is erect in growth; the young fronds are also tinted with red, while *P. argyrea* does not show the slightest tint under any

P. serrulata, the pinnae being striped crosswise with irregular stripes, but these have never proved constant; they either have grown out, or have gradually got whiter until there has not been enough green to sustain growth, and consequently the plants have dwindled away. I have seen variegated forms of *Cyrtomium falcatum*, but not decided enough to be worth perpetuating.

Adiantum macrophyllum is well known for the beautiful rosy tint of the young fronds. The variegation consists of irregular stripes through the pinnae; this is not constant, but I have seen some very well marked specimens. *Gymnogramma japonica variegata*, the broad bright green pinnae of

as *Phalanopsis amabilis*. It is found growing on the sides of hills, where it finds abundance of root and atmospheric moisture during the summer season, though in our dry winter months it gets only an occasional shower. The flowers are pure white, 3 inches across, and have a strong *Gardenia*-like perfume. The labellum is 3-lobed, the two lateral lobes being deeply fringed, and thus giving a characteristic appearance to the flower. Benthams, in the *Flora Hongkongensis*, describes the petals as about as long as the sepals, viz., 1½ inch, but in all the specimens I have seen they were only one-third of that length. The spur is sickle-shaped, and from 4 to 5 inches long. It is at its best in

July, and the flowers are borne in threes on leafy stems about 3 feet high.

GLEICHENIA EXCELSA.

This is to be met with on moist, shady, nearly perpendicular banks, where it grows luxuriantly. Its rhizomes creep for a considerable distance, and patches of it 30 or 40 feet square present an imposing appearance. The stipe is several times dichotomously branched, and the pinnae are from 3 to 4 feet long, and from 12 to 15 inches across at their greatest width. *Gleichenia dichotoma* is the only other species found in the island, but it has nothing of the beauty of the preceding about it. It grows all over the hills in sun and shade, but it always does best in partial shade. The pinnae are about 1 foot long, and 1 or 2 inches wide. It is the most common Fern, and perhaps the plant most frequently found in Hong Kong.

MELASTOMA MACROCARPON.

Melastomaceæ have a good representative in this plant, for when in flower, which is in July and August, it forms quite a feature of the hillside vegetation. It is an erect shrub from 5 to 10 feet high, and the flowers, which are produced at the ends of the branches, are 3 or 4 inches in diameter. They vary in colour, from nearly white to dark purple, and though, individually, they only last for a few days in perfection, there is such a succession of flowers, that the plant is an object of interest for several weeks. It seeds readily, and young plants are to be met with in abundance.

SPATHOGLOTTIS FORTUNEI.

Although we cannot boast of a field of Cowslips, we have something nearly as good in the way of this Orchid. During July and August, thousands of the plants may be found in flower on the tops of the hills, growing amongst long grass in the full sun. The flowers are rather more than 1 inch across, and they vary from two or three, to twelve or fifteen on a scape about 2 feet high. The leaves are grass-like, and are rather shorter than the scapes. It may be seen flowering at Kew about September.

THYSANOTENA ACARIFERA.

Fine clumps of this, when in flower, remind one of the Pampas-grass. The long, loose, semi-drooping panicles are borne on strong, erect, leafy stems 8 or 10 feet high, and are of a dark purple colour. It flowers in March, and remains in perfection, with our heavy rains, for two or three months. Moist ravines are its habitat, although it is occasionally found doing remarkably well on old stone walls. If it could be proved to be hardy, it would be a great acquisition to English pleasure grounds. *W. J. Tutcher, Botanic Garden, Hong Kong.*

PRUNUS PISSARDI.

Referring to your correspondents, Messrs. Shuttleworth & Co., p. 311, I have just read in *Floralia* that, in the garden of Mr. H. J. Oosting, at Assen, *Prunus Pissardi* carried five fruits this year. They did not state whether the fruit is eatable, but so far as the editor of the *Floralia* knows, this is the first and only case. *J. K. Budde, Curator, Botanic Gardens, Utrecht.* [We have seen fruits on several occasions. Ed.]

SMALL HOLDINGS ACT, 1892.

(55 & 56 VICT. C. 31.)

WE extract the following particulars from a circular recently issued by the Board of Agriculture:—

"The Act is divided into three parts. Part I. relates to the provision of small holdings by county councils; Part II. to loans by county councils to tenants purchasing small holdings; whilst Part III. contains certain supplemental provisions.

PART I.—Appointment of Committee and Consideration of Petitions.—In conformity with section 5 (1) of the Act, the county council are required to appoint a committee to consider whether the circumstances of the county justify the council in putting into operation Part I. of the Act.

To this committee is to be referred any petition which any one or more county electors may present to the council alleging that there is a demand for small holdings in the county, and praying that Part I. of the Act may be put in operation, and if the committee are satisfied that the petition is presented in good faith and on reasonable grounds, they are forthwith to cause an inquiry into the circumstances to be made, and they are to report the result to the council [section 5 (2).]

Definition of Small Holdings.—For the purposes of the Act, the expression 'small holding' is defined [section 1 (2)] to mean land acquired by a council under the powers and for the purposes of the Act, and which exceeds one acre and either does not exceed 50 acres, or, if exceeding 50 acres, is of an annual value for the purposes of the income tax not exceeding £50.

Purchase and Hire of Land by County Council.—If the county council are of opinion that there is such a demand for small holdings in their county as justifies them in putting into operation Part I. of the Act, the council may [section 1 (1)], subject to the provisions of the Act, acquire any suitable land for the purpose of providing small holdings for persons who desire to buy and will themselves cultivate the holdings.

Adaptation of Land and Erection of Buildings.—The county council may, if they think fit, before sale or letting, adapt for small holdings any land acquired under the Act, by dividing and fencing it, making occupation roads, and executing any other works, such as works for the provision of drainage or water-supply, which can in the opinion of the council be more economically and efficiently executed for the land as a whole [section 3 (2)].

The county council may also [section 3 (3)] if they think fit, as part of the agreement for the sale or letting of a small holding, adapt the land for a small holding by erecting thereon such buildings, or making such adaptations of existing buildings, as in their opinion are required for the due occupation of the holding, and cannot be made by the purchaser or tenant.

Where any right of grazing, sheepwalk, or other similar right is attached to land acquired by a county council for the purposes of small holdings, the council may [section 14] attach any share of the right to any small holding in such manner and subject to such regulations as they think expedient.

Sale and Letting of Small Holdings.—The county council are to apportion the total cost of the acquisition of the land, and of any adaptation thereof, among the several holdings, in such manner as seems just; and subject to the provisions as to the letting of small holdings contained in the Act, the county council are to offer the small holdings for sale in accordance with the rules to be made by them under the provisions of section 7 of the Act [section 4 (1)].

Where the county council are of opinion that any persons desirous of themselves cultivating small holdings are unable to buy on the terms fixed by the Act, or where the land has been hired by the council on lease or otherwise, the council may [section 4 (2)], in the case of any small holding which either does not exceed 15 acres in extent, or if exceeding 15 acres is of the annual value for the purpose of the income tax not exceeding £15, instead of offering it for sale, offer to let it in accordance with rules to be made by the county council under the provisions of section 7 of the Act.

Section 4 (2) of the Act empowers a tenant of any small holding, before the expiration of his tenancy, to remove any fruit and other trees and bushes planted or acquired by him for which he has no claim for compensation, and to remove any toolhouse, shed, greenhouse, fowlhouse, or pigsty, built or acquired by him for which he has no claim for compensation.

Section 4 (3) empowers a county council to sell, or, in the case of small holdings which may be let, to let one or more small holdings to a number of persons working on a co-operative system, provided such system be approved by the county council.

A small holding may be sold subject to such rights of way or other rights for the benefit of other small holdings as the council consider necessary or expedient [section 6 (7)].

Provision and Repayment of Purchase Money.—The purchase money for each small holding sold by the county council is to include [section 6 (1)] the costs of the registration of the title of the purchaser, but is not to include any expense incurred by the purchaser for legal or other advice or assistance.

A purchaser is required [section 6 (2)] to complete the purchase within such time, not less than one month after the purchase, as is fixed by rules to be made by the county council under the provisions of section 7 of the Act, and on such completion he is to pay [section 6 (3)] not less than one-fifth of the purchase money.

After taking into account the original cost of the land, the expenses, if any, incurred in its adaptation under section 3 (2) and (3) of the Act, and any other expense, including the legal expenses of the county council and the costs of the registration of the purchaser's title, incurred by the council in relation to the land, the purchase money is fixed by the council at, say, £500.

- (1.) Not less than one-fifth of the purchase money, *i.e.*, in the case put, £100, is to be paid in cash.
- (2.) Not more than one-fourth, *i.e.*, in the case put, £125, may be secured by a perpetual rentcharge if the county council think fit.
- (3.) The residue may be repaid either by equal half-yearly instalments of principal, with interest on the outstanding balance whatever it may be, or by a terminable annuity, payable half-yearly, to include both principal and interest. Assuming the rate of interest agreed on with the council to be 4 per cent., and the term of repayment 50 years, the purchaser would, if the residue were £275, pay, under the first of the two alternative modes of repayment, £2 15s. capital, and £5 10s. interest at the end of the first half-year, £2 15s. capital, and £5 8s. 11d. interest at the end of the second half-year, and so on throughout the whole period of fifty years, the interest being gradually reduced; whilst under the second of the two alternative modes of repayment he would pay at the end of each half-year throughout the whole period of fifty years, on the basis of Archer's Tables, the sum of £6 7s. 7½d.

Conditions under which Small Holdings are to be Sold.—Section 9 provides that every small holding sold by a county council under the Act shall for a term of twenty years from the date of the sale, and thereafter so long as any part of the purchase money remains unpaid, be held subject to the following conditions:—

- (a.) That any periodical payments due in respect of the purchase money shall be duly made;
- (b.) That the holding shall not be divided, subdivided, assigned, let, or sub-let, without the consent of the county council;
- (c.) That the holding shall be cultivated by the owner or occupier as the case may be, and shall not be used for any purpose other than agriculture;
- (d.) That not more than one dwelling-house shall be erected on the holding;
- (e.) That any dwelling-house erected on the holding shall comply with such requirements as the county council may impose for securing healthiness and freedom from overcrowding;
- (f.) That no dwelling-house or building on the holding shall be used for the sale of intoxicating liquors;
- (g.) In the case of any holding on which, in the opinion of the county council, a dwelling-house ought not to be erected, that no dwelling-house shall be erected on the holding without the consent of the county council.

Sale of Small Holdings where Conditions are Broken, or where Sub-division would take Place.—If any of the conditions under which a small holding is sold should be broken, the council may, after giving the owner an opportunity of remedying the breach, if it is capable of remedy, cause the holding to be sold [section 9 (2)].

If on the decease of the owner while the holding is subject to any of the above conditions, the holding would, by reason of any devise, bequest, intestacy, or otherwise become sub-divided, the council may require the holding to be sold within twelve months after such decease to some one person, and if default is made in so selling the holding, the council may cause the holding to be sold [section 9 (3)].

The proceeds of the sale are to be applied in discharge of any unpaid purchase money for the holding or in the redemption of any rentcharge or terminable annuity which is not to continue a charge on the holding, and, subject as aforesaid, are to be paid to

with an absolute title under the Land Transfer Act, 1875. The form in which they are to proceed will be prescribed by rules under that Act, as already mentioned.

User of Land after Cessation of Restrictive Conditions.—If at any time after the restrictive conditions imposed by the Act have ceased to attach to a small holding, the owner of the holding desires to use the holding for purposes other than agriculture, he is required [section 11] before so doing, whether the holding is situate within a town or built upon or not, to offer the holding for sale, first to the county council from whom the holding was purchased, next to the person or persons (if any) then entitled to the lands from which the holding was originally severed, and then to the person or persons whose lands immediately adjoin the holding. Sections 127 to 130 of the Lands Clauses Consolidation Act, 1845, which refer to the course to be taken where superfluous land has been acquired for the

these provisions, unless the council are satisfied that the title to the holding is good, that the sale is made in good faith, and that the price is reasonable [section 17 (3)].

PART III.—Restrictions affecting County Councils.—A county council are [section 18 (1)] not to acquire land under the Act save at such price that, in the opinion of the council, all expenses incurred by them in relation to the land will be recouped out of the purchase money for the land sold by the council, or, in the case of land let, out of the rent, and the council are to fix the purchase money or rent at such reasonable amount as will, in their opinion, guard them against loss.

Borrowing Powers and Expenses.—A county council may [section 19 (1)] borrow money for the purposes of the Act in accordance with the Local Government Act, 1888, except that any money so borrowed is, notwithstanding anything in that Act, to be repaid within such period not exceeding 50 years, as

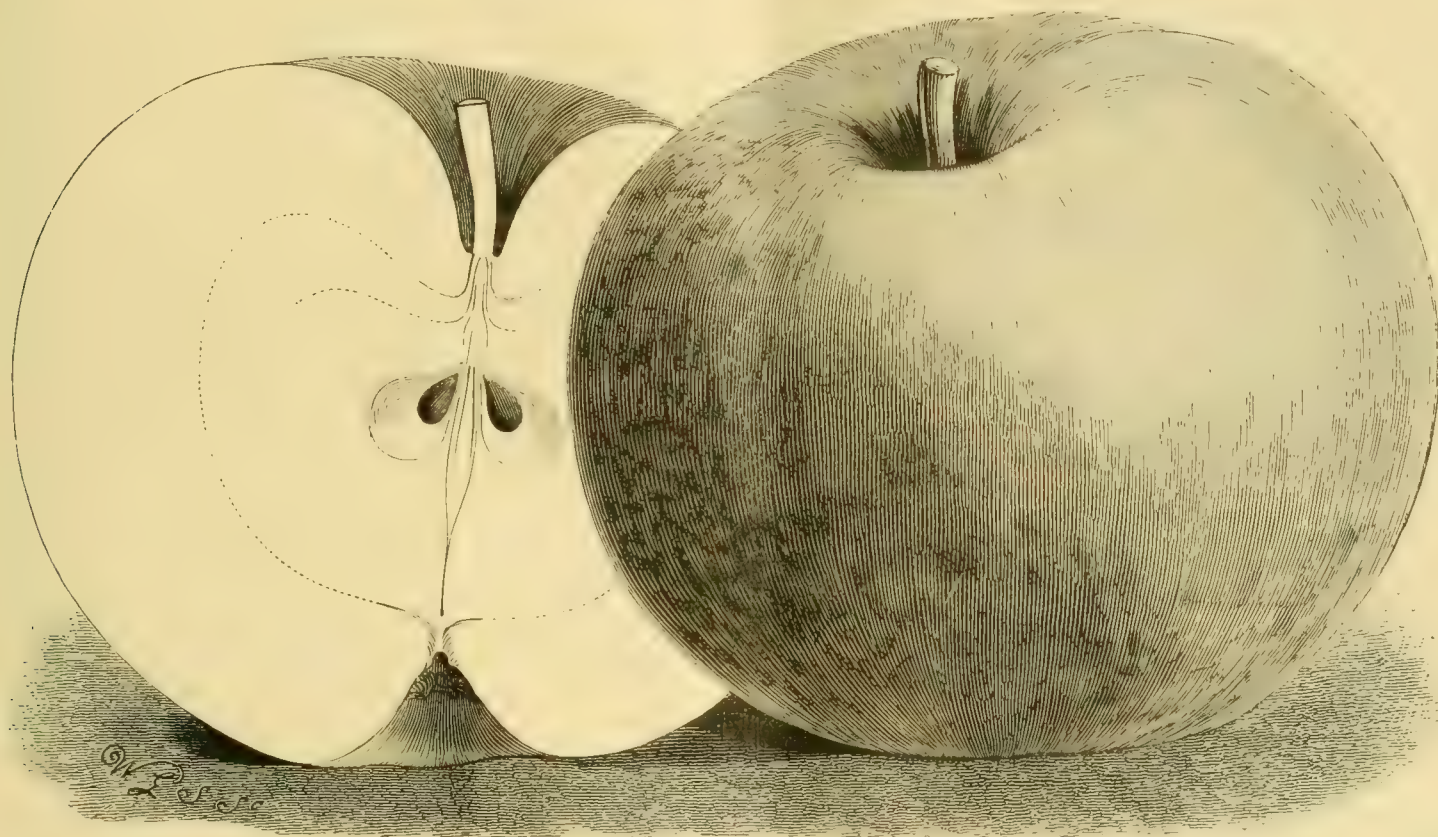


FIG. 50.—APPLE, PEASGOOD'S NONSUCH (SEE P. 333)

the person appearing to the council to be entitled to receive the same [section 9 (5)].

Conditions under which Small Holdings are to be Let.—Every small holding let by a county council under the Act is to be held [section 9 (7)] subject to the conditions on which it would be held if it were sold, except so far as those conditions relate to the purchase money; and if any such condition or any term of the letting is broken, the council may, after giving the tenant an opportunity of remedying the breach, if it is capable of remedy, determine the tenancy.

Saving for Local Bye-Laws.—Nothing in or done under section 9 of the Act is to derogate from the effect of any building or sanitary bye-laws for the time being in force. Consequently, the requirements of the county council under sub-section (1) (e) of the section must be such as will not be inconsistent with the bye-laws in force in the sanitary district in which the house is situate.

Registration of Title.—When a county council have purchased land under the Act, they are [section 10 (1)] to apply at the Land Registry Office, for their registration as proprietors thereof

purposes of any public undertaking, are to apply, in such cases, as if the owner of the small holding were the promoter of the undertaking, and the holding were superfluous lands within the meaning of those sections.

PART II.—Loans by County Councils to Tenants purchasing Small Holdings.—Under section 17 (1) of the Act, where the tenant of a small holding has agreed with his landlord for the purchase of the holding, the county council of the county in which the holding or any part of it is situate may, if they think fit, advance to the tenant on the security of the holding an amount not exceeding four-fifths of the purchase money thereof.

The provisions of the Act with respect to the purchase money secured by a charge on a small holding sold by a county council, and with respect to any small holding so sold are [section 17 (2)] to apply to an advance made and a holding purchased as above, as if the advance was the purchase money, save that the county council are not to guarantee the title of the purchaser of the holding.

No advance is to be made by a county council to the tenant of a small holding, in conformity with

the council, with the consent of the Local Government Board, determine in each case.

The Public Works Loan Commissioners are empowered [section 19 (2)], in manner provided by the Public Works Loans Act, 1875, to lend any money which may be borrowed by a county council for the purposes of the Act.

Every loan by the Public Works Loan Commissioners in pursuance of the Act is to bear such rate of interest not less than £3 2s. 6d. per cent. per annum, as the Treasury may authorise as being in their opinion sufficient to enable such loans to be made without loss to the Exchequer [section 19 (3)].

Definitions.—For the purposes of the Act—

The expressions 'agriculture' and 'cultivation' are [section 20] to include horticulture and the use of land for any purpose of husbandry, inclusive of the keeping or breeding of live stock, poultry, or bees, and the growth of fruit, vegetables, and the like: and

The expression 'county' is to mean the area under the authority of a county council,

In the Act, and in the enactments incorporated with the Act, the expression 'land' is to include any right or easement in or over land.

The Board earnestly hope that experience of the practical working of the Act may show that it has been successful in accomplishing the object with which it has been sanctioned by Parliament, and that by its means the acquisition of land in small holdings by those who are able to cultivate them with advantage may be facilitated."

PIERRE SONNERAT.

(1745—1814).

COMMERRON's disciple, Pierre Sonnerat, was destined to eclipse his less fortunate master in fame, happily living to see his work abroad appreciated at home. Born under the monarchy, in 1745, and brought up at Lyons, with a cultivated taste for natural history, and endowed with great skill as a draughtsman, young Sonnerat, when twenty-three years of age, obtained employment under the Government in the colonial and marine department. His relative, Pierre Poivre, having been appointed Intendant at the Isle of France, obtained for his protégé a situation in that colony, and in 1768, the zealous naturalist left Paris for the southern hemisphere. Commerson, who had remained in the Mascarene Islands, after accompanying the expedition of Bougainville, speedily recognised the abilities of Sonnerat, who attached himself to him, and worked cordially in his company for three years in Mauritius, Bourbon, and Madagascar, rich fields, hitherto unexplored by scientific botanists.

Poivre had previously despatched an expedition to the Moluccas, with instructions to collect and bring back to the French colony all possible varieties of economical plants, especially those which bore spices, with some partial success. In 1771, he determined to send another expedition for the same purpose. It was composed of the frigate (*Néte*) "Ile de France," commanded by the Chevalier de Coëtivi, and the corvette "Nécessaire," under Captain Cordé. Sonnerat was attached to the first of these ships, in which he visited, first the Seychelles Archipelago,* where he particularly obtained specimens and drawings of the famous *Coco-de-Mer*,† *Lodoicea Seychellarum* (the first exact published representations of which were due to his pencil); and next proceeded to Manilla, Sam-bouangan, Mindanao, and Yolo, in the Philippine Islands. The expedition proceeded thence to Patani and Pulo-Gheby, islands inhabited by the Papuans, where they collected and embarked a considerable number of plants and seeds of the Nutmeg (*Myristica*) and Clove (*Caryophyllus*), with which cargo Captains Coëtivi and Cordé returned to the Isle of France, where Sonnerat was enabled to propagate his young plants successfully in M. Poivre's gardens at Pamplemousses and Réduit. [It may here be noted that the Cloves which Poivre had previously introduced, and which were in charge of M. Céré, first bore fruit in October, 1775.] Sonnerat returned in 1774, after the death of Commerson, to France, bringing back with him a remarkably fine collection of natural history specimens, which he deposited in the Royal Museum (cabinet du Roi). He set out again for the East Indies the same year with rank of naval commissary, and was commissioned by the French Government to continue his researches in those regions. He explored Ceylon and the Malabar coast, Mahé, and the Ghauts mountains; then traversing the coast up to Surat, he went in this direction as far as the Gulf of Cambay. The indefatigable traveller then visited the coast-line of Coromandel and the Sunderbunds at the mouths of the Ganges, proceeding on to Malacca and China. Thence he returned to the Coromandel littoral, and for two years travelled in the provinces of the Carnatic, Tanjore and Madura; but war breaking out with England, in 1778, Sonnerat

was shut up with the French forces under de Bellecombe at Pondichéry, where he was placed in charge of the hospitals and stores during the siege, which lasted forty days. After the capitulation of this place to the British, under Sir Hector Munro, the gallant naturalist was enabled to return, *vidé* the Isle of France, Madagascar, and the Cape, to France, where he busied himself for some time in preparing for publication the volumes of his travels. Whilst abroad, he had already printed his first book (*I. Voyage à la Nouvelle Guinée, dans lequel on trouve la Description des lieux, des Observations Physiques et Morales, et des détails relatifs à l'Histoire Naturelle dans le règne animal et le règne végétal.*—Paris, 1776). He dedicated this volume to Madame Poivre, to whom he was related. Although the title-page of these travels bears the name of New Guinea, Sonnerat had not actually landed on the mainland of that continental island. Sonnerat only reached Pulo-Gheby, a small islet situated several minutes of latitude to the north of the equator near the south-west coast of Gilolo. This book contains some curious and interesting details of Manilla, the Philippines, Yolo, Pulo-Gheby, and the Moluccas. This volume also contains the illustration of the *Coco-de-Mer* as above-mentioned. Sonnerat now published his better-known *Voyage to the East Indies* (*II. Voyage aux Indes Orientales et à la Chine, fait par ordre du Roi depuis, 1774, jusqu'en 1781, Paris, 1782, 2 vols., 4to*, illustrated with a large number of natural history plates. Among these may be enumerated as interesting to the readers of the *Gardeners' Chronicle*, the following original drawings and descriptions of plants, then first exactly delineated and made known to scientific botanists in Europe, viz.:—*Ravenala madagascariensis*, Linn.; *Ravensara aromatica*, Linn.; *Cadamba jasminiflora*, Linn. (the famous arbor triste); *Litchi chinensis* or *Euphoria sinensis*, Jussieu; *Cookia punctata*, afterwards named *Sonneratia punctata* by Linnaeus; in honour of Sonnerat; *Uvaria longifolia*, Linn.; *Sterculia foetida*, Linn.; *Bombax gossypium*, Linn.; *Tambourissa quadrifida*, Linn.; *Banisteria tetra-tera* or *Gærtnera indica*, Linn.; *Amomum repens*, Linn.; *Amomum angustifolium*, Linn.; *Grewia asiatica*, Linn.; *Marsana buxifolia*, Linn. (so named after the Princess de Marsan, the governess of the children of Louis XV.); *Cristaria coccinea*, Linn.; *Piper betel*, Linn., &c. *Capt. S. Pasfield Oliver, Moray House, Stokes Bay, Gosport, August 5.*

(To be continued.)

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

THE MEXICAN HOUSE.—The flower-spikes of the varieties of *Lælia anceps* are now showing in numbers; but the white varieties are shy than the type, and rarely flower till the pseudobulbs have got strong and of the largest size. Having arrived at this stage, however, the production of spikes is not difficult if the culture is good, and the treatment pursued in this house differing only from that of the *Cattleya*-house in the absence of shading. In order to balance the temperature, and prevent the sun from too much burning the foliage of the plants, a more liberal supply of air, and consequently more moisture in the air are required, the evaporation of moisture being very great. The *Lælia anceps alba* varieties should be kept near the roof, and if they are in pots, the arrangement should be such that they are not further than 3 feet away from the glass; but they are best grown in pans or baskets, and hung up to the roof, and the transfer from pots may be done with safety now as soon as the young pseudobulbs are finished growing, or it may be deferred to early spring. Why I suggest the autumn as the season for transferring the plants is, that they then frequently push out new roots in profusion, which continue to grow throughout the winter, and by the spring these roots have attained a good length, which often causes repotting to be necessary at that season, which is apt to be irksome. The compost suitable for these *Lælia*s is sphagnum moss and fibrous peat in about equal parts, and when repotting or rebasketing the plants, the leading pseudobulbs

should be so placed that they will grow towards the centre, and be self-supporting, and not to the sides. The plants, when treated in this manner, thrive better than if they were over-potted or loose in the compost. I would not recommend shifting at this date any of the plants that are carrying flower-spikes, this in their case being best done in the spring. Other short-bulbed varieties, as *L. albida*, *L. autumnalis*, *L. Gouldiana*, *L. furfuracea*, are now forming flower-spikes, and the plants should be kept clean and free from a small species of scale, which attack the young tender leaves sometimes. It is best to discontinue the general syringing the plants overhead at this season, and only doing it in the morning, when appearances are those of a bright day, otherwise the damping-off of the flower-spikes is to be feared.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

FREESIAS.—These beautiful Cape bulbs have become very popular of late years, and when we take into consideration the ease with which they may be grown, and their general usefulness as cut flowers, and for the decoration of the greenhouse, it is not a matter of much wonder. To have a succession of flowering plants during the winter and spring, the bulbs should be potted at different times, and the first batch of bulbs should be potted forthwith, and the second lot towards the end of the present month, and some still later, about the end of October. A compost consisting of two parts rich loam and one each of leaf-mould and decayed cow-manure, with sufficient silver-sand added to keep the whole porous, will be found suitable. Place four or five bulbs in a 48-sized pot or in a 32, covering them to the depth of half-an-inch with fine soil, and placing them in a cold frame and watering them. No more water should be afforded if it can be avoided till the bulbs have started and grown 2 or 3 inches in length. Remove them to a shelf near the glass in an intermediate-house, and when the pots are fairly well filled with roots, weak manure-water may be afforded sometimes.

POLIANTHES TUBEROSA (TUBEROSES).—The required number of these bulbs should be purchased forthwith, potting them up in successive batches, in accordance with the requirements of the family. Pot them either singly in 5-inch pots, or place four bulbs in an 8-inch pot. The pots should be well drained, and a good compost for them will consist of three parts rich fibrous loam, one of leaf-soil, with the addition of a little decayed manure, and some small quantity of silver-sand. Those intended to flower early should be plunged in a bed with a bottom-heat of 70° to 75°, so as to encourage the production of roots, and no water should be afforded them before top-growth begins, unless the soil should become very dry, when just sufficient should be afforded to prevent the shrivelling of the bulbs. Keep them near the glass at all times after growth has commenced.

HARD-WOODED PLANTS.—Now that we are past the middle of September, the houses, &c., must be got ready for these plants by having the woodwork and glass cleaned and the walls whitewashed, as after the present date it will not be safe generally to trust anything of a tender nature outside longer, unless precautions are taken to ward off frost by means of moveable frames fitted with oiled canvas, reed mats, &c., when the plants may be left outside for a fortnight longer. The tenderest of these, *Adenandras*, *Leschenaultias*, *Callistemons*, *Epacris*, *Tetralucas*, *Boronia*, *Hedera*, &c., should be first housed, but the *Acacias*, *Genistas*, *Azaleas*, *Eugénias*, and *Pittosporums* may be left outside until the first week in October. Examine the plants minutely, to see that they are free from thrips and red spider. Although these insects will not increase to any great extent during the winter, as soon as the warm days of spring return they will speedily increase, and cause a good deal of labour in eradicating them from the plants. These plants should occupy a greenhouse or cool span pit, where they may be brought well up to the roof, and obtain all available sunlight. Strong growing hard-wooded plants which have completed their top-growth, will still continue to make fresh roots, which makes it necessary to guard against the plants becoming too dry at the roots, and thus check root-action.

PLUMBAGO CAPENSIS AND P. ALBA.—These are attractive plants, which bloom during the late summer, when greenhouse flowering subjects are not too plentiful, which make them so much more

* *En route*, an island was discovered on July 1, in lat. 7° 6' S., long 56° 16' E., which bears the name of its discoverer.

† See ante, *Gardeners' Chronicle*, May 21, 1892. Discovery of the *Coco-de-Mer* by Barré in 1769.

valuable. They grow well when planted out in borders, and trained loosely to the rafters or pillars of the greenhouse; and treated in this manner, they attain to a larger size than is the case if they are grown in pots. Now that the flowering season is past, the current year's growths may be cut back quite three-fourths of their length, any neglect of this causing the plants soon to become bare and leggy. Before cutting them in, like all other plants when a large portion of the top is removed, water should be withheld for a few days, so as to allow the soil to become somewhat dry, a moderately dry condition being also advisable till signs of growth are again observed. These remarks will apply to pot-grown specimens, but young plants which have not filled their allotted space should not be much pruned in.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

THE BEDS.—The recent fine weather has improved the appearance of the beds of all kinds. *Lilium auratum*, *L. a. macranthum*, *L. a. rubro-vittatum*, *L. a. pictum*, *L. speciosum rubrum*, *L. rubrum album*, *L. tigrinum*, and *L. t. flore-pleno* are now, as they have been for some time past, in fine flower, in the mixed borders; and *Fuchsias*, pyramids of *Pelargonium* *Souvenir de Charles Turner*, *Madame Crousse*, and *Jeanne d'Arc*, together with like trained plants of *Calceolaria amplexicaulis*, *Heliotropes*, *Petunias*, *Plumbago capensis*, &c., are now as gay as they have been at any time during the season. These subjects are grown here in pots sunk in the turf in appropriate places; plants, similarly trained, of *Acacia lophantha* and *Abutilon Thomsonianum*, *Solanum marginatum*, *Melanthus major*, and the golden-striped *Maize* intermixed, are also so disposed, or they are planted in beds with a carpet of *Violas*, either blue or yellow, or *Mesembryanthemum*, with an edging of some bright plant. There are nooks in most gardens that could be rendered beautiful in this manner. In order to prolong the flowering of any plants, all spent-flowers and seed-pods should be kept picked off. *Fuchsias* are likely to be extensively used in the flower garden, and they are showy and graceful. I refer to them now, so that those who may intend to employ them next year, may get up a stock of them this season.

ROSES.—Standard and own-root *Roses* are flowering freely, and the blooms are large and solid; those specially good being *Duke of Wellington*, *Duke of Edinburgh*, *William Bull*, *Jules Margottin*, *Alfred Colomb*, *Boule de Neige*, *Gloire de Dijon*, and *Souvenir de la Malmaison*; the latter, one of the best autumn *Roses* that we possess. Now that the nights are colder, the young shoots of some varieties of *Roses* are sure to be attacked by mildew, and the usual remedy, flowers-of-sulphur, should be applied forthwith, while the leaves are damp in the early morning. There are other remedies for mildew to be found in trade lists.

BEDDING PLANTS of a tender nature should be placed under protection in pits or frames, fully exposing them during fine days. Tender plants should be put on a shelf near the glass in a hot-water pit, or some other suitable place, in which the minimum temperature is not lower than 55° or 60°. Examine the plants frequently to ascertain if water be needed, i.e., if the soil is moderately dry.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

STRAWBERRY BEDS, ETC.—All plants intended to fruit next year should be kept free from runners, and the beds from weeds, the hoe being frequently passed between the rows. On light land, early mulching should be applied, and water must be supplied in quantity, should the soil be dry. If the plants of this season's planting are not kept in a growing state, the chance of a heavy crop next season will be a poor one. Late-layered runners, or those dibbled a few inches apart into nursery beds, should, if well rooted and the land at liberty, be planted out where they are to fruit, planting them firmly on ground that has been well prepared for them, watering the plants before lifting them, and again after planting. These plants will not fruit well next year. If the rows are a good distance apart, some early vegetable crops may be taken from the land. Old Strawberry beds which may have been neglected should now be put in good order, the bottom leaves, runners, and weeds being removed. If the surface of the ground

is hard, a slight pricking up with a digging-fork will be advisable, and water may be afforded afterwards if the land be dry.

Preparations should be made for top-dressing trees whose fruits were gathered early. Usually this work is deferred till the nailing of the tree is finished, and where slight dressings are required, this does very well; but in the case of trees that have cropped heavily, and are showing signs of exhaustion, heavy dressings are needful to keep up the vigour of the trees, and produce good fruit, and the removal of the surface soil to a depth of 12 inches, raising and pruning back the principal roots that may be bruised. Having done this, afford the soil a good sprinkling of bone-meal, old brick mortar, or burnt earth, and work it into the soil with a fork, watering it through a rose-pot, and cover up with good well-prepared materials, beating them moderately firm, taking care that the soil is rather on the dry side than the reverse, and it can then be made firmer without injury. If it be wet, it should be left awhile before making firm. The trees in hot weather may be syringed overhead, and then the roots will take to the soil before the leaves fall, and while the soil is still warm.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

CABBAGES FOR SPRING CUTTING.—These Cabbages are those kinds which should come into use during April and May, if seed was sown at the proper time. At this part of the season there will be no lack of planting stuff if sowing has been attended to in the manner indicated in earlier Calendars, and in view of this, ground should have been prepared. I have not found more suitable quarters for Cabbages than the ground that was occupied by the crop of spring-sown Onions, it being usually heavily manured. In such land the plants will make a sturdy growth, short in the stem, and therefore better able to withstand severe frost than other plants which may have made rapid growth. The firmer the ground is, especially if it be of a light nature, the firmer the Cabbage tissues, and the less likely are the plants to bolt. If freshly-dug ground be planted it should, if light, be well trodden previous to planting. Cabbages may be planted much closer together than is often done; and I would advise the planting of the small hearting varieties as *Ellam's Early* (and this variety is one of the best), at 12 inches between the rows, and 9 inches from plant to plant. This saves much ground, and one is not afraid to cut the larger plants early in the year, thus allowing space for the later ones. If the plants stand thickly in the seed beds, do not allow them so to remain, but prick them out into lines a few inches apart if ground cannot be spared for at once planting them. These will lift with plenty of root towards the end of the present month. If this vegetable is required in large quantities, a large piece of ground should be prepared, the plants being pricked-off at the present time into lines. These pricked-off plants winter well, and come in useful for filling the lines early in the year.

CELERY.—The early Celery will require earthing-up, and advantage should be taken of dry days to perform the operation, previously affording the rows liquid-manure, or dressing them with some kind of fertiliser, as fish-manure, following this with a watering, the plants being allowed to get dry before the moulding-up is begun. Salt and soot are good fertilisers. During rains, Celery with a large top-growth often suffers for want of moisture at the root, the heavy crown of leaves throwing off much of the rain, so that occasional supplies of liquid-manure or water become necessary to prevent running and bad flavour.

CARDOONS will require abundance of water and liquid-manure, and the flavour of the stalks will be improved if salt or fish-manure be afforded. All loose leaves should be removed, and a stout tie given to keep the others together. A portion of the crop may be blanched if required early, twisting hay-bands round the stalks when the foliage is quite dry, and well banking-up the plants with soil afterwards.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

STRAWBERRIES IN POTS.—These should be examined, and imperfect drainage rectified; worms obtaining ingress to the pots at this season, and closing the hole at the bottom, quickly souring the

soil. When rich soil gets into this condition, the plants either die or fail to ripen their crowns. Plants affected in this way should be supplied with clear lime-water after the drainage has been cleared. Guard against crowding the plants, and let every plant stand clear of its neighbour, and continue the removal of runners. Weakly subjects may be fed with well-diluted farmyard manure water; but those which are growing strongly will need have but a pinch of superphosphate of lime evenly distributed over the surface of the soil. The pots being now well filled with roots, an unsparing supply of water on warm days is needed. Discontinue the use of the syringe, as the night dews are now sufficiently heavy. Should a period of wet weather set in, it will be found conducive to the well-being of the plants to place frame sashes over the plants, removing them when bright weather returns. With such a cold sunless season as the present, every means should be used to hasten growth and mature it. Apricot trees from which the fruit is gathered, should get heavy syringing with soot water in which soft soap has been dissolved to remove dirt and insects. The root-pruning of such trees as are making too strong wood should be attended to forthwith, and transplanting of trees carried out without losing time. In carrying out the latter operation, retain a good ball of soil, which should be taken with the trees, and the syringe should be plied on the foliage till the roots are able to obtain a supply of food equal to the demand.

THE APIARY.

By EXPERT.

RE-QUEENING.—In districts where condemned bees are to be had, it is a good plan to save the young queens for re-queening purposes. All skeps that have swarmed, and after-swarms or casts, will contain queens that have been hatched this season. The easiest way to find queens in skeps is by resorting to the process known as bumping, instead of driving. After puffing in a little smoke at the entrance, the skep is taken off the stand, held wrong side up, and then bumped on the ground, cornerwise, while being held at an angle of about 45°. This sudden jerk or bump has the effect of loosening or breaking the combs close to where they are attached to the straw, so that they can then be lifted out almost as easily as from a frame hive. If one or two of the central combs are taken out first, the queen will generally be found upon one or the other of them, when she should be captured and put into a match-box, together with a few workers, to keep her supplied with food. To introduce the queen, it is a good plan to place the match-box over the stock intended to receive it, after the old queen has been removed, for a few hours or a night, as then it makes it more certain that she will be properly received. This is, no doubt, owing to her obtaining in this way the scent peculiar to the hive. A piece of perforated zinc can be placed over the feed-hole, and the match-box opened slightly and laid over it. A home-made introducing cage, constructed of perforated zinc, formed into a tube half an inch in diameter by rolling round a stick, answers very well. It should be about 2½ inches long, the lower part being filled with candy to the height of an inch, made by mixing icing sugar and honey into a stiff paste. The queen is then inserted, and a cork pushed in at the other end keeps her secure; the cage is then ready to be pressed down between the combs in the hive. An examination should be made two or three days afterwards, to find out if the operation has been successful; and if eggs are then found, all will be right.

PAINTING HIVES.—Before the bad weather comes, hives should be puttied and painted, so as to make them water-tight for winter, this especially referring to roofs, which are almost sure to develop cracks and openings during the summer.

THIS SEASON'S RESULTS.—A correspondent (on p. 246), referring to bees having done very badly this year in the North, owing to the unfavourable weather experienced, thinks it would be interesting to know how stocks have stored in the more-favoured South. Speaking from personal observation, it must be considered, on the whole, but a poor season, although in some cases hives that were exceptionally strong in the spring have rendered a good account of themselves. For example, in Suffolk over eighty well-filled pound sections were taken from one hive, leaving enough in the brood-frames below to winter on; and in Essex, sixty miles distant, 100 lb. have been extracted from the combs of one stock.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY SEPT. 20 { Royal Horticultural Society: Fruit and Floral Committees.

SALES

MONDAY, SEPT. 19 { Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms, at 12. Plants from Belgium, Carnations, and Hardy Bulbs, at Protheroe & Morris' Rooms, at 12. Dutch Bulbs at Stevens' Rooms.

TUESDAY, SEPT. 20 { Annual Sale of Greenhouse Plants at the Moat Nursery, East Grinstead, by Protheroe & Morris. Great Clearance Sale of Orchids at 213, Park Road, Clapham, by Protheroe & Morris (three days). Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, SEPT. 21 { Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Stove and Greenhouse Plants at Owen's Nursery, Maidenhead. Lilioms at Stevens' Rooms.

THURSDAY SEPT. 22 { Dutch Bulbs at Protheroe & Morris' Rooms. Plants from Belgium and Hardy Bulbs at Protheroe & Morris' Rooms. Lilioms and imported and established Orchids at Stevens' Rooms.

FRIDAY SEPT. 23 { Great Sale of Odontoglossum Alexandrie at Protheroe & Morris' Rooms. Dutch Bulbs at Protheroe & Morris' Rooms.

SATURDAY SEPT. 24 { Great Sale of Odontoglossum Alexandrie at Protheroe & Morris' Rooms. Dutch Bulbs at Protheroe & Morris' Rooms. Lilioms at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—56° 7.

Steam and Hot-water Heating for Greenhouses.

In the *Bulletin*, No. 41, for the month of August of the present year, issued by the Cornell University Agricultural Station, the comparative merits of the above systems of warming horticultural buildings are somewhat exhaustively discussed by Mr. F. W. CARD. The introduction is by Prof. L. H. BAILEY, who states what he thinks should be the best method of arriving at definite results concerning the relative merits of the two systems. He says that to do this "we must consider not only the consumption of coal, but the original cost of the two systems, their adaptation to particular purposes, and the comparative ease with which they can be managed. At the outset of our investigation, we asked ourselves the question, 'where is the heat expended in the two systems?' It is evident that two heating plants which make the same amount of heat, and carry it throughout houses of equal size, may distribute this heat differently, and therefore differ widely in usefulness. We have endeavoured to ascertain how much heat left the heater (boiler), and how much returned to it; how much was expended near the heater; how much escaped from the risers (flow-pipes) as top-heat, and how much from the returns as bottom-heat. These ques-

tions cannot be studied by taking the air temperatures of the houses. In fact air temperatures taken at stated intervals seldom afford a satisfactory measure of the actual conditions of the houses, for they do not show the incidental variations, and they often overlook the temperature at the most critical periods; this fact is well illustrated in the air records of our houses in the following pages, which give the highest average for the hot-water house, although it was actually the coldest. It is apparent that air temperatures are influenced by sun, ventilation, watering, and general management, and they are discontinuous; and they cannot, therefore, be accepted as accurate measures of the heating capacity of any apparatus. It follows that the performances of two systems can be studied nearly as well in houses of different construction as in similar ones, for the house is, to a certain extent, eliminated from the problem and the actual work of the apparatus considered. The heat must be measured in and on the pipes; after it leaves them it is largely beyond our control."

From the above the reader will observe that this method of testing the capacity of boilers, either steam or hot-water, differs greatly from that adopted by our horticultural builders, who seem to be satisfied if they ascertain how much 4-inch piping will be required to heat so many cubic feet of air, and the required size of boiler for the ascertained quantity of pipe. Where these various conditions are fulfilled, gardeners in this country are usually satisfied with the results obtained. Yet it will sometimes occur that owing to glasshouses being built on various levels and at a variety of angles to each other, hot-water circulates badly, every bend or dip in the pipes producing friction and consequent sluggish circulation of the water. In such cases steam forms a better heating medium than water, as no impediments in this form exist to hinder its onward movement, and the heat is almost as great at the most distant point as near the boiler. The houses at Cornell University were rather intricate in arrangement, and used for various purposes, some being warm ones, others cool; but there was no difficulty in maintaining the proper heat in each by means of steam in those in which it was used, and the variations were much less as noted on and in the pipes than was the case with the hot-water pipes.

For example, in the Tomato and Cucumber-houses heated by steam, the average loss of heat in the steam flow pipes in a distance of 60 feet was 4°, whilst in the return pipes near the boiler it averaged 75°.

In the hot-water house it was found that the water left the boiler at an average temperature of 155°, and came back at an average temperature of 122° by the upper return, and 111° by the lower return.

There was an average loss of 13° in passing the 20 feet of the length of the house. The water lost altogether 25°, as compared with 4° to 10° by steam. This shows the superiority of steam for long-distance heating and for bottom-heat purposes.

The proportion of coal consumed in these experiments was as hotwater: steam :: 1: 1.27. But as the houses heated by steam measured about 2500 square feet of surface, and the hot-water heated houses about 1700 square feet, this shows a consumption of about 15 per cent. more coal per 100 square feet of surface heated by the hot-water boiler than by the steam boiler. The general deduction from these experiments was,

that for crooked circuits and long ranges, steam is better than water.

From what we know of the working and management of steam-heating apparatus in a large way, it is necessary to have the best quality of cast-iron piping, which must be at least double the thickness of ordinary hot-water piping, and the joints must be flanged and fastened together with bolts, and furnished with vulcanised india-rubber rings, to prevent the escape of steam. They must have accurately-fitted (turned) expansion pipes placed every 20 or 30 yards apart, to make the apparatus safe; and the boiler must have constant attention the whole time it is in use, a watch being always kept on the pressure-indicator. Another matter which calls for constant attendance is the fact, that it is neither desirable nor safe that steam should be always passing into the pipes. The usual practice is to let in steam for a time, sufficient to highly heat the pipes, and then turn it off, check the fire draught, and let the steam that is then made escape into a condenser or up the chimney shaft until the thermometer in the houses shows that it is necessary to let in more steam. In very cold weather steam has to be let into the pipes at short intervals; and perhaps in very cold climates, as that of the northern United States, steam would have to be constantly made during the night, but during the bright sunny days of that country, even in mid-winter, it would be but little needed about the middle of the day, except in forcing-houses. This would, of course, entail steam being made in a large boiler, to heat, we will say, but a fraction of the whole, although where all the houses had to be kept at high temperatures, that kind of expense would naturally be anticipated.

Usually, when the pressures employed are low, the diameter of the pipes may range from 4½ to 5 inches, but the larger the diameter, the larger must be the steam capacity of the boiler. Even for a small house, the large amount of heat afforded by pipes of large diameter is preferable to the higher pressure and strong dry heat entailed by the use of small malleable iron pipes. For large establishments steam is preferable to water even here, but it should always be controlled and looked after by a skilled engineer, and he should always be provided with a mate.

We cite the general conclusions at which Mr. CARD arrives, which are true under these conditions, although some of them may not be true universally:—

1. The temperatures of steam-pipes averaged higher than those of hot-water pipes, throughout the entire circuit for the entire period of test.

2. The higher the inside temperature in steam-pipes the less is the proportionate warming-power of the pipes at a given point. The heat is distributed over a greater length of pipe, and as steam is ordinarily carried at a higher temperature than hot-water, it has a distinct advantage for heating long runs.

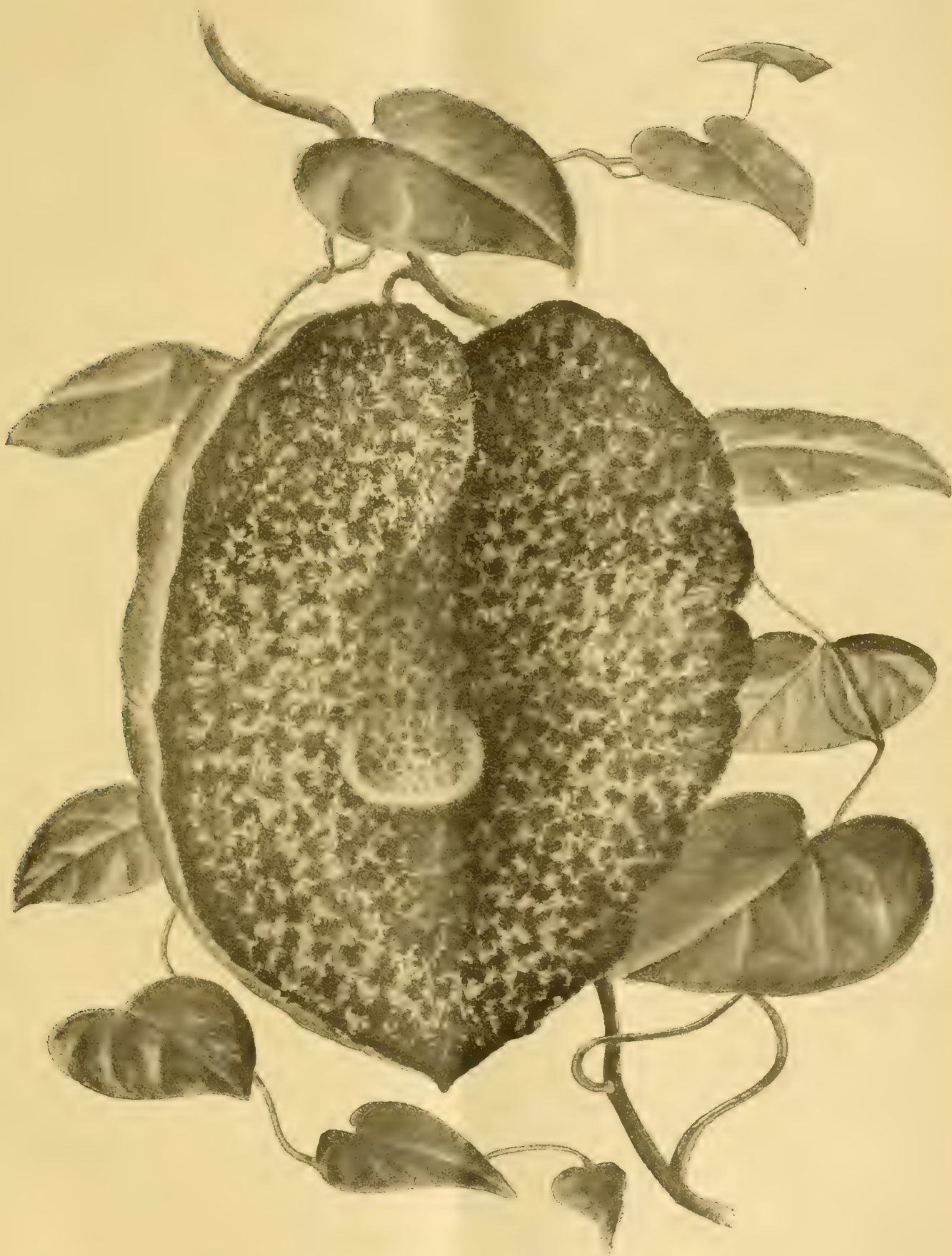
3. When no pressure is indicated by the steam-gauge, the difference between the temperatures of the riser and the return, is greater with steam than with hot-water.

4. Under pressure, the difference is less with steam than with hot-water.

5. There is less loss of heat in the steam risers (flow-pipes) than in the hot-water risers, and this means that more heat, in the steam system, is carried to the farther end of the house, and more is spent in the returns as bottom-heat.

6. This relation is more uniform in the steam-risers than in the hot-water risers, giving much more even results with steam than with hot water.

7. When the fires are operative, the fluctuation in the temperature of the risers at any given point is much greater with hot water than with steam.



ARISTOLOCHIA GIGANTEA (MARTIUS).

Reduced one-half. Colour: cream coloured, with purple spots.

8. An increase in steam-pressure raises the temperature of the entire circuit, but the temperature does not rise uniformly with the pressure.

9. The first application of the pressure increases the temperature of the returns much more than that of the risers.

10. Steam is better than hot water for long and crooked circuits.

11. Pressure is of great utility in increasing the rapidity of circulation of steam, and in forcing it through long circuits and over obstacles.

12. Unfavourable conditions can be more readily overcome with steam than with hot water.

13. Hot water consumed more coal than steam, and was at the same time less efficient. This result would probably be modified in a shorter and straighter circuit, with greater fall.

14. Under the conditions here present, steam is more economical than hot water, and more satisfactory in every way; and this result is not modified to any extent by the style of heaters used."

Incidentally, we may note the fact that the report which has formed the subject of the foregoing comments is of itself founded upon a 'thesis prepared for a bachelor's degree by Mr. F. W. CARD, who is at present a Fellow in Horticulture.' Imagine a student of Oxford, Cambridge, or even London, writing a thesis on steam-boilers for a degree in horticulture.

Our American friends are a long way ahead of us in these matters, and whilst we gardeners are moaning over a low rate of wages, overabundant supply of gardeners, and inadequate social status, the Americans are extending the bounds of horticultural science, supplying a more thorough education, recognising talent by means of university degrees, and thus while raising the whole standard of efficiency, are elevating the gardener to the position he ought to occupy.

*Aristolochia
gigantea.*

M. L. LINDEN, of the "Horticulture Internationale" of Brussels, has favoured us with dried specimens and an India-ink drawing of an *Aristolochia*, which may well form a pair with the extraordinary *A. gigas*, figured by us at p. 552, November 7, 1891. We had no difficulty in identifying M. LINDEN's plant with the *Aristolochia gigantea* of MARTIUS and ZUCCARINI.* It is a glabrous climber, with cordate, ovate, acuminate, or somewhat rounded leaves, paler on the under surface, with the distended flower-tube sharply bent back in the middle, and expanded above into a vast oval, mucronate limb, measuring in the dried specimen before us 12 inches in length, 8 inches in breadth (30 cm. long. by 21 cm. lat.), cordate on one side, with two rounded lobes and pointed on the other side. The perianth is destitute of the long tail, which forms so striking a feature in *A. gigas*. We have not seen fresh flowers, but the colour appears to be cream-coloured, flushed with pink on the outside, and thickly spotted with purplish-brown spots on the inner surface, the throat surrounded by a blotch of velvety-blackish purple colour. The plant is found in the Brazilian provinces of Bahia and Minas Geraes.

It is unfortunate that the two species, so much alike in other particulars, should also have names which entail constant confusion, but this cannot now be helped. It may serve to assist the memory to remind the reader that the giant *Aristolochia* (*A. gigas*) has a tail, while the gigantic one (*A. gigantea*) has no such appendage.

A. grandiflora, as pointed out by Mr. HEMSLEY in our columns, November 7, 1891, p. 552, is

* *Aristolochia gigantea*, Martius and Zuccarini, *Nov. Gen. et Sp.*, i. 75, t. 48; Duchartre, in *De Cand. Prodr.*, xv., i. 474; Masters, in *Martius Flora Brasiliensis (Aristolochiaceae)*, p. 89.

another large-flowered form from the West Indies, but its flowers, large though they are, are small by comparison either with the "giant" or with the "gigantic" *Aristolochia*.

Reverting to the giant form at Kew, we note that this is now known as *A. gigas* var. *Sturtevanti*, the approximate dimensions of the perianth being no smaller than 18 inches in width, 22 inches in length, with a tail 34 inches long. One figured in *Garden and Forest* had a flower 12 by 18 inches, and a tail 42 inches long, though the plant now flowering at Kew was originally a cutting from that described and figured in *Garden and Forest*, so that the dimensions of the flower vary within rather wide limits. Mr. WATSON says in the publication just cited that *A. gigas* *Sturtevanti* is readily increased by cuttings from the half-ripened wood.

Other large-flowered species are *A. brasiliensis*, the one most frequently grown; *A. ornithocephala*, *A. hians*, *A. Goldiana*, figured in *Gard. Chron.*, 1867, p. 1143; *A. triandata*, and *A. longicaudata* (Mast., in *Gard. Chron.*, Nov. 1, 1890, fig. 98, p. 493), and especially *A. promissa* (Mast., in *Gard. Chron.*, April 19, 1879, p. 494), which is or was in the hands of Messrs. VEITCH. Of smaller forms, there are the beautiful *A. elegans*, introduced by Mr. BULL; *A. ridicula*, *A. Duchartrei*, and *A. clypeata*, all of which are worth growing.

NICOTIANA TOMENTOSA, RUIZ et PAVON.—

Under this name Sir JOSEPH HOOKER mentions and figures the noble *Nicotiana* introduced into France in 1888 under the name of *N. colossea* (see *Gardeners' Chronicle*, Jan. 17, 1891, p. 84, f. 25; *Revue Horticole*, 1888, p. 511, and 1891, pp. 75 and 290). It appears that the plant was raised from the dust and debris taken from some Orchids imported from Brazil. At Kew it speedily attained a height of 10 feet under glass, and would have grown still taller but for the necessity of topping it. It flowered in April of the present year, the flowers being borne on a loose much-branched panicle. Each flower is about 1½ inch long, pale yellow, flushed with red, and with a tubular five-parted calyx and curved funnel-shaped corolla, with a spreading five-parted limb. The species is a native of Peru, Bolivia, and New Granada. At Saratò, at a height of 8500 feet, it occurs everywhere in hedges. Sir JOSEPH does not mention its occurrence in Brazil. *Bot. Mag.*, t. 7252.

STEMONA CURTISII.—This is not a plant to excite much enthusiasm in the average horticulturist, but to those of a botanical turn of mind it is very interesting. It is a climbing plant, with leaves like those of a *Dioscorea*, but with red flowers an inch or so in length, arranged in stalked axillary panicles. It is a native of Penang, whence it was sent to Kew by Mr. CURTIS. It belongs to the natural order *Roxburghiaceae*. The drawing shows a perianth of four rose-coloured segments, anthers with long terminal appendages, and a one-celled ovary, with basal or free central placentation.

ABERDEEN PUBLIC PARK.—At a meeting of the Links and Parks Committee of the Aberdeen Town Council on Friday, 9th inst., it was agreed on the motion of the convener, to increase the salaries of Mr. WALKER, head gardener of the Victoria Park, and Mr. HARPER, head gardener of the Duthie Park, to £130 per annum. The estimated expenditure for the upkeep of the Aberdeen public parks for the current year has been fixed at £2160, showing an increase of £278 compared with last year.

A CASE OF POSITIVE GEOTROPISM.—In a *Cliveia nobilis* (*Agaveæ*), Herr J. WIESNER has recently recognised what he regards as the first recorded instance of positive geotropism in a flower. The flower appears to be quite regular in the bud, but when fully developed it is monosymmetrical. The movements dependent on growth are very complicated, the principal part being played by a form

of nutation which is not distinguishable from positive geotropism. For further details, consult the *Berichte Deutsch. Bot. Gesellschaft*, v. x. (1892), p. 12

ROYAL HORTICULTURAL SOCIETY.—On Tuesday, September 20, 1892, a flower show will be held in the Drill Hall, James Street, Westminster, when, also, a paper on "The Variation of some Hardy Plants under Cultivation," by the Rev. C. WOLLEY DOD, will be read, at 3 P.M.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual dinner of this Society, as Mr. W. COLLINS, the Secretary, informs us, will take place on Wednesday, October 5, at 6 P.M., at the Cannon Street Hotel; and JOHN FRASER, Esq., of Lea Bridge, will preside.

NOVA SCOTIA: THE APPLE CROP.—The prospect of the fruit grower, according to the Government Crop Report, is not very bright. In districts where fruit is grown for home supply, there appears to be an expectation of nearly an average crop. The two principal counties that send fruit into the general markets are King's and Annapolis. The following summary of their returns are not very promising:—Co. Annapolis: Paradise. Great growth of wood; fruit dropping. Lawrencetown. Below average in quantity and quality. Spa Springs. Average crop. Granville Centre. 85 per cent. of a full crop. Round Hill. Below an average crop.

GHEENT "QUINQUENNIAL."—We have received a copy of the programme of the great exhibition to be held at Ghent next spring. The exhibition will be open from April 16 to 23, 1893, and will, as usual, take place under the auspices of the Royal Agricultural and Botanical Society of Ghent. Amateur and professional horticulturists of all countries are invited to compete, but must give full notice of their intention to do so before March 20. The jury, chosen amongst horticulturists of various nationalities and unconnected with the town of Ghent, will meet on Saturday, April 15, 1893, at 10 A.M. The programme comprises no fewer than 660 classes, including new plants, Orchids, stove plants, Aroids, Palms, Cycads, Ferns, forced shrubs, bulbs, Azaleas, Camellias, Rhododendrons, Agaves, Conifers, and many others. Specimens suitable for botanical instruction, are asked for as well as illustrations of the effects of various manures on the growth of plants, of auto-fecundation, and of cross-breeding respectively, microscopic preparations, myrmecophile plants, plants from the Congo, photographs representing the natural vegetation of different countries, &c. Medals of gold, silver-gilt, and silver, are offered in profusion by the King and Queen, as well as by various societies and individuals. Altogether, the show promises to be of colossal magnitude, and what is much more desirable, of great interest and educational value. The president is the genial and learned Count OSWALD DE KERCHOVE DE DENTERGHEM; the Secretary is M. A. L. ROSSEEL.

CERTIFICATES AT CHISWICK.—Some rather curious questions have turned up as to the powers exercised by the experts appointed by the Royal Horticultural Society to adjudicate upon the merits of the objects exhibited at the ordinary committee meetings in the Drill Hall and at Chiswick respectively. In order that the reader may more readily comprehend the position of affairs, we append a letter of a correspondent:—"What must be regarded as a somewhat novel point of procedure, cropped up at the recent meeting of the Royal Horticultural Society's Fruit Committee. That body, in common with the Floral Committee, is occasionally convened to meet at Chiswick, for the purpose of going over the various flowers, fruits, and vegetables grown there. With the exception that the meetings are held at Chiswick instead of at the Drill Hall, there is no difference in them from the ordinary or fixed meetings. Both are statutory, but the Chiswick meetings cannot be held on fixed dates, as they must of necessity depend upon the times when the various products are at their best. The committees seem so far to have

been under the impression that when they are summoned to Chiswick, they meet armed with the same powers they possess when they meet at the Drill Hall, and have regarded the granting of the highest number of marks to anything at Chiswick as equivalent to Certificates of Merit. That illusion has been dispelled. When at the recent Drill Hall meetings, a dish of a fine new Pea, Veitch's Success, was placed on the table for Certificate by Mr. WYTHES, it was said at once this Pea has been grown at Chiswick, and already had a Certificate, or its equivalent, awarded. To that it was replied, 'No, the committees have no power to grant such Certificates at Chiswick,' and as may be seen by a paragraph in the present year's schedule and programme of arrangements, can only give marks, anything so honoured having to be presented at a subsequent meeting of the committee at the Drill Hall. As that is the dictum of the Council, there was no course open but to grant the Certificate to the Pea, which is a highly meritorious variety; but the strange complications which this sort of thing presents were well evidenced in this case. The Pea was put into commerce by the Messrs. VEITCH. It was sent to Chiswick by Messrs. BARR & SONS, and the Certificate was after all granted to Mr. WYTHES, who had nothing to do with sending the variety to Chiswick. It is thus seen that after one person or firm has sent products to Chiswick for trial, and which there receive a maximum number of marks, it is open to some other person to send samples of the same thing to the Drill Hall, and thus claim the full honour of a Certificate. That certainly could never have been the desire of the Council. The committees naturally hold that being summoned to Chiswick, those attending should be armed with the same powers there that they have at the Drill Hall. That power is denied them. What is to be done? The going to Chiswick usually entails on the members very considerable loss of time, some inconvenience and expense, and under existing arrangements they will hardly care to go there so often as before. I have never seen any regulations as to the numbers needful to form quorums. It is now suggested that each committee shall elect from its body, a Chiswick sub-committee, whose duty for the year it shall be when summoned to Chiswick, to grant marks to certain products, and present a report at the ensuing fixed meeting for adoption, which shall sanction the granting of Certificates to all subjects receiving three marks if not previously certificated. That may solve the difficulty if adopted. It is obvious that persons residing at remote distances cannot send easily samples of these products to the next meeting, and they would be very unjustly handicapped, and such conditions should be withdrawn. If it be agreed that accepting the reports of the sub-committee grants the Certificate, that will solve the difficulty." The above letter raises some important points. In our opinion, the value that attaches to the Chiswick marks is undeniably greater than that pertaining to a certificate awarded at the Drill Hall, and, *pro tanto*, the powers and status of the judges is, or should be, higher. At the ordinary meetings of the committee, the fruit, flower, vegetable, or whatever it may be, is seen only once; judgment, moreover, is in all probability given on a selected sample. It is not likely that the exhibitor would send any but the best specimens he had, and it is possible, for aught the committee know to the contrary, that the bulk of the crop is far inferior to the selected sample shown. At Chiswick it is otherwise; there, the plant is under observation for the whole season; generally a considerable quantity is grown—grown, too, side by side with other varieties of a similar character, so that comparison can readily be made—a comparison rarely possible at the Drill Hall. What we should suggest is, that the committees or sub-committees meet at Chiswick from time to time as they do now; they should record *each time* the judgment they come to on any particular subject; and that at the end of the season they should review the whole of the evidence thus recorded, and then, and not till then, should a Certificate be granted. In this way a "Chiswick

Certificate" would have a value in the eyes of the experts above that attaching to ordinary First-class Certificates, and, we need hardly say greatly exceeding that of the Certificates and prizes, awarded at those shows (and they are the majority) where the awarding of prizes is the predominant object, and prize-winning rather than the advancement of horticulture the most important matter in the eyes of the exhibitor.

STOCK-TAKING: AUGUST.—In the present most unsatisfactory condition of things all over the European continent, in South America, and elsewhere, it is very satisfactory to note that the decline in our exports for the past month amounts in value to only £619,159, as compared with the same period last year; and that the imports exceed those of the same period by some £2,098,086. Prices of food keep low, Wheat being about 29s. per qr. (the reason why, perhaps, the baker and the miller "make hay"; i.e., Wheat having fallen over one-fourth in value, bread is reduced in price one-fourteenth!), tea, cotton, wool have still a downward tendency; so that the manufacturer has a fair inducement to keep at work, though doubtless the speculative merchant has a hard time of it—in fact, it is the masses generally who have the turn just now, and if they have not what may be termed a superabundance of work, they have cheap food and clothing, important factors in the maintenance of health, so sadly wanting in the vast empire of Russia, where famine preceded disease and death. The subjoined table is extracted from the Summary of the imports of foreign and colonial produce in August:—

IMPORTS.	1891.	1892.	Difference.
	£.	£.	£.
Total value for month	£32,746,279	£34,844,365	+2,098,086
§II.—(A.) Articles of food and drink—duty free ...	11,799,508	14,043,683	+2,244,175
(B.)—do., dutiable	2,113,185	2,017,894	-95,291
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	2,957,157	2,970,521	-13,364
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,436,652	4,621,154	+184,502
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,122,179	1,056,808	-65,371
(B.)—Parcel Post ...	38,761	45,640	+6,879

The subjoined figures relating to the imports of fruits and vegetables will this month be found of special interest to the reader, the "unenumerated"—the unknown—having to a great extent been abolished by the items concerning Plums, Pears, Cherries, and Grapes:—

IMPORTS.	1891.	1892.	Difference.
Fruits, raw:—			
Apples ... bush.	116,763	339,281	+222,518
Cherries ... ..	...	31,356	+31,356
Plums ... ..	...	226,077	+226,077
Pears ... ..	...	272,152	+272,152
Grapes ... ..	...	174,928	+174,928
Unenumerated, ..	975,137	164,582	-810,555
Onions	261,009	355,855	+94,846
Potatoes ... cwt.	41,716	75,590	+34,234
Vegetables, unenumerated, raw, .. value	£108,928	£143,736	+£34,808

Here it may be noted that Macclesfield—or, rather, its principal industry, the silk manufacture—requires a fillip, or, perhaps, reorganisation; but that is not for us in these pages. However, this reminds us that the Sublime Porte gives promise of being extra sublime in the matter of encouraging the planting and growth of the Mulberry tree, Turkey is very much in need of a

push in the industrial line, and there is every reason to believe that an extended cultivation of the Mulberry would be exceedingly beneficial to the silk trade—hence the Porte has decided to give medals of various degrees of value (gold and silver) to such as excel in the business above noted. We wish the effort all success, as it will tend to lower the chances of the monopoliser. Still, on the subject of silk, the reader may remember hearing some year or two since about an invention brought out in France for "abolishing the silkworm." The inventor proposed from wood-pulp to turn out silk as one would printing paper now-a-days—literally by the mile! The thing fell through, however, and remained quiet until recently, when it was resuscitated, on the strength of the declaration that all difficulties had been overcome and only capital was needed. This has been formed, we understand, entirely by Frenchmen, and from St. Etienne we are instructed the world will be supplied with materials, both raw and manufactured! Possibly the worm may outlive this invention, as the old whale had survived the introduction of gas as a substitute for whale-oil.*

EXPORTS.

As we briefly noticed, these have been almost arrested in their decline—the decrease for the past month being but £619,159 as compared with August, 1891. Doubtless the fear of finding ports closed expedited delivery in very many cases—but we are content to take the fact as it stands, and to hope that we have reached low-water mark.

A HINT FOR COLLECTORS.—A writer in the *Orchidophile* very properly lays great stress on the desirability of collectors drying carefully specimens of the plants they meet with, and of sending them home duly numbered, with indications of the locality where found. Such specimens would serve as guides to the Orchid importer and collector of the future. At present, very probably, the plants arrive dead, and the collector too may often die at his work; the consequence is, his labours are lost to the world, while a single dried specimen with an indication of its habitat would, so far as the plant was concerned, render even such a disaster repairable. The writer further recommends the collector to establish himself in some likely district, and to make himself fully acquainted with its flora before attempting to send home living specimens. He should wait before so doing till the dried specimens have been examined at home, when he could receive exact instructions as to what living specimens should be collected, packed, and sent home.

FLOWERS IN SEASON.—We have before us some beautiful varieties of Violas, sent by Messrs. DOBBIE & Co., Rothesay, N.B., and Beaulieu, Hants. There is much variety in the colours, and, for the most part, they are selfs. Rothes is an orange-yellow self; Rob Roy, a twice certificated variety, is orange and bronze; Peter Barr is light reddish-purple, with a yellow circular centre, very nice; W. Neil is deep lilac, quite a novel shade; Ravenswood, as befits its name, is an intensely dark purple; Edna is purple and violet; Prince of Orange (new) is deeper in tint than Rothes; Violetta is pure white, save for the faintest shade of blue on the back of the petals; York and Lancaster is not red and white, as in Rosa, but purple, with radiating lines or flakes of white; and Annie King is of the hue of a Neapolitan Violet. These Violas make capital bed and marginal lines, ground-work for taller plants, filling for spring vases, and many other uses.

A PEAR—A PAIR—AND NOT A PEAR.—M. PYNÆRT sends us a "proliferous Pear," showing one Pear growing out of another—and yet there is no Pear. The lower "fruit" is merely a thickened flower-stalk, bearing a calyx at its summit, and from the centre of which projects a second branch like unto the first. There is no core, and no seeds in either. Botanists will appreciate the significance of this monstrosity—pomologists will look askance at it.

* The invention has not been secured by letters patent—its details are kept secret; but an expert has stated his belief that the leaf of the Mulberry is the principal constituent of the "wood pulp."

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.

—The Floral Committee of this Society on the occasion of its meetings on August 10 and 24, awarded the following First-class Certificates:—To Messrs. E. H. Krelage & Son, Haarlem, for *Gladiolus* hybr. *Nanceianus*, G. A. de la Devansaye, G. W. Watson, G. Professor Lambin, G. Rosamunda, G. Président Chandon, and G. A. Van der Heed; G. hybr. *Lemoinei*, G. J. H. Krelage, G. la France, G. Nués bleu, G. Charles Joly, G. Toison d'Or, G. Telemaque, G. Amiral Gewais, G. Keteleer, G. Vercingetoise, G. Crozy fils, G. l'Esperance, G. Vondel, Nos. 144, 145, 94, and 148. To Mr. J. C. De Lange, Rotterdam, for *Cactus* *Dahlia* Black Prince (new introduction), *Canna* hybr. *Viruly* Verbrugge (new plant); to Mr. Jac. Smits, Naarden, for *Rosa indica* (Thea), R. Papa Gontier (insufficiently-known plant); to Mr. C. G. Van Tubergen, jun., Haarlem, for *Crinum* *Powellii* album (introduced new plant), *Achimenes* *Phœbus* (new plant); to Messrs. Groenewegen & Co., Amsterdam, for *Fuchsia* *Beauty of Exeter* (new plant), *Reseda* *odorata* var. *alba* (new plant), *Centaurea* *cyanus* fl. pleno; to Messrs. De Graaff Brothers, Leiden, for *Delphinium* *sulphureum* (insufficiently-known plant); to Mr. J. Th. Van Den Berg, jun., Jutfaas, for *Gladiolus* hybr. *Nanceianus* No. 121. Second-class Certificates were awarded as follows:—To Messrs. E. H. Krelage & Son, Haarlem, for *Gladiolus* hybr. *Lemoinei*, G. Sophie Buchner, G. Perfection, Nos. 127 and 171; *Montbretia* *crocosmæflora* B.B.; to Mr. J. Th. Van Den Berg, jun., Jutfaas, for *Gladiolus* hybr. *Lemoinei*; to Mr. C. Kuiper, Apeldoorn, for *Fuchsia* hybr. (*Phénomène* × *Frau Emma Töpfer*); to Mr. J. C. De Lange, Rotterdam, for *Dianthus* *Caryophyllus* *Madame Stepman* (new introduction), *Canna* hybr. No. 4 (new plant); to Messrs. Groenewegen & Co., Amsterdam, for *Phalaris* *arundinacea* aur. var. (new plant), *Achillea* *fipendulina* (insufficiently-known plant), *Gaillardia* *maxima* (insufficiently-known plant), *Helenium* *pumilum* (insufficiently-known plant), *Helianthus* *multiflorus* *grandiplenus* (new plant), *H. rigidus* (new plant); to Mr. C. G. Van Tubergen, jun., Haarlem, for *Lilium* *Wallacei*, Botanical Certificate to Mr. C. G. Van Tubergen, jun., Haarlem, for *Calochortus* *Bonplandianus*, *C. flavus*.

PEDIGREE ONIONS.—The usual annual display and competition of Mr. DEVERILL'S Onions, which have been grown in different parts of the United Kingdom, may be seen at their nursery, Cornhill, Banbury, on Thursday and Friday next, September 15 and 16. The total number of entries amount to 90, and the specimens to 1264.

A FROZEN CHRYSANTHEMUM AT IPSWICH.

—One of the visitors present at the Royal Aquarium when the frozen *Chrysanthemums* were examined was Mr. E. HERBERT FISON, of Ipswich, one of the Directors of the Bank of New Zealand in the City. At his urgent request, one of the flowers in its frozen cylinder of ice was presented to him, and taken to Ipswich, and on the next day publicly exhibited at the museum, and visited by about 1000 persons. A public address relative to the experiment was delivered by Dr. TAYLOR, and on the motion of Mr. E. H. FISON a vote of thanks was passed to Mr. JOHN EARLAND of New Zealand for sending the flowers so far, and in such good condition.

KEW.—Of late years, the importance of Kew as a school of horticulture has been enhanced. We here use the word "school" in the same sense that our Continental friends do to signify an example or demonstration. To collect and grow a large number of plants, arranged in botanical sequence, and in gridiron beds, is the function of a botanic garden proper. To arrange them picturesquely, and to demonstrate their fitness for the various phases of decorative gardening, as is done in the rock garden and elsewhere at Kew, is the office of the gardener. It is possible, in a measure, to combine the two requirements, as once was done in the Oxford Botanic Garden. The vast importance of Kew, from a botanical point of view, needs no

insistence. It is this which has raised it above all similar institutions. The general public and the average gardener are, nevertheless, more likely to be attracted by the horticultural aspects of the place, and from this point of view we would counsel all who can do so to lose no time in seeing the re-constructed herbaceous border by the side of the T-range. It is at this time and will be till the frost comes, a mass of bloom. The plants are grown in dense masses, not tied or throttled by stakes; or when such aids are necessary, they are concealed by the vigorous growth of the plants. Tall perennials at the back, those of moderate growth in the centre; and in the foreground dwarfs and annuals, standard *Fuchsias* intermixed here and there among *Phloxes*, *Dahlias*, *Helianthus*, *Tritomas*, *Rudbeckias*, *Asters*, *African Marigolds*, *Antirrhinums*, *Senecio elegans*, *Begonias*, *Dianthus* *Heddewigii*, *Stocks*, *Verbena venosa*. These are only a few of the things that occur to us in the veritable floral patchwork. Herbaceous borders are too often weedy muddles, or disfigured by unhappy plants tied to the stake, with bare patches of soil between the victims. All this is avoided at Kew, and we have no doubt from the experience gained this season the arrangement of colours will be even better next year. Whether the position in proximity to a building is the best that could have been selected, is a matter of opinion. We have seen such beds, and even beds of annuals, placed on the terrace gardens, in proximity to buildings of some architectural pretensions; but such collocation is incongruous. In our opinion, the best of all backgrounds for an herbaceous border is a sinuous belt of evergreen shrubs—but these are matters of taste.

MISS JAMESON.—We have to acknowledge the receipt of the following sums on behalf of this unfortunate lady:—

W. Carruthers, Esq., F.R.S.	...	...	£1	1	0
James Britten, Esq.	...	...	0	10	6
Geo. Murray, Esq.	...	...	0	10	6

in addition to the sum previously mentioned. There must be many Scotch friends of the late Professor JAMESON who would, we imagine, be glad to contribute to the fund.

FRUIT IMPORTS INTO GERMANY.—We glean from *Moller's Deutsche Gärtner Zeitung*, that the imports of fresh and dried fruits are as much a matter for lamentation as on this side of the water. The requirements in these articles is not adequately met by the home producer, and efforts are likely to be soon put forth to rectify what is regarded as a loss of money to the country. In fresh fruits Austria-Hungary heads the list with 379,928 metrical cwt., that is of 100 kilogs. each; then follows Switzerland with 108,710 metrical cwt.; the Netherlands with 40,478 metrical cwt.; Belgium with 22,775 metrical cwt.; and Italy with 19,724 metrical cwt., of which the greater part consists of early Cherries, Oranges, and Nuts. In recent years dessert Apples have reached the country from America in no small quantities. In dried and preserved fruits, Austria leads the way with 168,661 m. cwt.; Serbia following with 27,151 m. cwt. These two countries supply in great part the German requirements in dried Zwetschen (Plums, Prunes). The other countries which supply these dried products are:—America, with Apples; France, with Prunes; the Netherlands, Belgium, and Italy. The imports from Austria, Serbia, America, and Belgium, are constantly increasing.

THE FLORISTS AT WASHINGTON.—The annual meeting of the Society of American Florists at the national capital was, says *Garden and Forest*, more numerously attended than any which preceded it. The report showed that the membership of the Society had increased during the year, and its influence extended in every direction. Mr. WILLIAM R. SMITH, Superintendent of the Botanic Garden in Washington, was elected President for the ensuing year, and Professor TRELEASE, of St. Louis, was made Vice-President, and St. Louis was chosen as the place of meeting for next year. Mr. JOHN

THORPE, the Chief of Floriculture of the Columbian Fair, announced that all the floor-space of the great horticultural building had been already taken up, and that exhibitors from abroad had shown a greater interest than the florists at home, and had already applied for more than half of the space to be disposed of. The trade exhibit was particularly good, and filled the large lower hall of the Armoury, where the Convention was held. Excellent displays of Orchids and other choice plants were made by Messrs. PITCHER & MANDA, of Short Hills, New Jersey, and by Mr. H. A. DREER, of Philadelphia. The display of tuberous *Begonias* by Mr. J. W. ELLIOT, of Pittsburg, was noteworthy, and so was a collection of Cacti by a southern firm.

BOTANY AND HORTICULTURE.—Professor BAILEY makes an appeal in *Science* for a broader field for botany, which has become restricted until it is little more than the science of wild flowers. But now that the doctrine of evolution has added a new purpose to the study of natural objects, cultivated plants are especially valuable for the examples they give of variation, and of the effect of modified environment and selection. The common view that the variations in cultivated plants are anomalous, and therefore uninteresting, is erroneous. But apart from the fascinations which the cultivation of plants has in the direction of science, this cultivation demands the attention of botanists because horticulture ought to be nothing more than the application of the principles of botany. The fact is, that it is quite impossible to separate horticulture and botany by any practical test, and, therefore, a department of botany should comprise laboratories, botanic gardens, greenhouses, orchards, vegetable and ornamental gardens, all maintained for purposes of active investigation rather than as mere collections. Botanists too often care little for gardening, and horticulturists are too often apt to underrate the value of scientific investigation. No man who does not unite scientific knowledge and practical training can appreciate the needs of botany in its broadest sense. No one can be a specialist in all subjects, but the ideal occupant of a chair of botany in the university of the future will have the genius to encourage and direct the work of specialists in every direction, and not until then can the science be actively presented to the student in its fullest possibilities, says *Garden and Forest*.

ROSE EXHIBITION AT THE HAGUE.—In July next year there will be a special Rose exhibition at the Hague in honour of the little Queen of the NETHERLANDS.

OBSERVATIONS ON SUNFLOWERS.—Having discovered that the leaves of the Sunflower, *Helianthus annuus*, are visited by nearly twenty different species of insects, and that some of them, especially the ants (*Myrmica lœvinodis* and *Lasius niger*), suck the leaves, Gordyaghin was led to suspect the existence of "extra-nuptial" nectarine. Accordingly, a series of experiments were carried out, to ascertain whether drops of nectar do appear on the leaves, and the observations made have confirmed the supposition. An account of these observations is given in a recent issue of the *Memoirs of the Kazan Society of Naturalists*, vol. xxiii.

INSECTICIDES.—We understand that, at the trials of insecticides which took place on the 5th inst., at the International Horticultural Exhibition at Earl's Court, Messrs. CLIBBON & SON, Oldfield Nurseries, Altrincham, gained the highest award for CAMPBELL'S Fumigating Insecticide, and a First-class Certificate for CAMPBELL'S "Lemon Oil," a well-known preparation for the extirpation of plant insect enemies.

THE NITRIFICATION OF HUMUS.—Humus, the black organic matter of soils, is not readily attacked, it seems, by nitrifying agents. Mons. P. PICHARD has found from a recent investigation of the subject that the nitrification is increased by the addition of chalk and gypsum, which hinder the volatilisation of

the ammonia. These are practical points which are worth making a note of. The gypsum, however, can only be used for dry porous soils. In spite of the slow nitrification of humus, the amount of nitrates formed in sandy soils, poor in lime compounds, would be enough for the needs of growing plants were it not for the washing action of the rain. Mons. PICHARD considers that in order to increase the amount of nitrification in rich humus soils, they should be treated with chalk, a small amount of gypsum, and a little clay, or manured with a compost mixed with gypsum and loam. A paper on this subject may be consulted in the *Comptes Rendus*, cxiv., pp. 490—493.

NEW DISCOVERIES OF ALKALOIDS IN PLANTS.—Chemists are very active just now in exploring the constituents of plants, and especially in searching for those alkaloids which, though for the most part of a highly poisonous character, promise to be of great use in medicine. Amongst the latest discoveries in this direction, we may notice that of glaucine, which has been obtained by J. A. BATTANDIER from the sap of the leaves of *Glacium luteum*; ephedrine from the root of *Ephedra monostachya*, by P. SPEHR, and from *Ephedra vulgaris* var. *helvetica* by NATAI of Tokio; lupanine from *Lupinus angustiflorus* by HAGEN, and by A. SOLDANI from *Lupinus albus*; aristine from *Aristolochia argentina*, by O. HESSE; aristolochine from *A. serpentaria*, by CHEVALLIER; pillipanine from *Lycopodium saururus*, by ARATA and CANZONEI. It will be noticed that most of these discoveries are by German chemists.

TUBEROUS BEGONIAS.—The display of these favourites for bedding-out and house-culture is still a very good one at Messrs. J. LAING & SONS, Stanstead Park Nursery, Forest Hill, S.E., as may be imagined, when we inform our readers that the space occupied by the beds exceeds 2½ acres. They are arranged in long beds containing thousands of plants, according to their colours. Here are yellows so closely resembling each other in hue that the effect seen in the mass, is that of one colour only, alongside may be crimson equally well selected as regards tint, height, and average good quality; then scarlet and various shades, pinks, and white, in the choicest variety. The firm is at present striving after a white-flowered variety that shall be purely white on both sides of the petals, and carry its flowers on an erect stalk, which will, if it be done, make an ideal subject for the flower gardener. One thing at a time is the motto of the firm, and it may be some few years before the aims of the hybridiser are fully realised with this and the other coloured tuberous Begonias. Some of the double-flowered varieties already have stiff stalks, carrying their flowers almost erect, and hopes are held that bedding doubles will take their places as bedders, especially those with erect habit of growth. The houses, filled with plants, in 4, 6, and 8-inch pots, contain some exquisitely coloured examples, with large flowers, both single and double. Should frosts hold off, this remarkable exhibition will remain good for a long time yet.

VIOLAS.

YOUR correspondent, "J. B.," in his notice of "Bedding at Kew," in the *Gardeners' Chronicle* of September 10, alludes to Violas, and instances Countess of Hopetoun as certainly the best white, and he is quite correct; but it not a pure white. It is of close compact habit, and a wonderful and continuous bloomer, and stands any weather. But as a taller grower, filling up larger space, and of a clear white colour, I mention Mrs. McDonald, a pure white, of good habit and constitution, and still in full bloom with me; also Marchioness of Tweeddale, snow-white. Ardwell Gem, is also mentioned as the best yellow. It is certainly an all-round excellent variety, but is of a pale yellow colour; so also is the Queen, another excellent pale yellow, still in full bloom. Bullion stands out prominently as an early and continuous bloomer, of a rich deep yellow

colour, but is not a strong grower, still it is excellent for front rows and small beds; and in "Yellow Boy," a variety known under this name in Birmingham, we have a stronger grower of fine constitution, a very free bloomer, early and continuous, and of a bright yellow colour. "J. B." also mentions True Blue as his foremost favourite blue. It is our best blue, and was raised seven or eight years since, is of close habit, good constitution, very early, free and continuous bloomer, and has more of the blue colour in it than any other Viola. As a taller and more robust grower, Ormonde, of Holyrood style, but a great improvement upon it, and without the bronze-brown blotch, is a valuable variety, of a rich blue-violet colour, and grand in masses or rows.

Mrs. Charles Turner is a dwarf compact-growing variety of a distinct blue-purple shade; a lovely variety in every way. In other colours, William Neil, soft rosy-pink; The Mearns, rich rosy-purple, with light top petals; and Lady Amory, dark violet-purple, with whitish top petals, are all beautiful and very effective. Evelyn, synonymous with Duchess of Albany, is still a mass of colour here, lilac, tinted lavender, or mauve, and lovely. One variety in particular I must single out as a gem amongst Violas for bedding work, and that is Mrs. Pearce. It is a good grower, of compact erect habit, and a most profuse bloomer; almost white, the top petals flushed with lilac—a true Viola, very early in bloom, and still (early in September) a mass of bloom. Violas this year are flourishing, and will be more in demand than ever.

Out of the host of varieties now in cultivation a large number can be selected as lovely garden plants, but for beds and masses of a colour a few bright and distinct colours only are wanted. In planting a bed of mixed Violas care should be taken to ascertain which are the freest and tallest growers, which should be in the interior of the bed. Some, such as Mrs. Grant, Sir Joseph Terry, Hugh Ainslie, and others, are of short compact habit, and should be in the front, and planted closer together than the others.

As an old grower, I strongly recommend early autumn planting in firm and not over-rich soil. I have seen a large number of late spring-planted Violas die off this year as well as in previous years, and for early prolonged blooming and durability of the plants, autumn planting, or, if in the spring not later than the middle of April, should be done. But with autumn planting, and with a mild spring, borders and beds are gay with Violas from the end of March onwards. W. Dean, Sparkhill, Birmingham.

HARDY PLANTS IN MR. BENARY'S NURSERY AT ERFURT.

ONE has no idea of the great beauty of many garden annuals until they are seen in large beds and borders cultivated to produce seeds—the common Cornflower, for instance, *Centaurea cyanus*, is not only pretty in the mass, but excellent as a decorative plant to produce cut flowers for vases, &c. The ordinary blue variety is the best, but rose colours of various shades, and white varieties are also produced from seeds. I noted a very pretty dwarf form planted in large beds, producing compact masses of bloom, the plants growing to an average height of 6 inches only, whereas, the ordinary form will grow 2 feet high or more.

There are some long beds fully in flower of *Brachycome iberidifolia*—the blue and white varieties in separate beds at some little distance from each other. This pretty plant is well-named the Swan River Daisy. It flowers most profusely in beds or borders, and as seen here in beds, 30 or 40 feet in length, the effect is very striking. It may be treated in England as a half-hardy annual, the seeds to be sown in a hot-bed in the spring, and to be first pricked-out in boxes, and ultimately planted-out in good soil. It can also be sown in the open border in April, and will then flower later than the planted-out lot.

Some large beds were filled with *Lobelia ramosa*, which had an excellent effect. The plants grow

from 1 foot to 15 inches in height, producing erect stems, well furnished with bright blue or pure white flowers, the varieties being kept in separate beds. This is a distinct garden plant, and should not be confounded with *L. fulgens*, to which species *L. ramosa* has sometimes been referred. As a garden plant, both forms of this *Lobelia* should be freely grown.

The common Larkspur (*Delphinium Ajacis*) seems more open to improvement under good culture than any other annual. Mr. Benary grows an immense number of them in colours. The demand for seed must be very great, if one may judge from the large number of plants grown here. Large quarters in the open fields are set apart for each colour; the best type seemed to be The Emperor Larkspur. The plants were tall, and furnished with immense branching spikes, the colours being of the most varied kind; there are pure white varieties, rose of various shades, blue and purple, from pale blue to rich deep purple-blue, carmine, tricolor varieties, &c.

The trade in Pansy seed is very large, and, as in the other classes of seed, much pains is taken to improve the stock. The system of the firm from the first has been to mark certain plants that produce flowers of superior form, substance of the petals, or distinct colours, and to mark them to produce seeds for home sowing. Large numbers of women were engaged picking the seed-pods from the Pansies before they burst and scatter the seeds. It is easy to judge of the trade in this particular flower when it is stated that the seed is sold by the hundred-weight. As some evidence of the fine climate in this part of Germany in the autumn, the Carnations are grown in the open fields to produce seed, the second and third quality only, the first quality being grown under glass in the home nursery. As an old Carnation grower, I was greatly interested in all the processes of seed-saving of these flowers. One would think that everybody would purchase first quality seed, the difference of even a shilling in the price of a packet being very unimportant in comparison to the trouble of growing plants for two years, or, at least, for two seasons, before the flowers are produced; and when it is known that the first quality is produced from named varieties grown under glass, and the second and third quality from seedlings in the open fields, it really does seem absurd to hesitate about the difference in price of the seeds.

Much care is taken with the second-quality seed. The seed is taken from a named or selected variety; a certain number of plants being raised from this seed are planted in a bed by themselves with the parent-plant in one corner; a large number of beds are planted, with a different seed parent in each, and it is very interesting to observe the variations from the same parent. This is to be expected, as each seed pod may have a different pollen parent; and the colour of the flowers seems to be more influenced by the pollen than by the seed parent. No single-flowered plants were to be seen amongst the seedlings, and the selfs, bizarres, flakes, and fancies were very distinct and pretty. From this class of plants the second-quality seed is saved, and a few of the best of them are layered and transferred to the first-class section for next season. The second-quality seed is sown to produce the third quality for next year; but no seed is saved from single varieties, indeed, none were to be seen in the seed grounds.

While dealing with the Carnations, it may be well to remark upon the method adopted to supply the first-quality seed. A photograph of the glass-covered erection put up to accommodate 18,000 plants, growing singly in 7-inch pots, was taken by Mr. Nigel M. Smith, and the woodcut (fig. 57) taken from this affords a better idea of it than could be done by any descriptive remarks. The arrangement is very simple and effective. There is a substantial wooden framework, span-roofed in form; the glass lights throw off the rains, the sides and ends are open to the weather. Such an array of plants, well-cultivated, in full blossom, form an excellent display, taken as a whole, and a minute examination of the flowers is a delightful experience to the Carnation fancier, who has long been accustomed to the flakes

bizarres, and Picotees of English gardens and Carnation exhibitions. The flower stems are fastened to neat sticks by rings an inch in diameter cut through at one point, the two cut ends of the rings being pressed into the sticks in opposite directions enclosing the stems. Three rings are needed for tall stems, two for shorter ones.

There does not appear to be in use in Germany any well-defined standard of excellence such as the florists have set up in England, to classify the colour and markings of the flowers. On the other hand, much importance is attached to their form. Those with broad smooth and well-formed outer petals, contained in a long shapely calyx, are preferred, while seedlings with a bunch of small petals, contained short calyces, likely to burst before the flowers open, are discarded in Germany, as they

as of "a fine bright pale red colour on the upper side, from the edge to the middle, which mixture is of wonderful great delight." This description might yet apply to some of Mr. Benary's seedlings; some of them are deep purple-red on the upper side, others of such a pale delicate rose colour, that it fades out before the petals decay, leaving a white self.

The culture of Carnations is but a small part of Mr. Benary's business. Choice stove and greenhouse soft-wooded plants are grown extensively for the production of seeds only. Several span-roofed houses are set apart for Gloxinias. One house was filled with a variety possessing rich scarlet flowers; another contained a variety named Emperor Friedrich, crimson-scarlet, with white margin. Defiance, a variety with dark velvety blue-purple flowers, occupied

Tuberous Begonias are also grown in houses set apart for them, and heated; the varieties, both single and double, are up to the average of our English sorts, but Mr. Benary, ever on the search for novelties and improved forms, has now obtained striped varieties, with flowers like a flaked Carnation. An entire large house is filled with the best named Fuchsias laden with flowers; but the object of their culture is the same—seeds! A very wonderful sight was a long lean-to pit filled with well-grown plants of *Lisianthus Russellianus*. This is a very beautiful greenhouse plant, and should be grown in every garden. It succeeds best treated as a biennial. The seeds should be sown in the summer, and the plants grown on through the winter in pots near the glass roof of a moderately warm house. The thing is to be careful with the water; it is better to water them from the bottom of the flower-pots upwards than from the surface soil downwards. When well managed, single plants will grow large enough to need an 8 or 9-inch pot, and the plants produce a mass of their deep mauve-purple flowers. It is discreditable to us that beautiful garden plants like this are uncommon in gardens merely because they require some pains to grow them well. A frame full of plants of *Statice Suwarowi superba*, and with it a mass of a beautiful grass, *Stipa elegantissima*, was a sight long to be remembered; the dense branched spikes of rose-coloured flowers upon the *Statice* were extremely beautiful, and such a contrast to the elegant plumes of the *Stipa*.

I have given a mere sketch of some of the principal features of this large establishment, and if any one idea was impressed on my mind more than another, it was the feeling that as much care and forethought was bestowed upon the smallest details of the work, and that nothing was left undone that would tend to improve the strains of plants grown to produce the seeds, which are distributed (wholesale only) by the firm to every country in the world where people have intelligence to sow seeds, and to cultivate the plants when they get them. *J. Douglas.*

HOME CORRESPONDENCE.

GEM LAWN SWEEPER.—So many gardeners write asking me for particulars of the above machine, that I think it would be best if the makers were to advertise in the *Gardeners' Chronicle*, when, I am sure, orders would soon flow in. I am delighted with it, as when worked by a boy, it does more work, and cleaner, than six men could do with brooms. The machine is a combination of a carpet sweeper and lawn mower, and the price is very moderate. It is manufactured by Schaeffer & Co., of Dayton, O., America. Mr. Don, of Chapel Bar, Nottingham, who sent mine here on trial, is agent for the sale of it in this country. *J. Hamilton, Byrkley Gardens, Burton-on-Trent.*

THREE GOOD GREENHOUSE CLIMBERS.—In the well-kept and extensive corridor connecting the fine range of plant-houses at Falkland Park, Norwood, I observed recently, amongst many other good things, the now seldom-seen *Solanum jasminoides*, perfectly wreathed with its white flowers; the old and well-known *Ecceomocarpus scabra*, likewise flowering profusely; and clusters of *Heliotropium corymbosum*, emitting a pleasing fragrance, that pervaded the whole structure. *J. B.*

FOXGLOVES.—For certain positions, such as the wild garden, shrubbery, borders, or sides of woodland walks, there is nothing in flowering plants better than the Foxgloves, which are not only bold and showy, but they seem to thrive almost anywhere, for whether under the shade of trees, or out in the open, they do almost equally well, and make a display for several weeks in succession. Like nearly every other species of hardy plant, the Foxglove has been very much improved of late years, and the variety known as *D. gloxinoides* has very large blossoms, the bells being long and widely distended, and some are beautifully spotted or marked in the throat. Besides the adaptability of the *Digitalis* for the places referred to, and their exceedingly effective appearance when so situated, they give no trouble after they are once started and established, for, though considered as biennials, they are so free seeding, and so tenacious

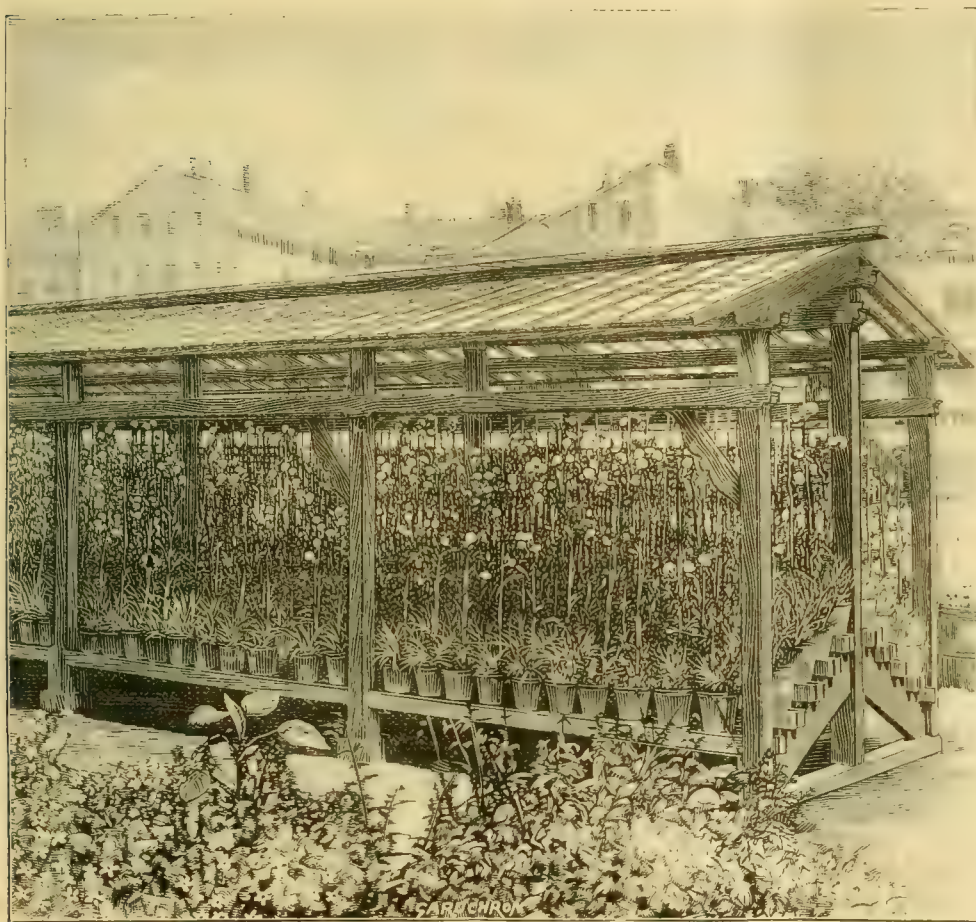


FIG. 57.—SHELTER FOR SEEDING CARNATIONS IN MR. BENARY'S NURSERY, ERFURT.
(From a photograph by Mr. NIGEL SMITH.)

ought to be in England. Although the main object of growing the plants is to obtain seeds, Mr. Benary supplies plants, and it may be useful to observe that a grower in England would certainly be disappointed if he applied for flakes and bizarres, expecting to be supplied with types known as such in England. If flakes are wanted, "ribbon" Carnations must be asked for. The yellow ground varieties with red markings or flakes of colour, which in England are termed fancies, are sold in Germany as flakes. The varieties grown are very numerous in every shade of colour, plain selfs of all colours, yellow, red, rose, crimson, scarlet, purple, maroon, white, &c. Flakes and stripes of every colour on white and yellow grounds. Picotees, white and yellow-edged, with many colours, light and heavy; and last but not least, the "Painted Ladies," or "Dainty Ladies" of the old English gardens. Parkinson, in the *Paradisus*, describes Mr. Bradshaw's "Dainty Lady,"

another house; yet another contained a light blue variety with white throat, named *Celestina*. No one need trouble to purchase plants of these varieties, for they come practically true from seeds.

Other houses were set apart for mixed varieties of the *Crassifolia* type, of all shades of colour, and of superb quality. Mr. Benary pointed out what he considers to be quite a new type; they are of the spotted section, but the dark spots are surrounded with white, and are designated the leopardised varieties. Immense quantities of *Petunias*, single and double, are grown in glass shelters, the same as those used for the Carnations in pots. It was interesting to see the process of fertilising the single varieties with the pollen obtained from the double flowers. A double *Petunia* does not bear seeds, but if single varieties are fertilised with the pollen from them, the largest proportion of the seedlings will produce double flowers.

of life and strong of habit, that the plants come up in all directions, hold their own with gross weeds common to, at least, one of the positions mentioned, and tower up with their stately flower stems, and take good care of themselves. With us they have been quite a feature, as we have them in great quantities in our wild gardens, where they are grown in big patches, or bold masses of mixed colours, ranging from purple to pure white, many of the stems being 10 feet or so high, and branching out freely around. In a general way, the seed is ripe about the end of July, when the pods or capsules burst, and it falls, and is distributed or sown naturally; but at the first start, when plants have to be raised, it is better to sow earlier, and so get them strong before planting out. A good plan of treating them is, to prepare a piece of ground on a border, or other part, by raking it fine and level, and having marked the size, or stood a handlight on, sow therein, afterwards just covering the seed, when a sprinkling of water should be given, and the handlight closed, and kept shaded till the seed germinates. As soon as this takes place, of course light is at once necessary, and some air to prevent the seedlings from drawing. The plants, when large enough to handle, should be pricked out, in rich fine soil, in beds, and there left to grow till they are big enough to transfer to the positions assigned them. To give them a fair start there, the ground ought, if poor, to be manured, and deeply dug, as, though so sturdy, *Digitalis*, like most hardy plants, pays for good cultivation. *J. Sheppard*.

LEEKs.—An unblanched Leek is just about as useful and as palatable as is unblanched Celery. When, however, the Leek stems have been properly blanched, it is surprising to find how the whole character of the plant in an edible aspect is changed, and how very nice it is when properly cooked and served. That the Leek constitutes what may be called a popular vegetable is inexact. Relatively very few are grown for market; indeed, it is not certain that in gentlemen's gardens, where they are most grown, there is any great demand, and yet no gardener may well be without them. Many of us have to be reminded of the existence of this vegetable by occasionally meeting with samples at autumn and winter exhibitions, when as a rule they look tempting enough if fresh; when, however, as sometimes happens, they have been hawked to three or four shows, and have done duty as winners of prizes, their freshness give place to stale discoloration. What should be the proper form and condition of properly blanched Leeks seems by no means clearly defined by exhibition awards. Sometimes the stems are short and very thick, well blanched perhaps from 3 to 4 inches, the whole wearing a coarse aspect. Sometimes they are long and thin, and then imperfectly blanched. I do not know what may have been the blanching operation adopted by Messrs. Dobbie & Co., of Rothesay, but I have not yet anywhere seen prettier, neater, more completely blanched samples of Leeks than they showed of their Champion on Bank Holiday last at Earl's Court. The stems were very even in size, about $4\frac{1}{2}$ inches in circumference, and blanched fully 9 to 10 inches, wearing a really tempting appearance. Whether due to the variety, or to the blanching, or both, certainly those samples seemed to be my ideal of what good Leeks should be. *A. D.*

PERISTERIA ELATA GROWING FROM A ROOTLESS PSEUDOBULB.—Amongst the Orchids in my collection when I removed here last spring was a very large plant of *Peristeria elata*. On its arrival we found that a two-year old pseudobulb had been broken from its seat on the journey, the fracture being a fairly clean one, and the injured surface presenting a fresh green and healthy appearance. We at once potted the detached pseudobulb experimentally, in crocks and peat, in a 4-inch pot, and shortly afterwards it developed a healthy growth from the top of the bulb, and this year it is forming two fresh bulbs, one each side of the above-mentioned fresh one. Meanwhile, the old bulb shows no signs of decay whatever. Both this plant and its parent are in the East India-house. The parent plant is in a 20-inch pot, and has eighteen old and nine new bulbs, and is showing for bloom. *R. G. Fletcher, India House, Withdean, Brighton.*

A TROUT IN A TANK.—I remember that the existence of a trout in a pond or tank formed the subject of a note in the *Gardeners' Chronicle* not long since. A few days ago when in the garden attached to Anglesea House, Kingston-on-Thames, I saw a fine trout in an open tank, a large fish probably 12 inches long. It was placed there some three

or four years since when quite small, and had done well ever since. The tank is 6 feet in depth, and 4 feet broad, no very great area. It is supplied by water from the mains, and this is used for watering the garden, so that the water is kept frequently changed. The fish is sometimes fed, but very seldom, and then chiefly with worms. It finds food somehow in its limited prison. *A. D.*

MOULDING ROSE SCHEDULES.—Possibly some such new departure was inevitable as that described in the *Gardeners' Chronicle* in its last issue. Those of us who know most of the inner working of Rose shows have long been weary of hearing the outcry of small growers against the great ones, who use their strength like giants to snatch the prizes from the smaller growers. It is too often the loss of the latter more than the loss to them of honour that makes certain rosarians often anything but lovely at Rose shows. They come up smiling in the morning, full of hope, and perhaps fairly fortified against a fair competition and a honourable defeat on the merits of their Roses; but when flooded with pothunters, who overrun not a few of our Rose shows, or swamped through mere numbers, human nature gives way; and the Roses themselves are degraded through the petty strife of their masters. Seeing and hearing these things, I have often wished that the money prizes could be knocked off Rose shows altogether, the committee guaranteeing all exhibitors whose exhibits are beyond a certain point of merit against pecuniary loss incurred in travelling expenses. If it is considered a degradation to play chess for money, it ought to be considered a greater degradation to show Roses for filthy lucre, as the pothunters do. There is yet another and a worse matter that has caused much ill-blood and much heart-burning among rosarians, and that is, the exhibition of Roses by the secretaries and other officials of a society, who have access to full information before the show as to the number of entries, and the character or capacity of the *entrees*, to coin a word. Such circumstances are fatal to all confidence, and are held to explain those transformation scenes on the eve of opening, all too familiar to Rose exhibitors. Were the word to go forth at once that no official in connection with the National Rose Society, nor any societies affiliated with it, shall be permitted to show for money prizes at any of its or their shows, most of the complaints so common of late years would cease. Those who may or do possess special information are more dreaded at Rose shows than those who can pick and choose among their tens of thousands of blooms. No doubt there are advantages in numbers, and it is well, perhaps, to arrange schedules on a numerical basis, say five hundred, five thousand, fifty thousand, as struggles for victory among the Roses; but it by no means follows that those who grow the most Roses will have all the first prizes. It is no uncommon thing to see good rosarians quite lose their heads or their judgment over their big battalions, and leave their best blooms among their spares. For myself, I believe love at first sight among Roses of all sorts, as most likely to win the highest prizes. I hear whisperings of a new classification of exhibitors on other grounds than the number of Roses grown. At last amateurs are to be defined, and marshalled, and kept by themselves, so that each amateur shall only compete with his peers. Before this is done, may I ask are the clergy—no matter how many Roses they grow, show, and some say sell—to be included in this class? If so, would it not be better, fairer to the clergy and all concerned, to give them a class to themselves? Their position is sufficiently unique as rosarians, their skill, their control over glebes and other land in their parishes, their perfect freedom is so complete, that few growers can quite compete with the clergy on equal terms. In a separate class, each of this specially skilful and gifted class would compete with his equals in social and physical environment. The honour of winning would then be greatly enhanced, and Rose culture raised to a higher level. With those with most skill and leisure at their disposal to grow the best Roses ranged in a sort of champion class by themselves, the present classification into growers for sale, private growers, with a third for gentlemen's gardeners who differ greatly from all the others, would seem to cover and suit all the many divisions into which Rose shows are divided. The question of what is an amateur is a nut altogether too old and too hard even for the National Rose Society to crack, and as an old member my advice to all my fellow rosarians is, do not try it. *Rosa.*

HYBRID CURRANT AND GOOSEBERRY.—I hardly understand your correspondent "Senex," on p. 310, where he remarks, "Mr. Culverwell, writing on August the 6th, is in error regarding his hybrid." I do not see the error. The cross was effected between the Black Currant and the Whitesmith Gooseberry. You published proof of that. The effect caused quite a sensation here to all classes of people; and branches with the flowers were sent to you; and this year I have sent you branches with the fruit, which is neither a Gooseberry nor a Black Currant, to all appearance. You were good enough to have it engraved for the benefit of your readers. I hope some of them will improve on it now they know that it can be done. For myself, I question very much if Dr. Maund's cross was ever effected. Seedlings of Black Currants, or any kind of Currants, and Gooseberries too, are often very queer things. I have good proof of that, both in leaves and particularly in the fruit, that anyone might be easily mistaken in the cross; besides, if Dr. Maund had effected the cross for certain, he would have been too glad to have made it known, and I am quite sure it would have been "nuts" for Dr. Lindley; who would have published it to the world as you have done. In a book on the propagation of plants by Mr. Burbidge, published in 1877, he says:—"It is singular to note that the Red Currant, Black Currant, and Gooseberry, will neither interbreed by hybridising, nor will they succeed on each other in the way of scion and stock." If the cross had been known then to Mr. Burbidge he would not have published this statement, for in his book is a mine of information, which every young gardener ought to possess. I may add, that the seed-parent was the Black Currant. The leaves are like those of the Gooseberry, without spines; the fruit like neither, and not a particle of scent like the Black Currant; and, more than that, the Gooseberry caterpillar is particularly fond of the hybrid, whereas they will never touch the Black Currant. *William Culverwell, Thorpe Perrow, North Yorks.*

FRUIT DRYING.—Having studied the question of "Fruit as Food," from every aspect, during the last ten years, I can fully endorse all you say as to the importance of British fruit-growers preparing to preserve their future surplus growths by evaporation. Probably, Pears and Plums would be the best kinds to commence with. At 4d. to 6d. per lb. wholesale, there is a ready sale in the Eastcheap market for all that can be supplied. From California ripe dried Pears, unpeeled, but cut in slices, have been in good demand at $4\frac{1}{2}$ d. per lb., or 42s. per cwt. As the lecturing season is now coming on, will you allow me to state that, if the secretary of any gardeners' or horticultural societies will send me a line to the undernoted address, I shall be glad to arrange to give a lecture, or open a debate, quite free of charge, upon the question of "Fruit as Food," or "What is Man's natural Food and Drink?" Besides being probably a novel topic, it offers a new and radical solution to the great questions of England's national vice of drunkenness, and how best to crop the soil, and may afford a clue to enable us to cope with other social and economic questions besides. *W. S. Manning, 32, Alfred Place West, South Kensington, S.W.*

KESWICK CODLIN APPLES.—Although we have several new, or comparatively new, sorts of Apples, to which much attention has been drawn of late years as being valuable for their size, good appearance, and earliness, as well as their quality when cooked, I question if either of them is more reliable or useful than the old Keswick, which very seldom, if ever, fails to crop, let the seasons be what they may. This year, again, trees are heavily laden with fruit, which, though not so large as others referred to, is of fair size and quite taking in appearance and colour. It is, therefore, a kind that should not be neglected; as besides its free-cropping habit, it is in before any other, and the flesh being tender and pulpy, is just the thing for tarts and sauce and other like uses. Lord Suffield, although a fine Apple, is too tender in constitution to be depended on, and should only be planted in warm sheltered places, as otherwise trees are almost sure to go off or fail to do well. Lord Grosvenor is a hardier kind and a robust grower, and one that should be in every garden or orchard, as also Grenadier. But as these early Apples do not keep long, it is useless planting them in quantity, except for market purposes, unless the consumption is unusually large, as there are plenty of others that come in during the autumn and make a succession. *J. Sheppard.*

PRUNUS PISSARDI.—As it flowers so early in the year, the frost injures it, but a few fruit have been gathered from the wall, and a large quantity from pot plants in a cold orchard-house. *W. H. M., Munches, South-West of Scotland.*

FIGS AT CHISWICK.—I read the remarks anent the Figs at Chiswick with great interest, but am somewhat surprised that no mention was made of White Marseilles among those noticed, as by most growers that variety is considered one of the very best for culture under glass, as it is a prolific cropper, and of rich flavour; the only fault I have to find with it being that it is subject to scale or get injured in its skin by the sun, and sometimes we lose many of the fruits in that way. I note that it is stated of the Figs at Chiswick, and, of course, the remarks apply elsewhere, that the best kinds do not bear a first crop, which is greatly against them, as indoors that is of the first importance in places where room is limited; and from what is said as to the good qualities of Bourjasotte Grise, I hope that variety is an exception, for I should like to add it to the only two sorts we grow at present, which are White Marseilles and Brown Turkey, and I shall therefore be glad to hear more about it. *J. S.*

SCIADOPITYS VERTICILLATA.—In reference to this species, I may say that my plant grows in peaty soil, and thrives very well, making growths of 8 to 10 inches annually, and is about 9 feet high. *W. H. M., Munches, South-West of Scotland.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 7.—The frozen blooms of Chrysanthemums sent from Wellington, New Zealand, by Mr. John Earland [and mentioned in our report of the show last week. Ed.], were brought before the Floral Committee, Sir Edwin Saunders, the President of the society, being in the chair. The cylinders containing the blooms were turned out one by one, and the ice being very transparent, the flowers could be clearly seen, also the green leaves attached to two or three of the blooms. As the blooms were examined, the names were given, and descriptions read by the Secretary, Mr. R. Dean. There were eight blooms, in six varieties, two of them being in duplicate.

The examination showed that the flowers were of good size and depth, and broad petalled. The plants from which they had been cut were raised by Mr. Earland, from seed gathered from Thunberg, Comte de Germiny, and Edwin Molyneux, and, like their parents, the seedlings partook of the incurved character. The seeds were saved in the Australasian autumn of 1890, and out of seventy plants obtained came the blooms sent to England. The varieties were Rimutaka, one bloom, an incurved variety in the way of Lord Wolsley, but with more chestnut in the colour, and broader petals (Commended); Lady Bell, one bloom, a white Japanese, something in the way of Lady Trevor Lawrence, very promising (Commended); Tarawera, two blooms, a yellow Japanese of large size, broad in the petals, and highly promising (First-class Certificate of Merit); Zealandia, two blooms, a silvery-lilac incurved Japanese, the reverse bright vermilion-pink, broad petals (First-class Certificate of Merit); J. J. Kerslake, one bloom, also a white Japanese of the character of Stanstead White (Commended); and a small and somewhat undeveloped bloom of Tongarero, a pink-reflexed Japanese. In addition to the Certificates and Commendations, the Silver-gilt Medal of the Society was awarded to Mr. Earland in recognition of his enterprise in sending the blooms to this country. From Mr. J. Agate, Fareham, came an early white-flowered decorative Japanese Lady Fitzwygram (Certificate of Merit). Sydenham White, a white-flowered Japanese, from Messrs. Reid & Bornemann, was thought to be identical with an American variety named Mrs. Phelps. Certificates of Merit were awarded to Cactus Dahlias Kaiserin, Countess of Gosford, Countess of Radnor, and Bertha Mawley, from Messrs. Keynes & Co.; and to H. E. Milner, from Mr. C. Turner. To Pompon Dahlias Amber and Hilda, from Mr. C. Turner; and Tommy Keith, from Mr. J. T. West. To Gladiolus Grand Vainqueur and Mont Blanc, two very fine varieties, from Mr. W. H. Fowler, Taunton; and to single Dahlias Jack, yellow satin; and Cadet, from Mr. T. W. Girdlestone. To Tomato Challenger, from Messrs. Collins Bros. &

Gabriel. A Commendation was given to an early white Kidney Potato, from Mr. J. Aplin, of Gloucester. A new tube and cup for Chrysanthemum blooms, sent by Dr. Geo. Walker, Wimbledon, was commended. A hearty Vote of Thanks was given to Sir Edwin Saunders, for presiding.

HENLEY AND DISTRICT HORTICULTURAL.

SEPTEMBER 7.—The above Society held its annual show, but the weather being unfavourable, the number of visitors was very small compared with previous years, although the number of the exhibits was greater than usual. Vegetables were largely shown, and of good quality, gardeners, amateurs, and cottagers alike, making a good display. Messrs. Laing & Son sent a stand of Tuberous Begonias; Messrs. Sutton & Sons, a fine display of cut flowers, also Gloxinias; Mr. J. R. Tranter showed good Dahlias; also Mr. Phippen, of Reading, various plants and cut flowers. Mr. W. Pope was 1st for a group of plants, showing good Caladiums, Crotons, &c. Mr. S. Ely, gr. to Mrs. Havers, Joyce Grove, Nettlebed, was 2nd, with a group consisting of Caladium, Graptophyllum Nortoni, Crotons, Vallota, Adiantum, Acalyphas, &c. The best specimen plant flowering was an Eucharis amazonica, shown by Mr. Pope; and the best foliage plants were shown by Mr. P. Knowles, gr. to F. Crisp, Esq.

SCOTLAND.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.

THIS Society's autumnal exhibition of flowers, plants, fruits, and vegetables was admitted on all hands to have been the finest show of horticultural produce ever seen in Glasgow; the whole of the classes being strongly represented, there being 1012 entries, and nothing of secondary merit was to be seen in the exhibition. The building (St. Andrews' Hall) being somewhat dark for doing justice to such a fine display, was against the interests of the Society, but it is hoped that this may be remedied another season.

The tables from nurserymen made a splendid display. Two were from Messrs. Smith & Simons, and one from Mr. Sutherland, of Lenzie; each was loaded with choice Crotons, Palms, Lilioms, Heaths, Ferns, &c. In the class for competition, Messrs. J. & R. Thyne were 1st, with an elegant display of Dracenas, Pandanus, Oncidiums, Caladiums, Crotons, and other choice species; Messrs. Austin & McAslin were a good 2nd, with a choice selection.

The gardeners' tables, thirteen in number, were well arranged, and consisted of Pancratiums, Cliveas, Crotons, Hydrangea paniculata, Palms, Ferns, and Heaths, as the choicest exhibits. The 1st prize was won by Mr. H. McInlay, gr., Oakleigh.

Plants for table decoration were exhibited in a long line dividing the fruit tables; the species were chiefly Aralias, Dracenas, Crotons, and Pandanus. The 1st prize was awarded to Mr. Sutherland, nurseryman, Lenzie; 2nd, Messrs. Aitken & Sons, Lenzie.

Begonias made a grand display, the collection from Mr. Ware, Tottenham, exciting much enthusiasm, and it was really one of the leading features of the show. A First-class Certificate to Charles Macdonald Williamson was awarded.

Ferns were well shown; Gleichenias were exceptionally fine. 1st, Mr. C. K. Dalgarno, gr., Milton; 2nd, Mr. Mitchell, Thornwood, Langside.

Tables as specimens of dessert arrangement were prominent objects. 1st, Mr. David Cross, 138, Queen Street, Glasgow—an oblong mirror ran along the centre, on which were placed vases furnished with flowers and foliage, Fern and Lycopodium being used largely to tone down the brilliant golden vases. An ornamental centrepiece of flowers had a lamp at each side, chastely ornamented with Lycopodium and flowers. The 2nd prize was taken by Mr. McIntyre, gr., Parkhouse; though this was less elaborate with glass and metal, it was neat and tasteful. There were numerous Palms, Crotons, and other large plants placed throughout the Hall with

good effect. The orchestra was well furnished with specimen Palms and Dracenas by Messrs. Thyne.

Cut flowers made an immense display, especially Carnations, Asters, Marigolds, herbaceous plants, &c. The exhibits by Mr. Dobbie, Rothesay, were excellent. Roses, from Messrs. Cocker, Aberdeen, were very fine for the season. This firm was 1st for twenty-four very choice blooms; Mr. Robertson, nurseryman, Helensburgh, was a capital 2nd.

In the gardeners' class for twelve Roses, Mr. Craig, Beith, had a fine exhibit, and was awarded 1st prize; 2nd, Mr. J. Hood, Helensburgh. Mr. Campbell, nurseryman, Blantyre, had a great display of Carnations in sprays, bunches, and in stands; also a large and choice collection of Dahlias and Pansies. Dobbie's collection of Pelargoniums was an extensive exhibit. Single Dahlias, in bunches, were of great merit. The 1st prize was awarded to Mr. J. Wilson, gr., Bloomhill. Everlasting flowers, in bouquets, formed a great attraction, there being twelve competitors, and the competition very close. Bouquets for hand, table, and button-holes were observed in great numbers, and above average merit. Mr. Mair, nurseryman, Prestwick, had an exhibit of twenty-four of the finest spikes of Gladioli ever seen in Glasgow—De Mirbel, Baroness Burdett Coutts, Sceptre de Flore, bicolor L'African, and Conquerant were really wonderfully fine. The gardeners' class was well represented, and a 1st prize was awarded to Mr. Mathew Smith, Roslea.

Dahlias were large, clean, and well formed. The 1st prize was awarded to Mr. Campbell, Blantyre, for twenty-four fine blooms; Mrs. Langtry, Mrs. Gladstone, Wm. Garret, T. West, John Hickling (a new one), and Countess of Ravensworth were among the best. The 2nd prize was awarded to Messrs. Aitken & Sons, Lenzie. The gardeners' classes were also well represented by fine show Dahlias.

Fruit.—This was mostly of high quality. Mr. McConachie, Cameron House Gardens, had 1st, for a collection of twelve dishes, his Muscat and Hamburgh Grapes being very good; Peaches, Cherries, and Plums were also fine. Mr. Crosbie, gr., Buchanan Castle who was 2nd, had fine Figs, Peaches, Nectarines, and Alicante Grapes.

In the collection of hardy fruits, the best was disqualified for exceeding the numbers specified to form the dishes, and the lot which was awarded the 1st prize was not of special merit.

In the classes for Grapes, there were thirteen exhibits for the Black Hamburgs, all good, and the pair of bunches from Keir were very fine in every respect, and Mr. Lunt was awarded 1st prize; the 2nd and 3rd going to Mr. Cadzow and Mr. Lealie, Perth, in the order of their names.

In the class for any other black, Mr. McBean, Craigend, was well ahead of his rivals, for wonderfully fine bunches of Alicante; Mr. Leslie was 2nd, for Gros Maroc; and Mr. Halliday, Ayr, 3rd, for fine Alicante. Mr. Lunt had 1st for finely-coloured Muscat of Alexandria; 2nd prize was awarded to Mr. Crosbie; and 3rd to Mr. McConachie, for fine examples. Other white Grapes were represented by very fine bunches of Buckland Sweetwater, from Mr. Machonachie.

There were some very fine Apples in the classes for kitchen sorts, Mr. Strathdie, Tarbolton, being awarded 1st prize, for six varieties, four of each: Mr. Bogie being a good 2nd.

Peaches were large and well coloured. The 1st prize exhibit was shown by Mr. McBean; 2nd, Mr. Lunt; and 3rd, Mr. Halliday.

Melons were numerous, but only a few were finely flavoured. Mr. Gibson, gr., Muldsie Lodge, was 1st; Mr. Austin, Blairmore, 2nd.

Vegetables.—These were of great excellence, and all the classes well represented. Mr. McBean's collection of twelve sorts left nothing to be desired, his Cauliflowers, huge Leeks, Celery, and large handsome Onions being worthy of special notice; Mr. Gibson, Dalry, was 2nd; and Mr. Millar, Castlemilk, 3rd, with very meritorious exhibits.

The collections raised from Messrs. Sutton & Son's seeds were of first-rate quality, Mr. Gibson, Dalry, being awarded 1st.

Potatoes were in fine form. There were long tables loaded with splendid Turnips (yellow), Leeks, Parsnips, Carrots, and Tomatos (very clean and handsome), showing high culture. Parsley in pots was an attractive exhibit, and competition was very keen. This is a fine feature at many of the Scotch shows. The Glasgow Horticultural Society may be justly proud of this splendid exhibition. *M. Temple.*

ROYAL CALEDONIAN HORTICULTURAL SOCIETY,
EDINBURGH.

This enthusiastic society held its autumnal exhibition in the Waverley Market on Wednesday and Thursday, September 7 and '8, and it was admitted by experts that the Grapes were of finer quality than those exhibited at any previous show in Edinburgh. In most of the Grape classes the competition was very keen. Outdoor fruit, on the contrary, was comparatively poor in quality, whilst Peaches and Nectarines, from under glass, were excellent in every respect. Pines were fairly plentiful, mostly Smooth Cayennes; the few Queens which were exhibited should not have been taken to any show. Apples and Pears, from under glass, were really good, and mostly appeared in the collections of fruit. The collection of twelve dishes was most creditable to the exhibitor, Mr. McKelvie, Broxmouth. The Muscats of Alexandria were large in bunch and berry, and beautifully coloured. Gros Guillaume were a pair of grandly-finished bunches of large size, and Alicante, also very perfect and of great size. Brown Turkey Figs, Melon Duchess Belgarde, Barrington Peaches, Humboldt Nectarines, Plums, Apples, Pears, and Apricots formed a collection such as is rarely equalled for general excellence. Mr. Boyd, Callendar, was 2nd with grand Black Hamburg, Madresfield Court, and Alicante Grapes, the bunches of the latter being 16 inches long, and large and handsome. The Peaches were also very fine. The 3rd prize was awarded to Mr. Hunter, gr., Lambton Castle, Durham, his Gros Maroc Grapes were very fine, and Figs, Apples, and Pears first-rate. Mr. Murray, Culzean, was also well represented in this class.

The prize for a collection of eight dishes was also carried off easily by Mr. McKelvie, with fruit similar to that described in his exhibit for the class for twelve dishes. Mr. Smith, Oxenford, had a capital 2nd, his Muscat Grapes, Peaches, and Nectarines being of much merit; Mr. Hunter, Lambton Castle, was 3rd. In the class for twelve dishes of hardy fruit grown in the open, Mr. Dow, gardener, Newbyth, was 1st, his Stirling Castle Peaches and Noblesse were good; Nectarines and Morello Cherries were of fine quality. Mr. Day, gr., Galloway House, had a capital 2nd; and 3rd went to Mr. McIntyre, gr., The Glen. Mr. Hunter, Lambton, had 1st for a collection of orchard-house fruits, twelve dishes, which were of very fine quality. Wonderful Pit-maston Duchess and Souvenir du Congrès Pears, Lord Napier and Pine-apple Nectarines, and finely-coloured Apples, were his best dishes.

For a collection of six bunches of Grapes, Mr. Boyd, Callendar, was 1st, with large bunches of Madresfield Court, Alicante, and Black Hamburg, finely coloured, and large in berry. Mr. Murray, gr., Park Hall, was 2nd, with handsome bunches, and beautifully finished, of Muscats, Alicantes, Cooper's Black, and Madresfield Court; Mr. Kirk, gr., Alloa, was 3rd, with very fine bunches of Black Hamburg, Buckland Sweetwater, Alnwick Seedling, Gros Maroc, and Muscat of Alexandria. Magnificent as the prize-winner's bunches were, they barely exceeded those in the other exhibits, which came from Mr. Leslie, Pitcullen; Mr. Day, Galloway House, Mr. Green, Yeaster, and Mr. McKinnon, Melville House. Such close competition is seldom seen, and was never equalled in Edinburgh.

For four dishes of Grapes, Mr. Leslie was 1st, with grand Muscats, Alicantes, Black Hamburgs, and Gros Maroc. 2nd, Mr. Murray, Park Hall; 3rd, Mr. Green, Yeaster, and Mr. Kirk, equal, all very perfect bunches. For two bunches Black Hamburg, 1st, Mr. Murray, Park Hall; 2nd, Mr. McKinnon, Melville; 3rd, Mr. Boyd. In this class

we should like to see greater excellence. Two bunches of Muscat of Alexandria came from Mr. McKelvie, whose exhibit was a capital one in every respect. Mr. Mattison McCurrie and Mr. Day were 2nd and 3rd respectively.

In the other classes, in which all the best-known Grapes were tabled, fine quality was strongly represented (fifteen classes in all). The Pines and Melons may be passed without any special remarks on them. Mr. Lunt's 1st prize Peaches were equal to those he has often brought in such excellent condition from Keir. Good 2nd and 3rd came from Messrs. Williamson and Boyd. Nectarines were mostly first-rate. Mr. Lunt was 1st, with excellently-coloured Elruge; and Mr. Hunter was 2nd, with very fine Pine-apple Nectarines. Apricots were plentiful, but none of very remarkable quality. Mr. Cossar was 1st, with a dozen very clean fruits.

In some forty-five collections of Plums, Apples, and Pears, competition was somewhat strong, and excepting the fruits which were grown under glass, the greater portion of the exhibits were much like what are too familiar to visitors of shows this season—very moderate in quality, showing the effect of untoward weather. Raspberries were plentiful, and of fair quality. Currants were remarkably fine, especially red. Among the exhibits, not for competition, two baskets of Grapes of fine colour and large in berry, came from Messrs. Thomson, Clovenfords, showing how these fruits can be transmitted to a distance, with bloom as perfect as when they left the vineries—the variety indicated was Cooper's Black. On a table was a branch of Cherry Crabs loaded with fruit, sent from Eynsham Hall, Oxon, a class of fruits very useful, but not used to the extent they ought to be.

Flowers.—Roses were a great show. Messrs. Cocker and Croll taking 1st and 2nd prizes respectively for thirty-six blooms—Mrs. John Laing, Salamander, Margaret Dickson, Climbing Niphetos, Prince of Wales, and Merveille de Lyon, were among the best on the table. Messrs. Dickson of Belfast, and Smith & Sons, Stranraer, had fine collections, and they were not like the prize exhibits, mutilated out of character by twisting the petals out of their place—a practice which, experts say, should disqualify them, and so say we.

Cut flowers generally were numerous, and many of them in fine condition.

Begonias from Mr. Ware, of Tottenham, were a grand exhibit. His doubles were much admired.

Messrs. Dickson, Belfast, and Cocker & Sons, had 1st and 2nd prizes respectively for Show Dahlias. Numerous exhibits of these came from gardeners.

Stewart & Mein, of Kelso, had a grand display of Gladiolus, thirty spikes of great size.

Laird & Sons had large spikes of single Dahlias, and were awarded 1st prize. A long table of cut flowers of choice species came from Mr. Forbes, Hawick Nurseries. Carnations, Hollyhocks, Violas, Pentstemons, and double Begonias were remarkably fine. Antirrhinum Crimson Bedder is a capital acquisition, a good companion to the white variety.

Plants.—On the numerous tables were many beautifully-grown plants. The Orchids (which for the season were fine) filled a table, and they were greatly admired. Mr. Sharp Freeland, taking the lead in several classes; his Vanda Sanderiana excited much enthusiasm; a fine Miltonia Moreliana, with twenty-five spikes; Dendrobium Schroderianum, Cypripedium Sedeni. Mr. Wilson, Westmount, Glasgow, showed well. Mr. Curror, Eskbank, and Mr. Barlas had Miltonias, Cypripedium Chamberlainianum, and Vanda cœrulea, in fine form.

The tables of pot plants, as usual, formed the bulk of the show. Mr. McIntyre, Darlington, was 1st, for a finely-arranged table of fresh, healthy stove and greenhouse plants—Crotons, Cattleyas, Dracenas, being among the best and most telling species; Mr. Wood was 2nd for a similar selection, but which was rather heavier in arrangement.

Mr. Glass, George Street, had a long table of Palms, Liliiums, white Lapagerias, white-flowered

Heaths, and Araucaria excelsa, in great numbers, and of fine table size.

Messrs. Methven's long table of Begonias was very attractive, and of much excellence; they had, also, a table of flowering and foliage plants, and one of the finest ever that enterprising firm exhibited in Edinburgh.

Mr. D. W. Thomson, of Golden Acres, &c., had a fine display arranged along the floor, of their choice Crotons, Dracenas, Pitcher Plants (these were hung up with fine effect); Ferns, Palms, and Liliiums were numerous, and the whole backed by tall Palms. Messrs. Birkenhead, Manchester, had also a fine display.

Messrs. Laing & Mather had a table of splendid Carnations—cut blooms and in pots—arranged tastefully among Ferns. Adiantums and Davallias were in fine condition from Rockville. Gleichenias were a fine exhibit; Mr. McIntyre, Darlington, was awarded 1st prize in this class. Ferns generally were numerous and good. Tables of Fuchsias and other flowering plants filled large spaces. A long table of plants and cut flowers came from Dickson & Co.; and Dickson & Sons had choice Coniferae in tubs.

In the vegetable classes, the exhibits were remarkably fine—Onions, Carrots, Leeks, Tomatos, and Potatos as good as one rarely sees. In the collection for twelve sorts, Mr. Low, of Stirling, had a capital basket, most tastefully arranged in Parsley; his Cauliflowers, Onions, Celery, Leeks, and Cucumbers were very perfect. Mr. Harper and Mr. Roe were awarded 2nd and 3rd respectively. Mr. Murray, Park Hall, had a dozen splendidly-formed Tomatos for his prize lot. This class had many fine exhibits in it; but the long tables of fine produce showed that the season helped to make the vegetable classes very attractive at that splendid exhibition.

PAISLEY HORTICULTURAL.

Thursday, Sept. 8.—The above Society held its show in the George A. Clark Town Hall, Paisley. The entries were in number about the average of former shows. The quality of the exhibits was excellent all round, fruit perhaps, which was not a strong feature, being the exception. Cut flowers, such as Asters, Dahlias, Marigolds, and other popular florists' flowers and annuals, were exceptionally good, Roses were, considering the date, splendidly shown by Messrs. Alex. Dickson & Sons, Newtownards, co. Down, one box of Mrs. John Laing being very worthy of the high admiration it received. A good display of Roses was also made by Messrs. Smith & Sons, Stranraer. Messrs. Dobbie & Co., Rothesay, were in strong evidence with a fine display of their remarkable productions in florists' flowers, annuals, and select vegetables. Mr. Cuthbertson, Rothesay, had an extensive, varied, and interesting collection of cut flowers of autumn-flowering hardy perennials. Mr. Alex. Lister, Rothesay, exhibited along with other good things in cut flowers, a new seedling Gladiolus named Pride of Rothesay, which appeared a promising production. The blooms were of great size, and of such substance as to appear to be modelled in wax, delicate flesh-colour faintly striped rose, merging into bold flames of crimson in the throat. Mr. Macfee, secretary to the Society, exhibited an interesting lot of early-flowering Chrysanthemums. Mr. Morgan, Falside Nursery, and Mr. Stewart, Carriagehill Nursery, each contributed to the attractions with interesting collections of miscellaneous pot plants. But the most striking collections of plants were those exhibited by Mrs. Coats, Ferguslie House, and from Woodside by Mr. Archibald Coats. The Ferguslie group comprised noble specimen Palms, a large well-flowered Brugmansia Knightii, finely-coloured Dracenas, Crotons, and a wealth of colour in Celosias, Liliiums, Chrysanthemums, &c., which was made the most of in the skilful hands of Mr. Duncan MacDonald, the gardener. The Woodside group differed chiefly from the Ferguslie group in having a few Orchids and Pitcher plants introduced, which gave a rather *recherché* air to the whole, which was very judiciously arranged by Mr. Hogg, gardener there.

The leading prize-winners in the competing classes of plants were Mr. Wm. Cameron, gr. to Col. Thos. Glen Coates, Ferguslie Park; and Mr. Jas. Maxwell, the latter distinguishing himself in the larger number of the classes.

In cut flowers first honours were shared equally by Messrs. W. Cameron, Robt. Crawford, Lochwinnoch; John Meikle, Bridge of Weir; M. Smith, Prestwick; Hugh McKechnie, and others, who gave no address.

In vegetables, Messrs. Walter Shearer, Renfrew; Alex. Carnochan, John Brown, the gardens, Newfield, Johnstone; J. McGregor, Hugh Duncan, John McDougall, Wm. Cook, Robt. Inglis, and George Lang were the principal prize-winners in a pretty stiff competition.

HORTICULTURAL EXHIBITION AT EARL'S COURT.

THE show of autumn flowers on the 8th and 9th inst. made a very pretty exhibition. The entries were numerous, and the space usually available for such displays was well filled. Large and tastefully-arranged groups of Gladiolus, Dahlias, and other flowers contributed to a greater floral display than has been seen here, if we except the Rose exhibition. The first class was for a collection of bunches of stove and greenhouse flowers, in not less than twelve varieties, and a pretty collection, consisting of choice kinds, was shown by the successful exhibitor, Mr. A. Gibson, gr. to T. F. Burnaby Atkins, Esq., Sevenoaks. Mr. J. Prewett, Hammersmith, who came next, also staged very choice specimens in smaller bunches. For a collection of Gladiolus, to consist of cutspikes, open to nurserymen, Messrs. J. Burrell & Co., Cambridge, were the winners, staging some 190 or more spikes of first-rate quality. First-class Certificates were granted to Hetty Dean, Mrs. Peter Blair, Mrs. Jno. Wills, and Irene Harkness; Messrs. Harkness & Sons, Bedale, Yorks, were 2nd, showing about eighty species. In the amateur class, Mr. E. B. Lindsall was the only exhibitor, but his collection of sixty spikes was highly meritorious.

Dahlias.—In the leading class for nurserymen, for sixty varieties of show and fancy Dahlias, the 1st prize was secured by Messrs. Keynes, Williams & Co., Salisbury, with a similar exhibit to that which secured 1st place at the National Society's show at the Crystal Palace. Mr. Chas. Turner, Slough, was again 2nd, and Mr. Geo. Humphries, florist, Chippenham, 3rd. Mr. S. Mortimer was 1st for twenty-four show Dahlias, with a very fine lot of large and well-formed blooms. He was followed by Mr. J. Walker, nurseryman, Thame, Oxon, and Messrs. Saltmarsh & Sons, Chelmsford.

In the amateur division, Mr. Thos. Hobbs, Easton, Bristol, was 1st for twenty-four show and fancy Dahlias, being followed by Mr. J. T. West, gr. to W. Keith, Esq., Brentwood, and by Mr. Sydney Cooper, Hamlet, Chippenham. An extra prize in this class was awarded to Mr. Geo. Boothroyd, Red Hill, Hants.

For twelve show and fancies, Mr. Sydney Cooper was 1st, Mr. J. B. West 2nd, and Mr. T. Vagg, gr. to Jas. Theobald, Esq., 3rd.

For a collection of Dahlias (any type), arranged for effect, open to nurserymen—and it was this competition that secured the delightful effect that was obtained along nearly the whole side of one of the rooms—Messrs. Keynes, Williams & Co., Salisbury, who secured the 1st position, had a magnificent group, about 30 feet long, at the back of which were beautifully set up flowers representing pyramids, pillars, &c. The pyramids were formed by Cactus Dahlias, and the pillars with Pompons, whilst the show varieties were shown in groups at the front. Messrs. J. Cheal & Sons, Crawley, were 2nd with an elaborate arrangement in the centre of which were terraces, culminating in a crown composed of single varieties; whilst the 3rd position was filled by Mr. Thos. S. Ware, Tottenham, who showed a very telling group, relieved by Asparagus foliage. This class must have occasioned the judges some little

consideration, so equal in excellence were the 2nd and 3rd prize collections.

For eighteen Cactus or decorative, in bunches of six, Mr. Chas. Turner, Slough, was 1st; Messrs. Keynes, Williams & Co., 2nd; and Messrs. J. Cheal & Sons, Crawley, 3rd. Mr. Turner occupied the same position again for twenty-four Pompon varieties; Messrs. Keynes, Williams & Co., 2nd; and Mrs. M. V. Seale, Sevenoaks, 3rd.

Asters.—Messrs. Saltmarsh & Sons, The Nursery, Chelmsford, showed best, securing 1st prize for twenty-four French Asters, with a collection that, perhaps, was not so good as some we have seen in other seasons; Mr. Sydney Cooper was 2nd, and Mr. John Walker, Thame, Oxon, 3rd.

In the class for 12 French varieties, Mr. John Walker was 1st; Messrs. Saltmarsh & Sons, The Nursery, Chelmsford, 2nd; and Mr. Sydney Cooper, Hamlet, Chippenham, 3rd.

The competition for a group of Chrysanthemums,



in pots not exceeding 8 inches, lay between Mr. E. Vince, Highgate, and Mr. Norman Davis, Camberwell, who were placed in the above order, being the same as at the Aquarium Show.

For a collection of Sunflowers, Mr. G. H. Sage, Ham House Gardens, was 1st, and Messrs. J. Burrell & Co., Cambridge, 2nd; Mr. Sage likewise secured the 1st position for a collection of Michaelmas Daisies.

Fruit.—The classes for fruit were few, and in two of the classes there were no entries. Mr. J. McIndoe, gr. to Sir J. W. Pease, Guisborough, Yorks, was 1st for three varieties of cooking Plums; Mr. Carr, gr. to Mrs. S. Clarke, Croydon Lodge, 2nd; and Mr. G. H. Sage, 3rd. Mr. W. Con was 1st for three varieties of dessert Plums; Mr. Peter Blair, gr. to the Duke of Sutherland, 2nd; and Mr. McIndoe 3rd.

Cut Flowers.—There were several classes devoted to these, and the exhibits were good and tastefully arranged. Mr. J. R. Chard was 1st for the hand bouquet, for the floral design suitable for funerals, and also for a vase of flowers and foliage on the natural stems.

Miscellaneous exhibits were perhaps exceptionally numerous, and added considerably to the general

effect of the whole. Messrs. E. D. Shuttleworth, Peckham Rye, had an immense group of Palms, stove and greenhouse plants, Lilliums, &c., arranged at the end of one of the annexes, for which they were awarded a Gold Medal.

Silver-gilt Medals were awarded to Messrs. B. S. Williams, for a very fine group of foliage plants, Crotons, &c.; Messrs. Paul & Son, Cheshunt, for a collection of hardy flowers, Roses, &c.; to Messrs. Jno. Laing & Son, Forest Hill, for hardy herbaceous flowers, Roses, Begonias, fruit trees in pots, and a collection of Apples; to Messrs. Chas. Lee & Co., Hammersmith Road, W., for a collection of hardy decorative plants, also for hardy flowering Dahlias, Lilliums, &c.; to Messrs. H. Lane & Son, Berkhamsted, for fifty-six dishes of fruits; and to Messrs. Cannell & Sons, Swanley, for a very fine collection of Dahlias. Mr. Chas. Turner, Slough, obtained a Silver Medal for a pretty collection of Dahlias. Mr. J. Walker, Thame, for another collection of Dahlias, as did also Mr. S. Mortimer, Rowledge, Farnham. Messrs. Jarman & Co., Chard, Somerset, showed a collection of Dahlias, hardy flowers, &c., and were likewise awarded a Silver Medal. Mr. E. F. Such obtained a Silver Medal for a group of herbaceous flowers, Roses, Dahlias, &c.; Mr. R. Nicholas, South Kensington, for six good Pine-apples; Messrs. Cutbush & Son, Highgate, for a collection of hardy flowers; Mr. J. R. Chard for a table arranged for dinner; Messrs. Pitcher & Manda for a collection of hardy flowers; Mr. J. T. West, gr. to W. Keith, Esq., Brentwood, for a collection of Dahlias; Mr. Arthur Rawlings, Dahlia Nursery, Romford, also for a collection of Dahlias, Mr. Geo. Garner, gr. to Mrs. Braddyl, Amberwood, Christchurch, for a nice collection of fruits, including good bunches of Grapes, Alnwick Seedling and Madresfield Court, also Apples, Melons, Tomatos, &c.; Mr. W. Wrede, Lüneburg, Germany, for a collection of cut blooms of Pansies, &c.; Mr. W. Carr for six dishes of large and well-coloured Peaches. Bronze Medals were awarded to Mr. Geo. Humphreys, Chippenham, for a group of Dahlia blooms; Mr. W. Wells, Earlswood Nursery, for a group of Chrysanthemum blooms; to Mr. W. Welsford, South Lambeth, London, for a collection of hardy flowers, &c.; to Mr. McIndoe, for six dishes of Peaches; to Mr. Richard Dean, Ealing, for a collection of Beans; and to Mr. H. Walter Salmon, West Norwood, for a collection of fine Asters.

Obituary.

MICHAEL SAUL.—We regret to record the death of Michael Saul, a well-known gardener, and writer on horticultural subjects in these columns. We extract from a full account of his life up to the year 1876, which appeared in these pages on January of that year, the following details:—Saul was born on June 29, 1817, at Carey's Wood, Castle Martyr, co. Cork. His father was gardener to the Dowager Countess of Shannon at Carey's Wood, an enthusiastic horticulturist, who understood plants well, and took the liveliest interest in their cultivation. In the year 1836 the Earl of Shannon, having bought East Cowes Castle in the Isle of Wight, Saul's father was taken there as gardener and manager of the place. After the family had gone to East Cowes Castle, young Saul determined to take to gardening as a profession, and in 1837 he went to the Durdham Down Nurseries, Bristol. Here he learned the propagation of plants under Mr. Mayes, and in March, 1838, he went as foreman under Mr. Hatch, at Leigh Court, one of the most famous gardens near Bristol. He learned much from Hatch, who was a clever and painstaking man, growing Pines and Grapes very well. In 1842 Saul left Leigh Court, to go as foreman at Bowood, under Mr. Spencer, and whilst here he profited greatly in the matter of fruit culture, Bowood being then one of the leading places for fine fruits, especially Pines and Grapes. In February, 1846, we find Saul at Messrs. Knight &

Perry's Nursery, Chelsea, where he stayed over two years, exchanging it for the situation of head gardener to Lord Stourton, Stourton Castle, Knaresborough, in 1848. He soon put a different face on garden matters at Stourton, greatly improving the appearance of the wall trees, Vines, and Pines, and planting largely standard, dwarf and pyramid Apples and Pears, and instead of poor crops of miserable fruits he succeeded in securing in the average of seasons good crops of fine fruit. In the planting of choice Conifers, and ornamental trees and shrubs generally, much was done to improve and beautify the gardens and pleasure grounds. He was thirty years at Stourton, only relinquishing his charge in 1878, and dying at Manchester, August 27 this year; he was buried at Stourton Cemetery.

POTATOS AT CHISWICK.

THE members of the Fruit and Vegetable Committee of the Royal Horticultural Society turned up in large numbers at Chiswick on Tuesday last, for the purpose of examining the ninety, or thereabouts, sorts of Potatoes grown there this season. Some few of these are old varieties, but the bulk are new ones. Some few also proved to be much diseased, but the majority gave clean crops, or with very few tubers; some, again, gave poor or rough crops, others gave almost wonderful ones. The duty of seeing two or three roots of so many varieties first lifted, then of selecting from the most promising for cooking, and finally tasting these cooked samples, was a somewhat onerous one. Twenty varieties were ordered to be cooked, and it is due to Mr. Barron's staff to say that this work was admirably done, each dish being presented at table in the most attractive condition. Finally, there were selected for the higher award of three marks—of older varieties, Laxton's Early Short-top, Reading Giant, and The Canon; and of new ones, King of the Earlies, a first-rate stock, of the Ashleaf type (Ridgewell); and Boston No. 22 (Johnston), the latter a splendid cropper, every tuber of even and good size, clean, and of a good Regent type—quality first-rate. Two marks were awarded to White Russet (Harris), Paul's White Round, and Crawley Prizetaker (Cheal). It was resolved that samples of the selected varieties should be submitted for Certificates at the next Drill Hall meeting.

A TRAVELLER'S NOTES.

(Continued from p. 305.)

A CALCUTTA NURSERY, January 12, 1892.—Mr. Chatterjee has a shop in the European quarter, close to the Government House; here he sells his porcelain pots, and makes his bouquets, button-holes, &c.—chiefly the employment of his younger brother. All his stuff for cut purposes is grown at a nursery between here and Benares (at Baidyanath Junction), which he tells me is 100 acres in extent. By special arrangement, the Bombay-Calcutta mail stops daily to pick up his cut flowers—chiefly Roses and Ferns. For an average bouquet (small) he gets 40 rs.; but for drawing-rooms, of which there is one annually, he sometimes gets 250 rs., which, putting the rupee at 1s. 5d., is £19 15s. 10d. His average takings on such an occasion are between 2500 and 3000 rs. He is also about—in fact, the nucleus is formed—to start a branch establishment at Darjeeling, where he will grow Ferns, Pelargoniums, &c., in the hot season, bringing them to Calcutta in the cool. His Calcutta nursery, about 10 acres in extent, is situated some distance from the European quarter, right at the extremity of another side of the town. He is building a new house—a tremendous place.

On either side of the entrance leading into the grounds are fine clumps of *Livistonia Martiana*, that on the right, broken up by a few *Oreodoxas*, being several yards long, and from 10 to 12 feet high—a fine mass.

The show-house is 350 feet long by 33 feet wide, its sides, end, and top being covered with Oollu-grass, tied on wire netting, on thin cast T-iron supports stuck in the ground. A low brick bed runs the whole length of both sides, on which—many of them sunk in soil—are pot plants, such as Crotons, *Dracænas*, Palms (chiefly *Areca luteascens* and a few

Pritchardia pacifica), flowering *Anthuriums*, and *A. crystallinum*, all ready for sale.

The centre of this house is laid out with large beds—about eight in all, nicely undulating and edged with rockery—of various shapes, circular, oblong, diamond-shaped, &c. Two of them have small tanks. These beds entirely occupy the body of the house, and are divided by cross paths from each other, running into the broad main-path encircling the house. They are planted with all kinds of stove plants, Ferns and Palms. Most striking is the big diamond-shaped bed in the centre, planted with *Dracænas*—nice, young, healthy plants some 2 to 3 feet high; the bed is well arranged, sloping on all sides, the soil being completely covered with *Selaginella Martensii*. Only the best varieties are grown, such as *metallica*, *Regina*, *Bausei*, *Cooperi*, *elegans rubra*, *Duffii*, a variety from Australia, with a short red leaf—very good and pretty; but the best of all is *Mrs. Hoskins*, a very fine thing. Its leaf is very dark, 8 inches broad, stiff, pendulous; it was found by his brother in the Fiji Islands.

The next most handsome bed is one 40 feet long by 12 feet wide—all Crotons—the best varieties. The plants look in splendid condition—they vary from 2 to 4 feet high; the soil, likewise, quite hidden by *Selaginella Martensii*, rises towards the centre of the bed. The varieties most represented are the best we have, but two or three are particularly fine. *Rubro-vittata* is one of the most striking, with a broad, red, jagged band down the centre of an almost black leaf. *Indian Prince*, with a long, narrow, curled, sub-pendulous leaf, 12 to 15 inches long, orange and black in colour, is also good, as is *The Czar*, and *Sir Ashley Eden*, another fine orange-tinted variety.

The other beds are a mixture, as I have said, of stove plants, all planted out. In the one nearest the office is a big bush of *Heliconia rosea striata*, with very pretty pink-lined foliage, nearly 6 feet high by 6 feet through, opposite a *Maranta Simonsi*, almost as big; close by is an *Alocasia gigantea* some 10 feet high, the hastate leaves being 4 feet long. Another peculiar *Alocasia* is one Mr. Chatterjee has obtained from Singapore; it is not handsome, but is strange, as it has on the lower side of the mid-rib of every leaf another small very well-developed leaf.

In the second bed are some good *Marantas*, *Aralia gracillima* several feet high, and therefore leggy; *Dracænas*, some dwarf *Panax*, such as *Victoria multifida*, whilst the same large-leaved *Selaginella* runs all over the low rock-edging.

In another bed further down is a pretty variegated *Zingiber* by the side of *Z. D'Arcey*—though not so highly variegated, it is a stronger grower. *Anthurium crystallinum* is very pretty, when it thus gets a chance of luxuriating planted out; *Piper ornatum* and some *Justicias* are also good.

In the third bed is a fine piece of *Stevensonia grandiflora*. *Cycas Rumphii* in another bed is good, with stronger, and broader foliage than *C. circinalis*. *Adiantum peruvianum* grows strongly, and *Pavetta borbonica* is at home. *Marantas* and other low-growing stove plants are numerous. In the bed at the end of the house, with water running through it, is a pretty *Dracæna umbraculifera*, and some fine *Calamus*, whilst at one end is a *Pritchardia grandis* 4 feet high in good condition.

Bearing to the right is a large enclosure, also under Oollu-grass—one walks from the show-house into this; here in long beds, edged with brick, stand hundreds of young Crotons, *Dracænas*, *Heliconia aurea striata*—rather green, however; Ivory Palms, 3 feet high—a reminiscence of *M. Schneider*; *Panax*, *Aralias*, including some young *A. Chabrieri*, a nice batch of *Dieffenbachia magnifica*, a few pieces of a new *Asparagus*, pretty, but I do not think it will prove so generally useful as those we have. From this house one passes into the Orchid-house, in the centre of which is a tank surrounded by four level stone-edged beds some 3 feet high, on which are plants. At both ends of the house are four big squares; these are filled with *Phalænopsis* suspended about 4 feet from the ground from iron wire stretched tightly across between iron uprights in each end of the bed. As all the plants hang exactly level the effect is very pretty; they are chiefly in low pans, wooden baskets being seldom used, and are potted in broken burnt brick and peat—no moss is used. In these four squares hang suspended several hundred *Phalænopsis grandiflora* and *P. Schilleriana*; the latter are good, nice, clean, healthy young plants, as are the majority, though not all of the former. *Cattleyas* and *Lælias* hang round the four sides of the house. On one of the stone beds close to the

bank are *Vandas*, chiefly tricolor and *cærulea*; on another is a fine batch of *Phaius grandiflorus*. Some *Dendrobium superbiens* suspended near are very good, having great, long, strong stems; so has *D. undulatum*—I measured some stems 4 feet long, fine healthy pieces. *Oncidium Kramerii*, amongst the *Cattleyas* on one side, looks well, and *Oncidium ampliatum majus* is healthy, making plump bulbs. It is from this house the Orchids are taken into the show-house, first described during the annual exhibition in March. Mr. Chatterjee tells me he sends a lot to England and Australia for sale by auction, and finds it pays him. A big *Ficus repens*, with leaves 3 to 4 inches long, covers the west side of this grass-covered house.

We then returned, and passed by the potting-shed to a very large house, 200 feet by 60 feet, just being built. It has low brick walls, but is to be covered with Oollu-grass (you will notice different grasses are used in different parts for this purpose). Down the centre runs a broad brick bed, on either side of which two narrower ones are in course of construction, with paths between; this makes five in all; a cross-path through the middle of the house divides these beds. There are several tanks being made, in which fountains are to be erected to run all day. Mr. Chatterjee buys his materials, and erects the house himself. When he is away the work stops; but it matters not—time is of no value. This house is parallel, and close to the house first described. The potting-shed leads into a pretty little fernery sunk below the level of the ground, reached by a few steps. Here are chiefly *Adiantum*, fresh and clean, with about as fine a batch of *A. Farleyense* as I have seen in India. Small *Aroids* are good, and a row of nice young *Phalænopsis Schilleriana* hangs on one side from the roof. Beyond this house is a row of frames for propagating purposes. Mr. Maries has the credit of having introduced these into India. Mr. Chatterjee tells me such things were unknown before.

The frames in question are of glass, 300 feet long, and contain newly-rooted cuttings, some just struck, of Crotons, foliage *Begonias*, store-pots of *Coleus*, *Caladium argyrites*, *Dieffenbachias*, *Alocasia Thibautiana*, *Cyrtodeira fulgida*, of a much richer colour than with us; there are also several pits of *Adiantum*.

Close by, outside, is a big piece of *Croton Kingianus*, some 9 feet high, only three years planted. It is very showy, with its large yellow variegated leaves.

Behind this *Croton* are some *Vanda teres* and *Renanthera coccinea*, the former 3 to 4 feet high, the latter with shoots 5 feet long. Mr. Chatterjee has seen a shoot 11 feet long. These are grown all the year round, outside, in full sun, on teak sticks; in the warm weather they receive water twice daily, but in the cold season only once. They flower well.

Behind the pits are oblong beds, leading up to a big pond opposite to the entrance to the grounds, though there is a fine stretch of grass between the gate and the pond. In the centre of these beds is a row of *Roses* in fair condition, with annuals on each side.

Crossing a small bridge, over the neck of another long pond, which runs up to the extremity of the grounds, one soon reaches the Palm-house, 100 feet by 50 feet, also under grass.

On one side of this bridge is a fine *Bauhinia*, several yards in diameter; whilst near the house is an exceedingly pretty flowering shrub, with very numerous four-lobed yellow blossoms, 2 to 3 inches in diameter—*Brunfelsia americana*. The contents of this Palm-house are chiefly *Areca lutescens* of all sizes—many hundred plants. Even at this moment Mr. Chatterjee tells me he has 300 out. These Palms stand in pots in squares, all ready for furnishing. A few *Kentias*, and a *Chamædorea* or two, were scattered about. In the centre is a raised stone circular tank, with some fine big pieces of *Asplenium nidus*, in big pots, on short supports, just above the water-level. Round the sides *Orchids* hang from the roof in considerable quantity. *Dendrobium aggregatum*, *nobile*, *fimbriatum*, *superbiens*, *chrysotoxum*, and *Farmeri*, were very good; as were several dozen *Phalænopsis Schilleriana*. At the end, and along the sides, placed on the ground within a low brick edge, were many hundred pots of Ferns, chiefly *Adiantum Colisii* and *A. tenerum*. I must not forget to mention, before reaching the Palm-house, a model plantation of Mangos, just put out, and classified according to Mr. Maries' work. Mr. Chatterjee has over 100 varieties, James H. Veitch.

(To be continued.)

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending September 10.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.					
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.					
0	2 —	61	0	— 19 + 212	5 —	171	29.7	22	28	
1	2 —	64	0	— 189 + 241	5 —	134	18.3	36	33	
2	3 —	74	0	— 117 + 186	3 —	131	16.8	39	31	
3	5 —	73	0	— 111 + 210	5 —	122	16.2	35	38	
4	4 —	75	0	— 79 + 230	6 —	116	15.2	29	35	
5	5 —	83	0	— 92 + 138	5 —	102	13.6	37	42	
6	2 —	72	0	— 96 + 193	6 —	133	29.1	40	35	
7	3 —	81	0	— 65 + 165	1 —	134	23.3	32	35	
8	3 —	85	0	— 26 + 117	6 —	121	17.7	24	42	
9	1 —	81	0	— 78 + 122	2 —	147	21.8	29	31	
10	1 —	95	0	— 10 + 132	0 aver	131	26.1	25	34	
*	3 —	104	0	+ 71 + 42	5 —	121	17.4	37	49	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.
Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending September 10, is furnished from the Meteorological Office:—

"The weather was generally cloudy in the western and north-western districts, with frequent, but mostly slight falls of rain. In the more southern and eastern parts of the Kingdom, the conditions were fairer and drier.

"The temperature was below the mean in all districts; in Ireland the deficit was only 1°, and in Scotland 2°; but, in England it ranged from 3° to 5°. The highest of the maxima were recorded at most stations on the 10th, and varied from 63° in 'Scotland, N.,' and 64° in 'England, N.W.,' to 70° in 'Scotland, E.' During the greater part of the week the daily maxima scarcely exceeded 60°. The lowest of the minima were registered on rather irregular dates; they ranged from 33° in 'Scotland, E.,' 34° in 'Scotland, W.,' and 35° over eastern and central England, to 40° in 'Ireland, S.,' and 46° in the 'Channel Islands.'

"The rainfall just equalled the mean in 'Ireland, S.,' but in all other districts it was less than the normal. Over eastern, central, and southern England, the fall was very slight.

"The bright sunshine was below the mean for the time of year over the Kingdom as a whole, but above it in 'England, N.E.,' and some parts of Scotland. The percentage of the possible amount of duration ranged from 22 in 'Scotland, N.,' 24 in 'England, S.W.,' and 25 in 'Ireland, S.,' to 37 in 'England, S.' and the 'Channel Islands,' 39 in 'England, N.E.,' and 40 in 'Scotland, W.'"

MARKETS.

COVENT GARDEN, September 15.

MARKET quiet. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 1 0-3 6	Peaches, per doz. ... 2 0-6 0
Grapes, per lb. ... 0 6-1 6	Pine-apples, St. Michael ... 4 0-6 0
Kent Filberts, per lb. 0 9-...	Plums, p. half-sieve 2 0-4 0
Lemons, per case ... 15 0-35 0	
Melons, each ... 0 6-1 3	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Ferns, various, doz. 4 0-9 0
Aspidistra, per doz. 15 0-30 0	per 100 ... 5 0-8 0
— specimen, each 7 6-21 0	Ficus elastica, each 1 6-7 6
Asters, per doz. ... 3 0-6 0	Fuchsia, per doz. ... 3 0-6 0
Balsams, per doz. ... 3 0-6 0	Heliotrope, per doz. ... 3 0-6 0
Begonia, per doz. ... 6 0-12 0	Hydrangea, per doz. ... 9 0-18 0
Campaula, per doz. 6 0-9 0	Lilium, various, doz. ... 18 0-30 0
Chrysanthemums, p. doz. ... 4 0-12 0	Marguerite, per doz. 4 0-12 0
— large plants, ea. 1 6-2 6	Mignonette, per doz. 4 0-5 0
Coleus, per doz. ... 3 0-6 0	Palms, various, each 2 0-10 0
Cyperus, per dozen 4 0-10 0	— specimens, each 10 6-84 0
Dracena, each ... 1 0-5 0	Pelargonium, p. doz. 6 0-12 0
	— scarlet, p. doz. 2 0-4 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0-4 0	Odontoglossum ... 2 0-6 0
Asters, p. doz. bun. 1 6-3 0	— crispum, 12 blms. 2 0-6 0
Carnations, 12 blms. 1 0-2 0	Mignonette, 12 bun. 2 0-4 0
— 12 bunches ... 3 0-6 0	Myosotis, or Forget-me-not, 12 bunches 2 6-4 0
Chrysanthemums, p. doz. blooms 0 6-2 6	Pansies ... 1 0-2 0
— p. doz. bunches 3 0-9 0	Pelargonium, scarlet, per 12 bun. 2 6-4 0
Cornflower, 12 bun. 1 6-3 0	— 12 sprays ... 0 6-1 0
Eucharis, per dozen 1 6-3 0	Poppies, 12 bunches 2 0-4 0
Gardenia, per dozen 1 6-3 0	Primula, double ... 4 0-6 0
Gladiolus, doz. bun. 6 0-12 0	Pyrethrum ... 2 0-4 0
— p. doz. spikes 1 0-2 0	Roses, Tea, per dozen 1 0-2 0
Heliotrope, per doz. sprays ... 0 3-0 6	— coloured, dozen 1 0-1 6
Lavender, doz. bun. 4 0-6 0	— yellow (Marechals), per doz. 2 0-5 0
Lilium Harrisii, doz. 2 0-4 0	— red, per dozen ... 1 0-2 0
— various, do. ... 1 0-3 0	— outdoor, 12 bun. 2 0-6 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	Stephanotis, 12 sprays 1 6-3 0
Marguerite, per doz. bunches ... 3 0-4 0	Stocks, doz. bunches 3 0-4 0
Orchids:—	Sunflower, doz. bun. 2 0-6 0
Cattleya, 12 blms. 5 0-9 0	Sweet Peas, doz. bun. 1 0-3 0
	Sultan, 12 bun. 1 6-3 0
	Tuberose, 12 blms. 0 3-0 6

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-6 0
Beans, French, lb. ... 2 6-3 0	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 2 0-3 0	Parsley per bunch ... 0 3-0 6
Carrots, per bunch ... 0 4-0 6	Shallots, per lb. ... 0 6-...
Cauliflowers, each ... 0 3-0 6	Spinach, per bushel 3 6-...
Cucumbers, each ... 0 4-0 6	Tomatoes, per lb. ... 0 4-0 9
Endive, per dozen ... 2 0-3 0	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

Market not quite so firm. Arrivals much heavier. Buyers not anxious to buy; only from day to day. Prices, 60s. to 70s. J. B. Thomas.

SEEDS.

LONDON: Sept. 14.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended, with but little business doing. Trifolium seems about used up; the demand during the last few days has improved. Winter Tares being very scarce, and much wanted, have advanced. Sowing Rye keeps reasonable. High prices are asked for this season's Italian Ryegrass. Samples of new Essex White Mustard are now coming to hand. Rape seed is obtainable at moderate rates. Bird seeds move off slowly at Monday's figures. There is no change to-day in either Buckwheat, Darn, or Linseed.

NOTICES TO CORRESPONDENTS.

*. PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

ASPARAGUS PLANTS: W. W. Yes, they are easily transplanted if the operation be done just as growth has begun. The land should be heavily manured, and trenched during the winter, not necessarily throwing the bottom soil to the top, unless it be of good quality. If it be dug two spits deep, put rough half-decayed manure in the bottom of each trench, and a good layer of rich decayed manure between the top and lower spits. See that the drainage of the land is good.

BAD FLAVOUR IN GRAPES: C. T. We could detect none; indeed, they were very nicely flavoured.

BLISTER ON VINE LEAVES: D. R. No leaves were found in your letter.

CARNATIONS: G. S. The leaves are swarming with microscopic eel-worms, which are too common. The creatures are introduced in the soil, which should be turned out and the affected plants burnt.

CHRYSANTHEMUM BUDS: J. P. It is rather late to be "taking" the buds of Chrysanthemums. It will in this case be best to take off each shoot all the buds but the largest, whether terminal or lateral.

CHRYSANTHEMUMS: H. R. G. The flowers remain in their pristine leafy condition. We cannot assign any definite reason, but it is surely no matter for surprise that a plant treated in so unnatural a manner as a show Chrysanthemum is should occasionally resent the interference with its natural mode of life. From a florist's point of view, we share your disgust; from a physiological standpoint, we think them very interesting.

CHRYSANTHEMUM SPORT: J. T. Your sport from La Vierge is very pretty, and the colour is delicate. There are so many, we cannot say whether yours is better than any other, but we should deem it worth propagating.

ERRATA.—Figs: For Douro Nebra read Douro Sebra, and for D'Ager read D'Agen.

FERTILISED ODONTOGLOSSUMS WITH CŒLOGYNE CRISTATA: C. H. There is nothing unusual in an Odontoglossum plant carrying seed pods. You cannot be sure the contents of the pods are fertile seeds without testing them by sowing.

GARDENING DIRECTORIES: H. R. G. There are two published. One at 37, Southampton Street (Garden office), Strand, W.C.; another at 171, Fleet Street, E.C. (Journal of Horticulture office).

GRAPES: M. M. Spot: see our previous issue.

GRAPES DISEASED: Mountain Ash. The berries have begun to shank, although an examination of the roots showed that these were mostly healthy. A few small ones were dead. There has been some mismanagement, but what it is we cannot say.

GRAPES SHANKING: G. B. What causes this is a moot point, sometimes overcropping, robbing the Vines of much of their foliage whilst in full growth, loss of the finer roots from sour soil, or bad drainage. We cannot say, without knowing more about the Vines, what has caused it in your case.

GRAPE VINES: Epton. The check to growth which we mentioned may have arisen from a drop in the temperature, or from your saturating the border with cold water—manure or other. You seem to be treating your Vines as if they were voracious creatures, standing in need of blood, bones, guano, &c.; and they might, if the drainage were good, escape the probable evils of such a diet, and as it is not, the injurious effects of a bad state of the drainage are made the greater. Examine the roots, bringing them near the surface if deep in the soil; prune away all decayed or unhealthy roots, and as a beginning employ only good loam, lime rubbish, and broken bones.

LEAVES OF AQUILEGIA BITTEN OFF AND PLANTS DYING: W. R. F. The grub that you sent is probably the larva of the summer cockchafer, Melolontha solstitialis. They make perpendicular burrows in the earth, like the one that you found in the soil of the pot containing the plant with bitten-off leaves. The grubs find their food in the roots of plants, and we think that mice or birds may have bitten the leaf-stalks through. Your young Aquilegias may, in your dry gravelly soil, have dried from lack of moisture, the plants delighting in a soil that is moist. If you wish Aquilegias to do well in the border, prepare some stations for the plants by mixing a good proportion of heavy loam and burnt earth with the staple soil. These stations should have the soil thrown out to a depth of 1 foot; the soils well incorporated together and returned to the holes.

MILDEW ON PEACHES: J. D. There is nothing that you can do to save the fruit from loss this season. To prevent in the future the growth of mildew on the Peaches, limewash the walls of the peach-house, putting a quart of dissolved sulphur into each pailful of whitewash. After pruning the trees and burning all the trimmings, paint them with a mixture of clay, cowdung, lime, and sulphur; also use on the hot-water pipes the same sort of limewash as that put on the walls. Keep a little sulphur mixed to the consistency of mustard in saucers in various places in the houses during next season. Use in the water with which the trees are syringed some of the recommended anti-blight composition sold by nurserymen. Your endeavour should be to keep mildew out of the place.

MITES IN TURNIP SEED: Seedsman. If you were to put the seed into a close iron chest in the open air far away from dwellings and lights or fires, and then place bisulphide of carbon in a saucer on the top of the seed, shutting all up close, the vapour would descend, destroying all insect life without injuring the seed.

MOSS ON SOIL OF FERN SEED PANS: *Moss.* The Moss springs from the spores of Moss present in the peat, &c. Destroy these by baking, not charring it; then put it in a sack and bury it in the earth till moist enough for use. Scalding would have nearly as good an effect in preventing Moss growing as baking.

NAMES OF FRUITS: *G. S.* 1, Cellini; 2, Colonel Vaughan; 3, Early Julian; 4, Claygate Pearmain; 5, not known; 6, Gloria mundi.

NAMES OF PLANTS: *Jas. Cocker & Sons.* *Reseda alba*; a Mediterranean species long since introduced to gardens, and naturalised in the south of England and Ireland.—*An Old Reader.* *Mandevilla suaveolens.* It is rarely that the plant fruits so freely as yours seems to have done.—*C. W. D.* *Veronica exaltata.*—*B. L.* *Physostegia virginiana alba.*—*J. D. 1.* *Coreopsis tinctoria*; 2, *Pyrus aria*; 3, *Hypericum Moserianum*?—*J. M. 50.* *Scolopendrium vulgare crispum*; 80, *A. Filix-mas paleacea*; 100, *Polystichum Lonchitis*; 120, *Athyrium Filix-femina Fieldia*.—*J. P.* *Sparmannia africana*.—*G. H. L. S.* *Cattleya granulosa var. Dubuyssoniana.* The lip of the *C. aurea* is unusually dark, and the flower of *C. aurea* a very good one.—*M. K. 1.* *Davallia canariensis*; 2, *D. (Leucostegia) immersa*; 3, *Cupressus* sp. probably; 4, *Dasylirion acrotrichum*; 5, *Croton Weissmannii*; 6, *Croton*, one of the numerous garden forms.—*W. P.* *Crithmum maritimum lioni* *Daveauana*; 3, *Begonia nitida alba*; 4, the *Abutilon* is very pretty.—*H. R. G. 1.* *Samphire*.—*T. C. S., Polmont.* 1, Oats; 2, *Pel. Caladium Beethoven*; 3, *C. Chantini*; 3, *C. Prince Albert Edward*; 4, *Hibiscus Rosa-sinensis*, fl.-pl.; 5, *Oncidium flexuosum*; 6, *Salvia splendens*; 7, *Jasminum grandiflorum*; 8, *Caryota urens*.—*J. P.* *Aristolochia grandiflora*, *Stapelia patula*, figured in *Hook. Ic. Plant.*, 1914.—*W. J. P.* *Nicotiana glauca*.

NEW VARIETIES OF PINKS. *H. E.* Your seedlings from Pink Mrs. Sinkins are fine things, and blooming at this late part of the season, they are doubly welcome.

PEACHES: *C. W. H.* Smashed in transit, owing to bad packing.

PRICE LISTS OF CUT FLOWERS: *E. N.* We know of no such lists.

RATING OF NURSERIES: *W. F. Boff.* Apply to the gentleman whose letter on the subject we published last week. In these cases it is always cheaper in the end to seek the best legal advice.

SCUM ON POND: *J. P.* The overflow of your pond should have a so-called frog's-mouth. The water would then, when it was driven that way by wind, lave the edge, provided the pond is full, carrying the scum away into the outlet. Failing such a contrivance, it can be drawn to the side with a long piece of scantling, having a rope attached to each end.

SIX VARIETIES OF PEACHES AND TWO NECTARINES FOR HOUSE FORCING: *Anxious.* Peaches: Alexander, Hale's Early, Early Grosse Mignonne, Grosse Mignonne, Noblesse, and Bellegarde; Nectarines: River's Early and Spencer.

STEPHANOTIS GRANDIFLORA: *Latter.* It is not at all rare for this plant to bear seed-pods.

TOMATOS: *C. B. & G.* Very nice, but we have tasted better.

TRANSPLANTING ROSES IN A HOUSE: *G. H.* The end of the month of October, or even earlier, if the growth is well ripened. If the operation be carefully done, there should be no injury to the early spring blooming of the plants. Lift them with all their roots intact; prune back the strongest of these to half their length; and plant again very firmly in rich loamy soil; afford a good watering, and if the remaining foliage should flag, syringe it once daily, and afford a little shade when the sun is hot.

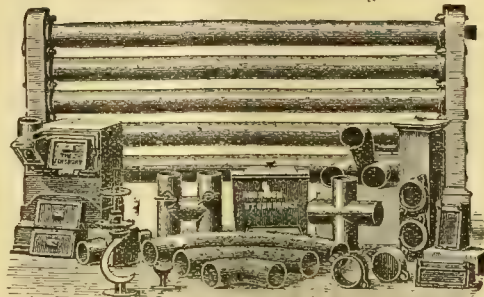
PHOTOGRAPHS RECEIVED, WITH THANKS.—*J. U.*—*W. C.*, Madresfield.—*T.*—*H. B.* (with thanks).

COMMUNICATIONS RECEIVED.—*J. Cheal & Sons.*—*W. C.*—*J. U.*—*T. B. H.*—*D. T. F.*—*J. S.*—*E. A. H.*—*J. C. & Co.*—*C. T. R.*—*A. H. B.*, Swanley.—*W. S.*—*E. M. C.*—*J. D.*—*E. P. v. G.*—*S. E.*—*J. P.*—*N. S.*—*M. K.*—*G. C.*—*G. L. S.*—*Dobbie & Co.*—*J. T. H.*—*G. H. E.*—*J. M.*—*R. R.*—*G. S.*—*R. M. L.*—*T. B.*—*H. B.*—*Ch. de B.*—*W. E. G.*—*F. W. B.*—*A. B.*—*Skinner.*—*H. J. V.*—*B. W.*—*B. H.*—*B. R.*—*E. C.*—*Ladoicea.*—*E. B.*—*A. L.*—*A. E. G.*—*R. N.*—*G. R. M.*—*J. Cheal & Sons.*—*W. J. B.*—*S. E. B.*—*R. A. R.*—*J. Box.*—*E. M. C.*—*C. P.*, next week.

THE BED BUG, in hot weather, he's about.

To quickly and permanently rid your beds of Bugs, mix small box of "ROUGH ON RATS" thoroughly with a quarter pound of lard, or other grease; with this mixture fill all holes, openings, cracks, and crevices in the bedstead. This method never fails; effective and lasting. Cut this out. "ROUGH ON RATS" is in 7½d. and 1s. boxes at Chemists.

THOS. W. ROBINSON,
Dennis Park Ironworks, Stourbridge.



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SOCKET HOT-WATER PIPES.

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4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack; 5 sacks, 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULDS, and LEAF-MOULDS, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price List.—*H. G. SMYTH*, F.R.H.S., 21, Goldsmith's Street, Drury Lane (late called 17A, Coal Yard), W.C.

The Original and Only Makers of the GENUINE RIVETED TRENTHAM BOILERS

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SILVESTER'S PATENT TRENTHAM,
With Special Provision for Cleaning the Inside thoroughly (a Most Important Point).

These Boilers, after long experience, have proved themselves the Most Efficient, Economical, and Lasting Boilers extant.

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FRED SILVESTER & CO.,

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CASTLE HILL WORKS, NEWCASTLE, STAFFORDSHIRE.

STOCK	SIZES	GLASS
Inches.	Inches.	
14x12	20x15	
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The maximum of utility and
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Constructed of Strong Iron Up-
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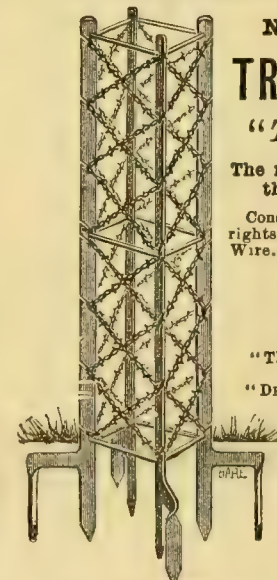
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"DEAR SIRS,—I have now had
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your PORCUPINE TREE
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purpose, so you may send me
50 more as before. I en-
close cheque for your
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Practically Indestructible. Durability of Steel.
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GREENHOUSES, CONSERVATORIES,
VINERIES, &c., of Plain or Ornamental Design, glazed upon Hawkins' Perfection System, best workmanship, best material, and cheapest house in the trade for really good work. State requirements fully, size of house, whether span or lean-to, and receive (free) specification. Several stock and nearly new secondhand Houses to be sold at a great sacrifice, to clear.

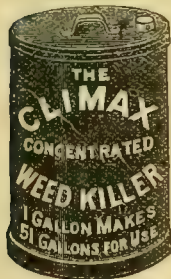
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The very best and Cheapest Manure for Chrysanthemums.
Try it, in Tins, 1s.; 7lb. 1s. 6d.; 14lb. 2s. 10d.; 28lb. 5s. 6d.;
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A few extra-fine PRIMULAS, at 2s. per dozen.
Guaranteed the very best strain.

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May be had through all Seedsmen and Chemists.



Prices:—1 Gall. 3/- (tins included),
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2/- per Gall. Carriage paid on 5 Gall.
and upwards.

Kills all Weeds on Garden Walks,
Carriage Drives, &c., &c. Brightens
the Gravel. One application will keep
the Walks Clear of Weeds for a
whole Season.

Prepared Solely by

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Acknowledged to be the safest and most effective
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The Only Insecticide Instantaneous in its Action.
Destroys Brown and White Scale, Mealy Bug, Thrip, Red
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Instantaneous and effective in the removal of Mildew from
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1 pint, 2s.; 1 quart, 3s. 6d.; ½ gallon, 5s.; 1 gallon, 9s.;
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SELECTED, in blocks, very fibrous, 8s. per sack; 5 for
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BROWN FIBROUS PEAT for Azaleas, Rhododendrons, and
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PEAT-MOULD, LEAF-MOULD, and FIBROUS LOAM,
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Send Postal Order for Sample Sack.

Special terms to the Trade. For Price List apply to

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EPPS'S Selected PEAT,

For ORCHIDS, STOVE PLANTS,

Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton,
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Rich fibrous LOAM, superior LEAF-MOULD, Coarse, Crystal,
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Loam, Sand, Manures, Tobacco-Paper, Insecticides, Weed-Killer,
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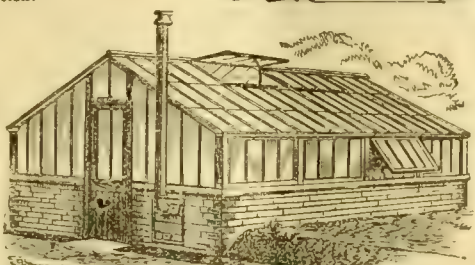
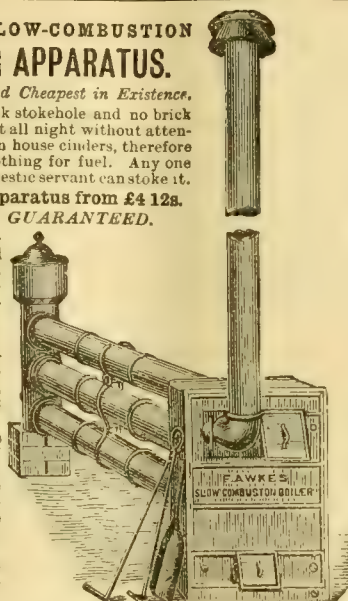
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Requires no sunk stokehole and no brick
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numerous Testi-
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Greenhouses, Forcing-houses, Pits, Frames, Plant
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SAM DEARDS' PATENT SELF-WATERING SHELF
FOR PLANTS ON SHELVES.

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ITS ADVANTAGES ARE—

- 1st.—No waste of water, all water being absorbed by the plants.
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other method.
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beneath entirely prevented.
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by the plants.
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15-oz., per 100 ft., 8s. 6d. { 12x10, 18x12, 18x14, 24x14
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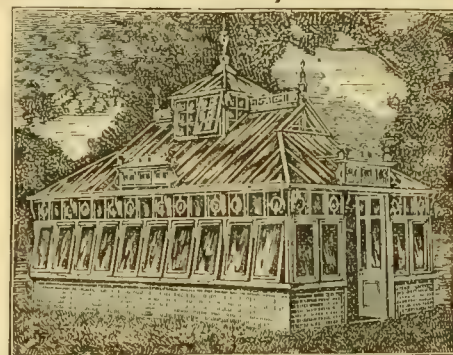
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sufficient to make up a load can be sent at once.

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Price LIST and Estimates free on application.

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a winter dressing for Vines and Orchard-house trees, in lather
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FIBROUS PEAT for Stove and Greenhouse use. RHO-
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Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo
Canes, Rustic Work, Manures, &c. Cheapest Prices of—
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SHILLINGS PER MONTH.

The BIRKBECK ALMANACK, with full particulars, post-
free. FRANCIS RAVENSCROFT, Manager.

THE

HORTICULTURAL DIRECTORY

For 1893.

GARDENERS who have changed
their Situations since the last publication are re-
quested to send the correction to the Editor without
delay; and—

NURSERYMEN, SEEDSMEN, and
FLORISTS of GREAT BRITAIN and the CONTINENT
will kindly send their card if any alteration has been
made in their Firm.

SPECIAL NOTICE.—The Publisher, in calling attention to
the HORTICULTURAL DIRECTORY for the Year
1893, would specially refer to the great improvement that is
made in this issue by the introduction of many useful and
attractive features.

ADVERTISEMENTS

Will be inserted at the rate of 42s. per Page; 25s. One Half;
and 15s. One Quarter of a Page.

E. H. MAY, 171, FLEET ST., LONDON, E.C.

THE GARDENERS' CHRONICLE

PUBLISHER'S NOTICES.

GARDENERS' CHRONICLE TELEGRAMS.—The Registered Address for Foreign and Inland Telegrams is "Gardchron, London."

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Scale of Charges for Advertising.

Head Line charged as two.

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9 " ..	0 5 6	20 " ..	0 11 0
10 " ..	0 6 0	21 " ..	0 11 6
11 " ..	0 6 6	22 " ..	0 12 0
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AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20s.

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Page, £8; Half Page, £4 10s.; Column, £3.

NOTICE TO ADVERTISERS.—In many instances Remittances in Payment of Repeat Advertisements are received without name, address, or anything beyond the postmark on envelope by which to identify the sender; this in all cases causes a very great deal of trouble, and frequently the sender cannot be identified at all. Advertisers are requested when Remitting to give their Names and Addresses, and also a Reference to the Advertisements which they wish repeated.

GARDENERS AND OTHERS WANTING SITUATIONS, 28 words, including name and address, 1s. 6d., and 6d. for every additional line (about nine words) or part of a line. These Advertisements must be prepaid. This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale.

Births, Deaths and Marriages, 5s. each insertion.

POSITION.—Advertisers are specially requested to note, that under no circumstances whatever can any particular position be guaranteed for advertisements occupying less space than an entire column.

POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to A. G. MARTIN, as, unless the number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.

N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

Advertisements for the current week MUST reach the Office not later than Thursday noon.

All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements, 41, WELLINGTON ST., STRAND, W.C.

SUBSCRIPTIONS.

All Subscriptions payable in advance. The United Kingdom, 12 months, 15s.; 6 months, 7s. 6d.; 3 months, 3s. 9d. All Foreign Subscriptions, including Postage, 17s. 6d. for 12 months; Post-office Orders to be made payable at the Post-Office, 42, Drury Lane, W.C., to A. G. MARTIN.

Subscribers who experience any difficulty in obtaining their Copies regularly, are particularly requested to communicate with the Publisher (in cases of delay in the delivery by post, the cover should be forwarded with complaint).

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E P P S'S
GRATEFUL—COMFORTING
C O C O A
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AND ITS RISKS SHOULD BE COVERED BY AN INSURANCE AGAINST

ACCIDENTS OF ALL KINDS

WITH THE OLDEST AND LARGEST COMPANY.

THE RAILWAY PASSENGERS' ASSURANCE CO.

For Prospectuses, apply to Agents, Railway Stations, and

Secs. { W. D. MASSY, 64, CORNHILL, LONDON.
A. VIAN,

GARDENING APPOINTMENTS.

Mr. J. ROSE, for 9½ years Head Gardener at Lockinge Park, Wantage, succeeds Mr. STOTT, as Gardener to Major R. ALLFREY, Wokefield Park, Mortimer.

Mr. FYFE, for 7 years Gardener at Overstone Park, Northampton, succeeds J. ROSE, at Lockinge.

Mr. T. SMITH, formerly of Mottesfont Abbey, Hants, as Gardener and Bailiff to J. D. CHATTO, Esq., The Daison, Torquay.

Mr. W. DAVIES, formerly Head Gardener to Lord BATEMAN, Shobdon Court, Herefordshire, as Head Gardener to the Hon. HENRY EDMUND BUTLER, Nidd Hall, Ripley, Yorkshire.

Mr. DAVID EDWARDS, late Foreman at Woodcote House Gardens, Epsom, Surrey, as Head Gardener to E. F. KELLY, Esq., Sand Holme, Sand, Surrey.

CATALOGUES RECEIVED.

T. S. WARE, Hale Farm Nurseries, Tottenham, London, N.—Dutch and other Bulbs, Hardy Perennials, Pyrethrums, Phloxes, Fancies, &c.

G. CHAUNDY, New Marston, near Oxford—Carnations and Picotees.

G. PHIPPEN, Reading—Bulbs, &c.

THOS. KENNEDY & Co., Damfries—Dutch Flower Roots.

WM. SAMSON & Co., Kilmarnock—Bulbs, Plants, &c.

EDMONDSON BROS., 10, Dame Street, Dublin—Dutch Bulbs, Tubers, &c.

H. CANNELL & SONS, Swanley, Kent—General Catalogue and Book of Reference.

F. KNOLL, Leipzig—Stove and Greenhouse Plants.

DOBBIE & Co., Rothesay—Bulbs, Fruit Trees, &c.

W. TAIT & Co., Dublin—Flower Roots and Garden Appliances.

HOGG & ROBERTSON, Dublin—Dutch Flower Roots.

JAMES YATES, Stockport—Bulbs and Flowering Roots.

JNO. R. BOX, Croydon—Begonias.

VON V. DÖPPLEB, Erfurt, Germany—Bulbs and Tubers.

P. BARR & SON, King Street, Covent Garden, London—Dutch Bulbs, Duffelds, &c.

E. H. KRELAKE & SON, Haarlem, Holland—Bulbs for Autumn Planting.

ALEXIS DALLIERE, Faubourg de Bruxelles, Ghent, Belgium—Azalea indica, A. mollis, Camellias, Palms, Ferns, &c.

PARTNER WANTED, to Assist in the further development of a Hardy Plant and Specialty Business. The Nursery is small, but the Stock of Herbaceous, Alpines, and other rare Hardy Plants is large, and selected with a special knowledge of popular requirements. Capital required, from £100 to £500. A good opening for anyone wishing to enter this branch of the profession.—ASTILBE, Link End Cottage, Malvern Link.

PARTNER WANTED, active or otherwise, with Capital, to Extend Business for Growing Cut Flowers, Cucumbers, Tomatoes, Fruit, Vegetables, &c., for Market. Close to two stations.—HORTUS, Skiltons, Newsagent, Leatherhead.

PARTNERSHIP.—Advertiser (age 30) seeks PARTNERSHIP in a well-established Nurseryman and Florist's Business, in or near a good Town, within easy reach of London.—Particulars to S. W. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

JOHN HORTON begs to THANK the APPLICANTS for the Pleasure Ground FOREMAN'S PLACE, and to say that it is FILLED. Original testimonials will be returned.—Welbeck Gardens, Worksop, Notts.

WANTED, MANAGING FOREMAN (with a view to Partnership, and ultimate succession), in a small healthy Business devoted to the Sale of Hardy, Herbaceous, and Alpine Plants, in a central populous neighbourhood, where there is a good connection. Must have command of from £200 to £300.—CALTHA, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED, a HEAD-WORKING GARDENER, October 1; Denbighshire; age 30 to 40, married; good character. Two men under. Must thoroughly understand Vines, Peaches, Flowers, Vegetables, &c. Wages 23s. per week with Commission on Sales, worth £4 to £5 per annum.—Apply, with full particulars and copies of testimonials, N. Messrs. Street & Co., 30, Cornhill, London, E.C.

WANTED, AT ONCE, a WORKING FOREMAN, for an Outdoor Nursery, with a thorough knowledge of Roses, Fruit Trees, and general Nursery Stock; capable of taking charge of men.—Apply, stating wages and references, to W. BALCHIN AND SONS, 87, Western Road, Brighton.

WANTED, a MARRIED MAN, thoroughly well up in the work of a small Nursery, Inside and Out. Must be energetic, handy, and obliging. Cottage on Premises.—W. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED, a young MAN, to take charge of a few Glass-houses. Must be competent to grow Grapes, Pines, Melons, Cucumbers, Mushrooms, Tomatoes, and Stove and Greenhouse Plants, especially Chrysanthemums.—References, wages required, and any other particulars to F. HUGHES, The Gardens, Overbury Court, Tewkesbury.

WANTED, a sober, steady MAN, thoroughly experienced in Mushroom Growing Outdoors.—Apply H. BAKER, Strand 37 and 38, Covent Garden, W.C.

WANTED, a young MAN, for the Soft-wooded Department; one used to a Market Nursery preferred. State experience, and wages expected, to W. FROMOW AND SONS, Sutton Court Nursery, Chiswick, W.

WANTED, as GROOM and UNDER GARDENER, a married Man, without young children, willing to be useful. Cottage found.—ELTHORP, Gerrard's Cross, Bucks.

WANTED, as an IMPROVER, a young MAN who has been accustomed to Greenhouse and Propagating Work. State age and experience, also wages required. A reference expected.—Apply to Messrs. GEO. JACKMAN AND SON, Woking Nursery, Surrey.

Seed Trade.

WANTED, for London Warehouse, strong, active, well-educated Youth, having four to six years' experience; exceptional references necessary. State particulars, age, and wage required, to R. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANT PLACES.

TO GARDENERS, AND OTHERS SEEKING SITUATIONS.

The Pressure upon our space at this season of the year is so great, we are compelled to state that advertisements received after 6 P.M. on Wednesday will, in all probability, be held over to the next week.

Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

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GARDENER and BAILIFF (WORKING).—Situation wanted as above, on a Gentleman's place. Practical Gardener, Farmer, and Fruit Grower. Kent, Surrey, or Sussex, preferred.—**W., 203, Parrock Street, Gravesend.**

GARDENER (HEAD).—**Mr. WARD**, Head Gardener to the Right Hon. the Earl of Radnor, Longford Castle, Salisbury, will be pleased to recommend a man of excellent character as above.

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GARDENER (HEAD).—Age 30; thoroughly experienced in Vines, Peaches, Melons, Early and Late Forcing, Stove, Orchids, Greenhouse, Flower and Kitchen Garden. Highest reference. Circulars objected.—**GARDENER, The Grove, Staple Wingham, Kent.**

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GARDENER (HEAD).—**A LADY** can strongly recommend an experienced, trustworthy Head Gardener. Nine years in her service.—**H. BAULT, Freshaw Gardens, Bishops Waltham, Hants.**

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GARDENER (HEAD, or good SINGLE-HANDED).—Age 30; life experience in all branches. Good references.—**E. BOOKER, 59, Ringford Road, West Hill, Wandsworth, S.W.**

GARDENER (good SINGLE-HANDED).—Age 25. Twelve years' good experience; excellent character. Married when suited.—**A. W., Wellington Road Nursery, Forest Gate, E.**

GARDENER (good SINGLE-HANDED, or where help is given).—Age 25; four years' good character.—**H. WOOD, Little Dalby, Melton Mowbray.**

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GARDENER (SINGLE-HANDED).—Age 27; understands Stove and Greenhouse Plants, Cucumbers, Tomatoes &c., and general routine of gardening. Total abstainer.—**H. WAYLING, 14, Canterbury Terrace, Maida Vale, W.**

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GARDENER (SECOND, Inside and Out, or good SINGLE-HANDED).—Age 24 single; ten years' experience. Good characters.—**C. M., Mr. A. Cook, Ashford Common, near Staines, Middlesex.**

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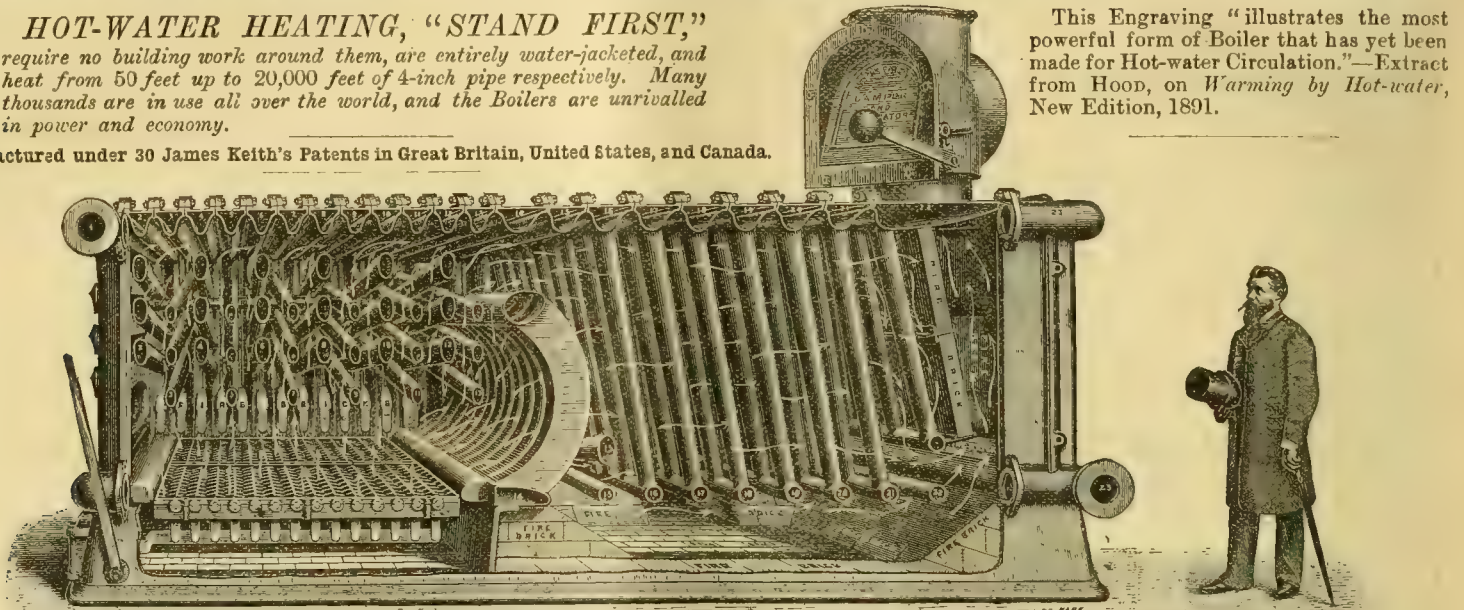
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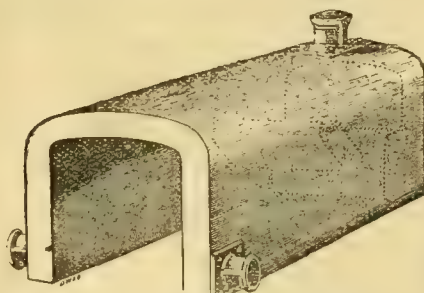
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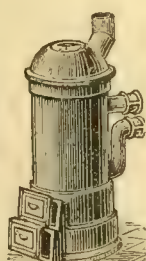
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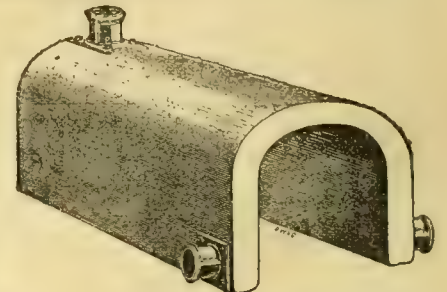
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2700.

No. 300.—VOL. XII. { THIRD
SERIES. }

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ADVERTISERS will greatly assist our efforts to get to Press earlier, by forwarding their favours as EARLY IN THE WEEK as possible.

Now Ready, in Cloth, 11s. 6d., "The Gardeners' Chronicle," Vol. XI., Third Series, January to June, 1892. The PUBLISHER, 41, Wellington Street, Strand, W.C.

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STANDARD MULBERRIES.—A fine Lot. Orders now booked previous to Auction Sale. Prices 42s. and 60s. per dozen. PONSFORD AND SON, Loughborough Park Nurseries, Brixton, S.W.

WANTED, offers of ONION "Ailsa Craig," large sound bulbs, true stock; size, weight, and price to be stated. Also Superlative RASPBERRY. V. S., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED (when ready), good berried AUCUBAS, grown in pots of a size suitable for Window Boxes. Also SKIMMIA JAPONICA, well berried.—Quote price per dozen or hundred, to WILLS AND SEGAR, Royal Exotic Nursery, South Kensington, London, S.W.

WANTED, LONICERA SEMPERVIRENS, CEANOTHUS Gloire de Versailles, BIGNONIA radicans major, B. grandiflora, hardy PASSIFLORAS, Evergreen Climbing ROSES, white and red EVERLASTING PEAS, and FUCHSIAS with long stems. All must be large plants in pots, well established. In EXCHANGE for good Showy ORCHIDS.—F. SANDER AND CO., St. Albans, Herts.

Calceolaria Cuttings. WANTED, good CUTTINGS of Golden Gem, any quantity at once; 5s. per 1000.—Offers to 16, Crown Court, Russell Street, Covent Garden, W.C.

WANTED, practical modern BOOKS on GARDENING, also on FRUIT GROWING. Full particulars to BOOK, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

CARTERS' BULBS for FORCING.

WHITE ROMAN HYACINTHS.—Price 15s. and 21s. per 100; 2s. and 3s. per dozen. PAPER-WHITE NARCISS.—Price 6s. per 100; 1s. per dozen. DOUBLE ROMAN NARCISS.—Price 6s. per 100; 1s. per doz. BERMUDA LILIES.—Price 5s. and 10s. 6d. per dozen. All carriage free. Special quotations for quantities.

For full particulars see CARTERS' ILLUSTRATED CATALOGUE of BULBS, ROSES, and FRUIT TREES, Gratis and Post Free. 237 and 238, HIGH HOLBORN, LONDON, W.C.

LAXTON'S STRAWBERRIES.—Sensation, very large, fine flavour; Scarlet Queen, first early, best new; Noble, Competitor, Latest of All, Commander, White Knight, J. Ruskin, Waterloo, and all best sorts. Lists free. T. LAXTON, Seed Grower, Bedford.

PRIZE PANSY PLANTS, for Early Spring and Summer Blooming. 1s. per doz.; 50, 3s. 6d.; 100, 6s. Show, Fancy, or Giant Yellow Varieties. Carriage paid. Cash with Order.—R. H. BATH, Osborne Farm, Wisbech.

LOVEL'S YORKSHIRE STRAWBERRIES. Well-rooted runners of Thury, Paxton, President, and others: 25, 1s.; 100, 3s. 6d.; 1000, 25s.; all carriage paid. LIST free.

W. LOVEL AND SON, Strawberry Growers, Driffield.

GOLDEN EUONYMUS, good bushy stuff, for Potting. Splendid Colour. H. H. MOORE, Chichester.

NARCISSUS, Double White, splendid strain, 20s. per 1000, on rail. Sample 100 free by post for 3s. 6d., 50 for 2s. Cash with order.—J. J. CLARK, Goldstone, Brighton.

DOUBLE VIOLET (Queen Victoria), the best dark Blue; in season after Marie Louise is over. Plants very strong. Price on application. W. H. DIVERS, Ketton Hall Gardens, Stamford.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maids Vale, London, W.

Dutch, Cape, and Exotic Bulbs. ANT. ROOZEN AND SON'S CATALOGUE for Autumn, 1892, now ready, contains Cultural Directions and full Descriptive Details of their immense Collections of New, Rare, and Fine BULBS and PLANTS for Autumn Planting. The Catalogue (104 pages in English) will as usual be sent, post free, on application to their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, London, E.C.; or themselves direct, at Overveen, near Haarlem, Holland. N.B.—No connection with any other firm of the same name.

THE MOST CERTAIN METHOD of KILLING GREEN and BLACK FLY or THRIPS, is by using CAMPBELL'S FUMIGATING INSECTICIDE. Try it. No. 3 Roll for 1000 cubic feet, 1s. No. 4 Roll for 2000 cubic feet, 1s. 9d.; post-free. CLIBRAN AND SON, Oldfield Nurseries, Altrincham.

Boulton & Paul's Outdoor Requisites. BOULTON AND PAUL, MANUFACTURERS, NORWICH.

Every Requisite for the Kennel and Poultry Yard, Aviaries, Pigeon Cotes, Pheasantries. Requisites for the Garden, Park, Pleasure Grounds. Wire Netting for Game and Sheep. Iron and Wire Fencing, Gates, &c. Send for Illustrated CATALOGUES, post-free, on application.

J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 10, Victoria Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers,

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY, at 12 o'clock, large consignments of first-class

HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland. 12 tons are sold every week.

Lotted to suit the Trade and Private Buyers. On view morning of Sale, and Catalogues had.

Monday Next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, September 26, at 12 o'clock,

100 AZALEA INDICA	50 FICUS
100 " MOLLIS	25 ASPIDISTRAS

100 PALMS, comprising Seaforthias, Corypha australis, Latania borbonica, and areca Baueri; 50 DRACENAS, including indivisa, conjestia, discolor, rubra, and lineata.

1400 grand Bulbs of LILIUM HARRISII, from 7 to 11 inches, 300 choice Narcissus, including Sir Watkin, ornatus, Ardigh, maximus, princeps, nobilis, Countess Annesley, Henry Irving; 22 bulbs of AMARYLLIS PROCERA, 4000 PALM SEEDS—Euterpe edulis and coccinifera baccaba; Rare IRIS, ANEMONES, Hardy CLIMBERS, CLEMATIS, AMPELOPSIS, &c.; Tree and Border CARNATIONS, and about 200 lots of Miscellaneous BULBS and PLANTS.

On view morning of Sale, and Catalogues had.

Tuesday Next Without Reserve.

The COLLECTION of ESTABLISHED ORCHIDS formed by Percy Lloyd, Esq., of Loughton Lodge, Loughton, who is giving up their cultivation in consequence of having to go abroad through ill-health.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, September 27, at half-past 12 o'clock, the above COLLECTION of ESTABLISHED ORCHIDS, including Cypripedium grande, fine plants; Dendrobium nobile nobiliss, Vanda Sanderiana, Peristeria elata, Sobralia macrantha alba, Cologynas, Cattleyas, of sorts; Angreum sesquipedale, Cologynas pandurata, Phaleonopsis, 200 Odontoglossum Alexandrine, 150 Dendrobium nobile, fine plants, useful for cut flower purposes.

On view morning of Sale, and Catalogues had.

Maida Vale.—Tuesday next, and following Days. GREAT UNRESERVED CLEARANCE SALE of GLASS ERECTIONS, PLANTS, ORCHIDS, and UTENSILS in TRADE, by order of Messrs. Hooper, Dyer & Co., the Land having been disposed of for Building Purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Pine-apple Nursery, Maida Vale, N.W., a few minutes' walk from Edgware Road and St. John's Wood Stations, on TUESDAY, NEXT, Sept. 27, and THREE FOLLOWING DAYS, at 12 o'clock precisely each day, the whole of the extensive Stock and utensils in trade, glass erections, and sundries.

ORDER OF SALE.

FIRST DAY'S SALE, TUESDAY, September 27.—Thousands of Palms in all sizes, including numerous specimens, Seaforthias, Latanias, and Kentias; specimen Araucarias, specimen Cycas, Zamias, and Tree Ferns; a quantity of smaller Ferns, and the principal portion of the plants in the Winter Garden and Conservatory.

SECOND DAY'S SALE, WEDNESDAY, September 28.—3000 established Orchids, mostly for Cool-house culture, consisting chiefly of Odontoglossum, Masdevallias, Cypripediums, and Oncidium; Gloxinias, also the fine collection of Caladiums, all to name.

THIRD DAY'S SALE, THURSDAY, September 29.—The outdoor Stock, including large quantities of Ives, and Herbaceous Plants in great variety; a quantity of the beautiful hardy Crinum Powelli and C. P. alba, Roses, Euonymus, Lilium, Hellebores, Standard Sweet Bays, &c.

FOURTH DAY'S SALE, FRIDAY, September 30.—The whole of the Glass Erections at the Nursery, comprising the magnificent Winter Garden and Conservatory, which was built at considerable expense; several Greenhouses, thousands of feet of hot-water Piping, Boilers, several old lights, Seed Drawers, Summer-house, horticultural implements, and utensils in trade.

May now be viewed. Catalogues may be obtained on the Premises; at the Seed Warehouse, Covent Garden, W.C.; and of the Auctioneers & Valuers, 67 and 68, Cheapside, E.C.

N.B.—The valuable GOODWILL of the Furnishing and Jobbing Business carried on at the Pine-Apple Nursery will be OFFERED as a SEPARATE LOT on the FIRST DAY. The Purchaser will have access to the books, and the addresses of Customers handed to him.

Henfield, Sussex.

Abutting on the London, Brighton, and South Coast Railway, about ten minutes' walk from Henfield Station.

By Order of the Trustees of the late S. Clarke, Esq.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on WEDNESDAY NEXT, Sept. 28, at 2 o'clock, in Three Lots, the exceedingly choice FREEHOLD MARKET GARDEN and NURSERY, most favourably situated, and known as the Henfield Nurseries, Sussex, comprising a modern and convenient brick-built Residence, Twenty-two Greenhouses and Vinerias, all heated; Firs, brick-built Stabling, and other Trade Buildings. Also Cottages, and another Dwelling-house, Orchard, and productive Market Garden and Nursery Land, the whole containing an area of about 11 Acres. Possession will be given on completion of the purchase.

Particulars and plans had at the Mart; of Messrs. Howlett & Clarke, Solicitors, 8, Ship Street, Brighton; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C.

Brixton, S.W.

GREAT ANNUAL TRADE SALE of beautifully-grown PALMS, FERNS, and OTHER PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Wiltshire Road, Brixton, S.W., 10 minutes' walk from Loughborough Junction and Brixton Stations, on MONDAY NEXT, Sept. 26, at 12 o'clock, by order of Messrs. Lane & Martin, 3000 KENTIA BELMOREANA and FOSTERIANA, fine plants, in 48 and 60-pots; 3000 LATANIAS, in 32 and 48-pots; 1000 SEAFORTHIA ELEGANS, 300 CORYPHAS, 1000 well-grown FICUS, 600 DRACENA RUBRA, 500 ASPIDISTRAS, in 48's; 800 CYPERUS ALTERNIFOLIUS, 200 C. VARIEGATA, 10,000 FERNS, in variety; SPECIMEN PLANTS for Furnishing, &c.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.

By order of Messrs. Linden, Brussels.

Extraordinary New, Rare, and beautiful ESTABLISHED and SEMI-ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 30, at half-past 12 o'clock.

Included in the Sale will be found the largest and finest plants in Europe of

CATTLEYA REX.

100 grand Plants of LELIA GRANDIS TENEBROSA.

The new and exquisite ONCIDIUM BUNGEROTHII, a magnificent lot of the new varieties of CATTLEYA ACKLANDIE.

Extra fine plants of the new and splendid (all the stock) CYRTOPODIUM ALICE (LINDEN).

H.S.H. Princess of Monaco new CYRTOPODIUM.

Good plants of ODONTOGLOSSUM CORANARIUM. ANGULOEA EBURNEA (true).

SOBRALIA LILIASTRUM (IMPERATRIX).

The following new ORCHIDS:—NANODES MANTINII, BULBOPHYLLUM ANCEPS, CIRRHOPETALUM PULCHRUM, ONCIDIUM CRISTATUM; and beautiful plants of the new and chaste

MILTONIA CLAESIANA (LINDEN).

VANDA species, and other ORCHIDS; all in magnificent condition.

On view mornings of Sale and Catalogues had.

Heaton Norris Nurseries, near Stockport and Manchester, ten minutes walk from Heaton Norris on the London and North Western line, Manchester to Crewe.

ABSOLUTE CLEARANCE SALE, Without Reserve, by order of Messrs. G. and W. Yates, who are relinquishing this branch of the business in order to devote their whole attention to the seed trade.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, the Nurseries, Green Lane, Heaton Norris, near Stockport and Manchester, on MONDAY, October 3, and THREE FOLLOWING DAYS, at 12 o'clock precisely, the whole of the valuable NURSERY STOCK, covering 11 acres of ground, comprising 5000 Ornamental Flowering and Foliage TREES and SHRUBS, 6000 Hybrid and Named RHODODENDRONS, including Waterer's and other exhibition varieties, these being a specialty; RHODODENDRON STOOLES full of layers; 6000 CONIFERS and Evergreen BORDER SHRUBS; 7000 fine HOLLIES, including many specimens 3 to 6 feet; 10,000 FRUIT and ORNAMENTAL TREES; 30,000 Privet Hollies, and Quick for hedges; ROSES, IVIES, CLIMBERS, HERBACEOUS PLANTS, and OTHER STOCK.

Also eight span-roof GREENHOUSES, 40 to 60 feet long; 150 feet of FRAMES, three BOILERS, almost new; nearly 2000 feet of 4-inch PIPING, &c.

May be viewed. Catalogues had on the Premises, at the Seed Warehouse, 28, Market Place, Manchester, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The LAND, about 10 acres, TO BE LET, rent £3 per acre. The Nurseries are only 6 miles from Manchester. There is a good opening for anyone wishing to embark into the nursery business. The incoming tenant would have the opportunity of purchasing at the sale such stock as he might require at Auction prices.

Brixton, S.W.

SALE of well-grown NURSERY STOCK, especially adapted for the London Suburb., by order of Messrs. Ponsford & Son.

IMPORTANT TO THE TRADE and PRIVATE BUYERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Loughborough Park Nursery, Brixton, S.W., five minutes' walk from the Loughborough Park Railway Station, on FRIDAY, October 7, at 12 o'clock precisely, in consequence of the number of Lots, 7000 Variegated and Green Euonymus, 4000 oval-leaved Privet, Evergreen and Flowering Shrubs in great variety, large quantities of Forest Trees, 5000 Aucubas, 2000 Ives in Pots, 2000 Standard and Young Mulberries (a special feature at this Nursery), 500 Ampelopsis Veitchii, and other Hardy Climbers in Pots, 700 fine Standard Planes and Limes, 5000 Palms in variety, in 32, 48, and 60-pots, consisting of Kentias, Latanias, and others, Azaleas, Camellias, a number of Specimen Plants, suitable for Furnishing, Shrubs in Pots for Window Decoration, and other Stock.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Woking, Surrey.

A short distance from the Woking Railway Station.

UNUSUALLY IMPORTANT FIVE DAYS' UNRESERVED SALE

Of exceptionally well-grown and rooted NURSERY STOCK, in the finest possible condition for transplanting, and embracing the most important lot of Stock offered by Auction for many years, the quality of which is unsurpassed in the Trade, by order of the Trustees of the late Mr. George Jackman, the land being required for Building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Woking Nurseries, Woking, Surrey, on MONDAY, October 10, and four following days, commencing at 12 o'clock precisely each day, several acres of exceptionally well-grown

NURSERY STOCK,

The whole of which is in the best possible condition for removal; comprising—

10,000 CONIFERS, 3 to 9 feet, amongst them numerous fine specimens.

Thousands of smaller EVERGREENS and CONIFERS, for Potting, &c. 1000 BOX, in variety.

10,000 Green and Variegated HOLLIES, 1 to 5 feet.

3000 LAURELS, of sorts, 1 to 5 feet. PORTUGAL LAURELS.

5000 Named RHODODENDRONS, Hybrids, &c., 1 to 3 ft.

A fine collection of

ORNAMENTAL DECIDUOUS TREES,

comprising Maples, Thorns, Almonds, Peaches, Planes, Poplars, &c., 7 to 10 feet.

1000 LIMES, 5 to 10 feet.

FOREST TREES in great quantities; amongst them several thousands of Sycamores, Oaks, Beech, Spruce, Limes, Poplars, &c.

5000 Common ASH, 2 to 5 feet. 40,000 QUICK, 1 to 2½ feet.

20,000 ST. JOHN'S WORT.

A splendid collection of

ORNAMENTAL TREES, for Park and Avenue Planting, 10 to 20 feet, including Horse Chestnuts, Purple Beech, Scarlet Oaks, Lime, Planes, Sycamores, Maples, Elms, Poplars in variety, &c.

25,000 FRUIT TREES, comprising Standard, Feathered, and Single Cordons, Apples, Pears, Plums, and Damsons.

3000 Standard and Feathered Flowering Almonds, Peaches, Prunus, Pissardi, and other Stock.

The Auctioneers have personally inspected the Stock, and desire to call the attention of intending purchasers to this important Sale. It is undoubtedly the most important Auction of Nursery Stock held for many years, and an inspection will well repay a visit by those contemplating planting during the season.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises, or of the Auctioneers, Land Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Sunningdale.

A few minutes' walk from Sunningdale Station.

THREE DAYS' ABSOLUTE CLEARANCE SALE, WITHOUT RESERVE

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. C. Noble, to SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on WEDNESDAY, October 19, and TWO FOLLOWING DAYS, at 12 o'clock precisely, a choice Assortment of beautifully-grown NURSERY STOCK, including Standard and Bush Rhododendrons of the best named kinds, Hybrid ponticum and other Rhododendrons, 2000 Azaleas pontica, 4000 Aucubas, 2500 Portugal Laurels, 15,000 Conifers in various sizes, comprising 4000 Thuia americana, 3 to 6 feet, fine for hedges and planting; 4000 Thuia Lobbi, 3 to 7 feet; 2000 Spruce Firs, 1½ to 2 feet; 6500 Berberis; 6000 oval-leaved Privet; 8500 Limes and Planes, 6 to 10 feet, fine and straight trees, particularly suitable for Avenue, Park, or Street Planting; many thousands of Ornamental Trees for immediate effect, several thousands of Standard and Pyramid Fruit Trees, 200 Webb's Cob Nuts, Flowering Shrubs, Climbing Plants, and other STOCK.

Purchasers can arrange with Mr. NOBLE to lift and forward any Lots to all parts of the Kingdom at cost of labour incurred and material used.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Thursday Next—Plants from Belgium.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, September 29, at 12 o'clock, Consignments of AZALEAS, PALMS, CAMELIAS, and other PLANTS, from well-known Nurseries in Belgium.

On view morning of Sale, and Catalogues had.

Chilwell Nurseries, Chilwell, Notts.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. R. Pearson & Sons to SELL by AUCTION, on the Premises as above, on THURSDAY, October 6, at 12 o'clock precisely, a large quantity of GENERAL NURSERY STOCK, recently transplanted and beautifully grown, including 1000 splendid Golden Yews, 1 to 4 feet, every one a perfect specimen from ground to point, and as much through the base as they are high. The whole will be sold absolutely without reserve, as the ground is to be sold immediately after possession in March.

Special trains run to Nottingham from all parts of the kingdom on day of Sale, it being the celebrated Goose Fair.

Beeston Station for the Nurseries is 3½ miles from Nottingham. May be viewed. Catalogues may be obtained on the Premises and of the Auctioneers.

Cliffe, near Rochester.

IMPORTANT TO FRUIT GROWERS, MARKET GARDENERS, AND OTHERS.

GREAT ANNUAL SALE, by order of Mr. W. Horne. MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Cliffe, near Rochester, on WEDNESDAY, October 26, 100,000 FRUIT TREES,

comprising 35,000 one, two, and three-year old Apples, Pears, Plums, and Cherries; 1000 Lady Sudeley and Bismarck Apples; 5000 of the new dessert Apple, Beauty of Bath; 50,000 Baldwin Black Currants, 4000 Red Currants, 10,000 Bob and Lad Gooseberries, 5000 John Ruskin Strawberries, also Noble, and other varieties, in large and small pots; 45,000 Paxton, Noble, and John Ruskin Strawberries, from open ground; 20,000 three-year Connover's Colossal Asparagus roots, from French seed; 50,000 early Rainham Cabbage plants, &c.

May be viewed. Catalogues may be obtained on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Worcester.

FIVE DAYS' ABSOLUTE CLEARANCE SALE of about 20 Acres of beautifully-grown NURSERY STOCK, carefully prepared for removal, by order of Messrs. Richard Smith & Co., a portion of their land in the City boundary being required for Building purposes.

Important to Noblemen, Gentlemen, Land-cape Gardeners, Nurserymen, and others engaged in Planting.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the St. John's Nurseries, Worcester, about 20 minutes' walk from the Worcester Railway Stations, on MONDAY, October 17, and FOUR FOLLOWING DAYS, at 12 o'clock precisely each day, without reserve—

25,000 STANDARD and PYRAMID ORNAMENTAL TREES, 4 to 18 feet, in great variety; 2000 Prunus Hispanica; 3200 Purple Beech, best dark-leaved variety; 500 London Planes.

5000 FLOWERING SHRUBS in great variety.

12,000 SPECIMEN CONIFERS and EVERGREENS.

1½ to 12 feet high; 2000 Portugal Laurels; 1600 Gold and Silver Variegated Hollies, Standards and Pyramids; 2500 Golden Yews, grand plants.

Large quantities of fine Native LARCH, 2 to 4 feet.

Ash, Quirk, and other FOREST TREES.

Thousands of FRUIT TREES, including Standard and Pyramid Pears, hundreds of Standard Victoria Plums, grand trees; Standard and Pyramid Damsons, Standard and Pyramid Apples, Black and Red Currants, Whinham's Industry, Keepsake, and other popular Gooseberries.

Several hundreds of fine Planting and Fruiting VINES.

Forcing ASPARAGUS.

Thousands of TEA and NOISEITE ROSES, in pots, embracing the most popular plants.

Thousands of CLIMBERS, consisting of 1000 Clematis Jackmanni, 1000 Clematis in variety.

Berried AUCUBAS, in quantity, and other Stock.

Also 8 two-wheel TRUCKS, and 1 smaller do., suitable for Nurserymen and others.

The Auctioneers desire to call special attention to this highly important Sale. It is the first occasion on which an Auction has been held at these celebrated Nurseries, the necessity now arising solely on account of a portion of the ground having to be given up for building purposes; and the present Sale affords an exceptional opportunity to Noblemen, Gentlemen, and others desirous of acquiring large quantities of well-grown Nursery Stock.

Purchasers may arrange with Messrs. Smith & Co. to have their lots lifted and forwarded at the cost of labour incurred and material used. Luncheon provided each day at 11.30.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Great Trade Sale of Dutch Bulbs on Tuesday Next.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, September 27, at half-past 12 o'clock precisely, an enormous importation of BULBS from Holland in splendid order, lotted specially for large Buyers. 50,000 Roman HYACINTHS, 15,000 Paper White and Roman NARCISSUS, LILIUMS, &c.

On view morning of Sale, and Catalogues had.

Choice Bulbs from Holland.

MR. J. C. STEVENS will SELL by AUCTION, every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice BULBS arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Dutch Bulbs. Great Unreserved Sales every Tuesday.

MR. THOMAS B. JAMES (for many years with Protheroe & Morris) holds Sales at his Commodious Sale Rooms, Bull Ring, Birmingham, every TUESDAY, at half-past 11 o'clock, and of extensive consignments of HYACINTHS, TULIPS, CROCUS, DAFFODILS, White Roman HYACINTHS, Paper-white NARCISSUS, LILIUM HARRISII, L. CANDIDUM, and other Bulbs.

No Rubbish sold. Catalogues post-free.

A private Collection of Orchids. PLANTS FROM BELGIUM.

MR. THOMAS B. JAMES will SELL by AUCTION, without the least reserve, on THURSDAY, October 6, at half-past 12 o'clock, at his Sale Rooms, Bull Ring, Birmingham, a small but CHOICE COLLECTION of ESTABLISHED ORCHIDS, formed by a well-known amateur in the neighbourhood of Birmingham; also a consignment of PALMS and other PLANTS from Belgium, such as *Latanias*, *Kentias*, *Arecas*, *Crotons*, *Dracenas*, *Camellias*, *Azalea indica*, *Rhododendrons*, *Citrus*, *Aspidistras*, and numerous other things. Catalogues post free.

Cut Flowers.

MR. THOMAS B. JAMES holds SALES at his Rooms (to the Trade only), Bull Ring, Birmingham, every WEDNESDAY and FRIDAY, at 4.30 A.M., of CHOICE CUT FLOWERS. Fresh consignments invited. Empties forwarded. Account Sales and cheques every Saturday.

Great Barr, Staffordshire.

MR. THOMAS B. JAMES will SELL by AUCTION, without Reserve, on SATURDAY, October 1, at 1 o'clock, on the Premises, The Woodlands, Great Barr (close to Great Barr Railway Station, L. & N. W. Ry.) a large Collection of ESTABLISHED ORCHIDS, amongst which are *Lycaste Skinn-vi alba*, *Laelia anceps alba*, *Cologynce cristata alba* (several), 300 well-grown, unflowered *Odontoglossum Alexandræ* from Pacho district, 150 unflowered *Cattleya labiata*, *Dendrobium intermedia*, *Graham*, and about 500 strong plants of varieties, *Oncidiums*, *Odontoglossums*, *Cattleyas*, *Dendrobiums*, &c.; also an extensive assemblage of STOVE and GREENHOUSE PLANTS, consisting of 250 *Dracenas* in variety, 200 well-budded *Camellias*, small and large; 200 *Azalea indica*, various sizes, all to name; 150 *Latania borbonica*, large and small; 100 *A-pidistra variegata* and green; 50 *Gardenias*, 50 *Ficus*, 700 *Fuchsias*, 500 *Coleus*, 400 *Begonias*, 500 *Gloxinias*, Specimen Plants of *Araucaria excelsa*, 50 *Crotons*, and thousands of other plants in endless variety; a Rick of good Hay; 3 Trap-horses, in perfect condition; 1 Set of Harness, Light Dog-cart, and endless other things.

Can be viewed two days prior and morning of Sale. Catalogues from place of Sale, and of the Auctioneer, 12, Bull Ring, Birmingham.

To-morrow, Saturday. -Oaklands, Lewisham Park.

MESSRS. DYER, SON, and HILTON will SELL by AUCTION, on the Premises, TO-MORROW, SATURDAY, September 24, at 2 o'clock punctually, the valuable collection of STOVE and GREENHOUSE PLANTS, including Orchids, *Crotons*, *Begonias*, *Stephanotis*, *Palms*, *Ferns*, *Dracenas*, *Eucharis*, magnificent specimen *Camellias* and *Chrysanthemums*, Vines in full bearing, and the hanging crop of Choice Grapes, a 50-foot double lean-to Vinery by Lascelles; a 24-feet span-roof Stovehouse, Boiler and Furnace by Graham and Son; a 32-feet range of brick pits, and ten lights; about 500 feet of hot-water piping, patent valves, a quantity of brickwork, stone flags, tiles, and other effects.

On view this day and to-morrow morning. Catalogues of the Auctioneers, 31, Badge Row, E.C., and Blackheath, S.E.

The Tivoli Nursery, Chapel Road, West Norwood. WITHOUT RESERVE.

By order of the Executrix of Mr. A. A. James, deceased.

MR. W. N. WILLOUGHBY will SELL by AUCTION, on the Premises, as above, on WEDNESDAY, September 28, at 1 o'clock precisely, the whole of the remaining NURSERY STOCK, as follows:—Standard, Espalier, and Pyramid Apple, Pear, Peach, Plum, and other Fruit Trees, a choice assortment of Evergreens and Border Shrubs, comprising *Eunymus*, *Retinosporas*, *Aucubas*, Gold and Silver Hollies, *Rhododendrons*, Bush and Standard Roses, and about 4000 *Ivy*, *Creepers*, &c., &c.

Catalogues may be had of the Auctioneer, West Norwood, S.E.

Cart House Lane Nursery, Horsell.

About 1½ mile from Woking Station, on the London and South-Western Railway.

The exceptionally well-grown NURSERY STOCK (the whole of which has been moved within the last two years), including many fine Specimen Plants, 5000 Standard and other Hollies, 1 to 6 feet; 3000 Yews, from 2½ to 6 feet; 10,000 Scotch Spruce, and other Firs, 2 to 5 feet; 10,000 Arborvitæ, *Thuia Lobbi*, *Cupressus Lawsoniana* and erecta, *Abies Douglasii*, 2 to 8 feet; quantity of *Piceas*, *Retinosporas*, *Araucaria*, Red Cedars, several thousand *Rotundifolia*, *Caucasian*, *Portugal*, and *Common Laurels*, 1 to 4 ft.; 10,000 *Ovalifolium*, *Common* and *Box-leaf Privet*, 50,000 strong Quicks, 2 to 4 feet; many thousands of Flowering Trees, Border Shrubs in large quantities, several thousand Forest Trees, and 3000 Fruit Trees.

MESSRS. WATERER AND SONS, who are instructed by Mr. Richard Collyer, will SELL by AUCTION, on the Premises, on WEDNESDAY and THURSDAY, October 5 and 6, at 11 to 12 o'clock each day.

The Auctioneers have great confidence in drawing the special attention of Purchasers to this Sale, the whole of the stock being well-rooted, and in perfect condition for removal.

May be viewed seven days prior to the Sale, and Catalogues obtained upon the Premises, and of the Auctioneers, at either of their offices, at Chertsey, Weybridge Station, and Walton-on-Thames.

Orchids from Ferniehurst, Shipley.

MESSRS. HEPPER AND SONS are favoured with instructions from Edward Salt, Esq., of Ferniehurst, Shipley, to remove to their Rooms, East Parade, Leeds, for SALE by AUCTION, on Friday, October 7, commencing at 11 o'clock, the whole of his valuable Collection of ORCHIDS, and some fine STOVE PLANTS.

The ORCHIDS comprise:—*Dendrobium nobile Sanderiana*, about the first form of the species; *D. Jamesianum*, &c.; *Masdevallia militaris*, fine and very rare species; *M. Harryana*, Drumming variety; *Thomson's* Scarlet and special fine dark form; *M. Tovarensis*, *Veitchii*, *Daviesii*, and *igneas*; *Odontoglossum luteo-purpureum* bright in flower; *O. Schillerianum*, rare; *O. crispum*, fine varieties bright in flower; *Lindleyanum ligulare*, *O. Reicheni*, *Pescatorei*, *Rossi* majus, *Lindleyanum ligulare*, *odoratum striatum*, *Harryana*, *hastilabium*, &c.; *Cypripedium Chantini*; *C. in-igne* also *margatum punctatum*, grand variety; *C. insigne*, spotted petals; *Wallacei*, and *Horsmanni*; *Cologynce cristata*, Chatworth and St. Albans variety; *Laelia anceps Dawsoni*, *Williamsi*, *Barkeriana*, *autumnalis alba*, &c.; *Oncidium macranthum*, *tigrinum*, *Marshallianum*, *flexuosum*, *aurosum*, *unguiculatum*, *Loxense*, &c.; *Cattleya citrina*; *Nanodes Medusæ*, very rare; *Phalenopsis violacea*; *Epidendrum vitellinum majus*, &c.

The STOVE PLANTS consist of a number of choice *Anthuriums*, viz., *Scherzerianum Wardii* (Veitch), *S. atro-sanguineum*, *Andraeanum*, *Rothschildianum*, and *Pumilium*; *Imantophyllum* miniature, named varieties; and *Eucharis amazonica*, in 13-inch pots.

Catalogues may be had of the Auctioneers on and after the 24th inst., and the plants will be on view in the Sale Room during the afternoon previous to and on morning of Sale.

Great Orchid Sale, at 72, Renfield Street, Glasgow.

On WEDNESDAY, September 28, at 12 o'clock.

IMPORTANT PUBLIC SALE OF ORCHIDS. By Order of Messrs. Charlesworth, Shuttleworth, & Co., Heaton, Bradford, and 213, Park Road, Clapham, London, S.W.

MR. WALTER J. BUCHANAN has been favoured with Instructions to SELL by PUBLIC AUCTION, as above, a Choice Collection of Semi-Established and Established ORCHIDS. A good many will be found in Spike or Sheath, for Winter or Early Spring Flowering.

Special attention of Connoisseurs is drawn to the fine lot of New, Superb *LELIA GRANDIS TENEBROSA*, a first-class novelty which ought to be in every collection.

On View Day previous, from 12 till 5 o'clock, and on Morning of Sale.

Full particulars in Catalogues, to be had on application to the Auctioneer, 72, Renfield Street, Glasgow.

WANTED, a HOUSE, with six to eight rooms, standing in 1 to 4 Acres of Ground, suitable for Hardy Plant Growing, within 10 miles of London. Send full details to HILL, Seed-man, 1A, Euston Road, King's Cross, London.

GARDENER, with insight of Market Work, is open to TAKE OVER a SMALL CONCERN, or PREMISES suitable for the same; or PARTNERSHIP. Address, ADAMS, Browsea Island, Poole, Dorset.

MR. THOMAS B. JAMES has for SALE, by Private Treaty, several NURSERIES and FLORISTS' BUSINESSES, both in the Midlands and in the Suburbs of London. Particulars on application.

N.B.—Sales conducted and Valuations made in any part of the country (twelve years' practical experience).

NURSERY and FLORIST.—Great Bargain:

Established 20 years. Four Glass-houses, 1½ acre of Ground, and eight-roomed House. Rent £18. Lease, Plant, and Stock at valuation. No Premium. Call at once. BEVANS, 10, Laurence Pountney Lane, E.C.

Public Sale of Large Camellia Plants.

TO BE SOLD, Without Reserve, at

Lansdowne, near Phila., U.S.A., on TUESDAY, November 1, about 250 CAMELLIA PLANTS, in fine health, from 1 to over 3 inches diameter of stem—*Alba plena*, *Fimbriata*, *Lady Holme's Blush*, *Henry Le Favre*, &c. As *Camellia* plants do not fail to throw up shoots, if cut down even to short stumps, these can be reduced to small compass for shipping—sure to live, if properly handled. Every plant will be Sold, Without Reserve, no matter how small the figure, as the place is sold, and the house above them taken down.

A. L. PENNOCK AND SON, Lansdowne, Delaware Co. Pa., U.S.A.

To Nurserymen, Florists, &c.

SUBSTANTIAL NURSERY PREMISES

to be DISPOSED OF, by Executors, constructed at great cost, at a small nominal premium. The Premises are in working order, and comprise Greenhouses, Dwelling-house, Gardener's Cottage, Stabling, &c. About 6 miles from Covent Garden, London.

Particulars will be furnished upon application to A. Z., 2, Wisteria Road, Lewisham, S.E.

FOR SALE, a compact, attractive, old-established NURSERY, SEEDSMEN, and FLORISTS' BUSINESS (including Retail Shop); several Greenhouses, comprising 4000 square feet of glass, well-heated, &c. Magnificent opportunity. Only Nursery in seaside town of 40,000 inhabitants. Within easy run of London.—For full particulars apply to L. M. N., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Truro, Cornwall.

GENERAL NURSERY BUSINESS for

DISPOSAL (established 50 years). The ground is fertile, well sheltered and watered, in good heart and condition, easily accessible, 7 acres in extent, one of which is enclosed with a large brick wall for the cultivation of Fruit. There is a good Cottage, 7 Glass-houses, Packing Sheds, Frames, &c., on same; also a magnificent stock of Shrubs, Fruit Trees, Roses, Decorative Plants, Cut Flowers, &c. The whole of same to be taken at a valuation. The above affords an excellent opportunity to an experienced and energetic man for acquiring a successful business undertaking.

Apply to GEO. STANAWAY, Accountant, Truro.

To Nurserymen, Florists, and others.

TO BE SOLD, in Acre or larger Plots, excellent LANDS at Enfield Highway, a few yards from the Brimsdown and Ponder's End Stations, and adjacent to the line of the Great Eastern Railway. Adjoining land is extensively cultivated by florists of repute; a considerable portion of the purchase money can remain on mortgage at low interest. Particulars of Mr. ALFRED RICHARDS, Estate Agent, Lower Tottenham.

FELTHAM.—Valuable Freehold ESTATE,

comprising nearly 20 acres of Market Garden Land, with substantial Residence, Homestead, and Farm Buildings, for SALE, by Private Treaty.

For particulars apply to Messrs. S. WALKER and RUNTZ, 22, Moorgate Street, E.C.

To Nurserymen and Florists commencing Business.

HAMPTON-ON-THAMES, on the Marling

Park Estate, free from London fogs, a deep rich loam, the favourite neighbourhood for Growers. FREEHOLD LAND for SALE, on easy system of Purchase, or to be LET on Lease. For full particulars apply to Mr. FRED. G. HUGHES, Surveyor, The Estate Office as above.

To Nurserymen.

TO BE LET or SOLD, a convenient NURSERY GROUND, with two large Greenhouses, Boiler-house, and Ornamental Pond, in all about 4 Acres, half under cultivation. Room for dwelling-house, near railway station, close to good main road; within 5 miles of Bristol. Stock on ground to be taken at valuation.

Apply, CLEMENT GARDINER, 14, John Street, Bristol.

TO LET, in Kent, a small NURSERY, about
2 acres of good, rich, cultivated Land, with Glasshouses, heated with Hot-water. About 15 miles from London; 1 mile from station. For particulars apply to W. B., "The Orange Tree Tavern," Wilmington.

Conservatories.—Great Bargains.

WRINCH AND SONS, Ipswich, and 57, Holborn Viaduct, London, E.C., have for Sale, at greatly reduced prices, a handsome SPAN-ROOF CONSERVATORY with Lantern Roof, quite new, size 25 feet by 15 feet—original price, £135; sale price, £95. Also a CONSERVATORY, size 20 feet by 12 feet, Span Roof—original price, £87 10s.; sale price, £45. Prices include fixing complete. Drawings and full particulars on application.

We shall also be pleased to send our Illustrated CATALOGUE of Horticultural Buildings free on application. Surveys made. Plans and estimates given.

WRINCH AND SONS, Ipswich and London.

HOT-WATER PIPES, &c., for Sale.—2000 feet 4 in. and 3 in.; ditto, 5 Vineries, 2000 feet; Loose Glass; 700 Pots of Maiden Hair FERNS, in 32, 24, and 16-pots; BOILERS, &c., all to be sold Cheap.

Apply, by letter, to J. LANCASTER, Barnett College, Esther Road, Leytonstone, E.

In Chancery.

FRUIT TREES.—80,000 very choicest kinds. Apples, Pears, Cherries, Peaches, Filberts, and Plums; 20,000 noble, tall, standard Victoria Plums and Damsons, 4 and 5-yr. old; and 2000 Rhododendrons and pretty Shrubs, Roses, and Hardy Flowers. In small or large quantities. Purchasers' selection. See CATALOGUES.—LAND STEWARD, Hon. GERTRUDE JONES, Churchfield, Cradley, near Malvern.

TRADE OFFER OF PALMS.

COCOS Weddeliana, in thumbs ... at 20s. per 100.
" " " in 60's ... at 55s. per 100.
KENTIA Fosteriana & Belmoreana, in thumbs, at 20s. per 100.
" " " in 60's ... at 60s. per 100.
" " " in 48's ... at 24s. per doz.
" " " in 32's ... at 48s. per doz.
SEAFORTHIA elegans, in 60's, ... at 32s. per 100.
" " " in 48's ... at 25s. per 100.

W. Icton has a fine Stock of Asparagus plumosus nanus, in 48's and 60's; Pandanus Veitchii, Dracena Lindenii, and Ficus elastica.—W. ICTON, Putney, S.W.

Special Cheap Offer by the 100 or 1000.

AUCUBA JAPONICA VARIEGATA, as good as money can buy, 2½ to 3 feet, 15s.; 3 to 4 feet, 24s.; 4½ to 5 feet, 30s. per dozen.
PRIVET OVALIFOLIUM, 2 to 3 feet, 6s.; 4 to 5 feet, 20s.; 5 to 6 feet, 30s. per 100.
DAPHNE MEZERION, red, 1½ to 2 feet, 20s.; 2 to 2½ feet, 25s.; White, 1½ to 2 feet, 25s.; 2 to 2½ feet, 35s. per doz.
Other sizes and varieties on application to
R. W. PROCTOR, Nurseryman, Chesterfield.

BULBS, TO THE TRADE.

JOHN MOOY, BULB GROWER, from Holland,
begs to inform his Commercial Friends that he has arrived in London, as usual, with a choice Collection of Bulbs.

WAREHOUSE, 96, DRURY LANE,
LONDON, W.C.

ORCHIDS.

BRAZILIAN ORCHIDS supplied in large or small quantities.
CATALOGUE and particulars free on application.

A. H. GRIMSDITCH, Importer,
5, Clayton Square, Liverpool.
Depôt: 17, Dryden Road, Edge Lane, Liverpool.

SOLE AGENT FOR CARLOS TRAVASSOS, RIO DE JANEIRO.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD AND NURSERIES,
CARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS,
FERNS, &c., &c.

CATALOGUES, with full particulars, post free
on application.

Special Quotations to the Trade.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

FOR SALE, 60,000 strong one-year Whinham's
Industry GOOSEBERRY BUSHES. Price on application.
W. HUNTER, Tyne Green, Hexham.

BORDER CARNATION (Ketton Rose).—The best rose-coloured Border Variety; perfectly hardy; very free in flowering; fine strong Layers. Price on application to W. H. DIVERS, Ketton Hall Gardens, Stamford.

FOR SALE, 790 Maiden Hair FERNS,
Adiantum cuneatum, in 24 and 16-pots. To immediate Purchaser, £29 12s. 6d., not delivered.
Apply to C. ROUSE, Epping Green, Epping, Essex.

FOR SALE, a quantity of Stock Plants of
ISOLEPIS GRASS, and SIBTHORPIA EUROPEA, Cheap; also Marie Louise VIOLETS, strong.
W. CHAMBERS, Westlake Nurseries, Isleworth.

VINES for Sale.—About 100 good strong well-ripened Canes for planting, and a few dozen splendid Fruiting ones. For variety and price, apply to—SAMUEL JENKS, Bramley Nursery, East Grinstead.

VICTORIA PLUMS, Morello CHERRIES:
fine standard and feathered trees, per 100 or 1000. Pears, Damsons, Gooseberries, Strawberries, and all kinds of FRUIT TREES wholesale and retail.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

Trade Offer of Large Palms.

W. ICTON has a large Stock of the leading
kinds of Decorative PALMS from 6 to 25 feet high, fit for Conservatory and House Decorations; Dracenas, Bamboos, and Foliage Plants. Lowest Prices quoted on application.
W. ICTON, Putney, S.W.

CHOICE FRUIT!—CHOICE FRUIT!

Highest market prices guaranteed. Prompt cash.
HENRY RIDES, Centre Avenue, Covent Garden, W.C.

JOHN COLLINGRIDGE is open to receive
Consignments of Choice CUT FLOWERS for SALE, on COMMISSION. Highest references.
New Flower Market, and 5, Russell Court, Strand, W.C.

MESSRS. SQUELCH and WOOD, FRUIT
SALESMEN, North Row, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of GRAPES, TOMATOS, CUCUMBERS, and all kinds of HOT-HOUSE PRODUCE.

Our business connections being amongst the best houses in London, we are in a position to secure the highest prices for all choice goods. Account Sales forwarded daily and cheques weekly, or daily if required. Empties and labels supplied. Reference, London and County Bank, Covent Garden Branch.

W. CHITTY, Florist, &c., Stamford Hill,
London, N., has 130 strong plants of General Grant TOMATO, in 48-pots, with Flower and Fruit upon them. Anyone wishing to plant for a Winter Supply, will find this a good opportunity. Price on application.

OLD CRIMSON CLOVE and Gloire de Nancy
CARNATIONS, extra strong rooted layers; YUCCA ALIFOLIA, strong stuff, in 48's. Cheap to clear.
JOHNSON and CO., The Nurseries, Hampton-on-Thames.

VIOLAS (Tufted Pansies).—Our Collection is unrivalled. 100 cuttings, in 25 best sorts, 7s. 6d.; 50 cuttings, in 25 sorts, 4s. 6d.; 26 cuttings, in 13 sorts, 2s. 6d. Prices of plants on application.
DOBBIE and CO., Florists, Rothesay.

STRAWBERRY PLANTS.—Plant at once.—Vicomtesse de Thury, Sir Joseph Paxton, Sir Chas. Napier, Elton Pine, Dr. Hogg, Laxton's Noble, Keen's Seedling, and British Queen, fine healthy plants, from fertile stock, true to name, 3s. 6d. per 100, in one or more varieties; 27s. 6d. per 1000. Laxton's Latest of All and John Ruskin, 7s. 6d. per 100. Carriage free.
COOPER and SON, The Nurseries, Hadleigh, Suffolk.

Fruit Trees a Specialty.

STRAWBERRIES, one of the largest and
best collections in the Trade, including all the best of the New and Old Varieties. Full Descriptive Catalogue on application.

FRUIT TREES of all kinds, a very large stock.
JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

JULES DE COCK, Nurseryman, Ledeberg,
near Ghent, offers in best Plants, 3000 Aspidistra, green or var., at £3, £2, £10 per 100; 26,000 Azalea indica, at £4, £5, £6, £8 per 100; 2500 Ficus elastica, at £3 and £4 per 100. Satisfactory references, or cash with order, for unknown persons.

ORCHIDS.—We have just purchased a fine Private Collection, in which are many rare CYPRIPEDIUMS. Please write for LIST.
W. L. LEWIS and CO., F.R.H.S., Chase Side, Southgate, London, N.

CARNATIONS!—CARNATIONS!

Strong rooted layers. Each. Per doz.
Germania, best yellow ... 7d. 6s. 6d.
Charles I., yellow, striped bright rose ... 6d. 5s. 6d.
Souvenir de la Malmaison (Madame H. Warocque), new, crimson ... 1s. 7d. 12s. 0d.
Souvenir de la Malmaison, pink variety ... 1s. 0d. 10s. 6d.
Mrs. R. Hole, apricot-salmon ... 6d. 5s. 6d.

Full LIST free.
100 choice ALPINE PLANTS, purchaser's selection, in 60 kinds, 12s. 6d.
Descriptive CATALOGUE free.
H. DOBBIE, Floral Nurseries, Frettenham, Norwich.

EXHIBITIONS.

National Chrysanthemum Society.

THE AUTUMN EXHIBITION of CHRYSANTHEMUMS and TABLE DECORATIONS will be held at the ROYAL AQUARIUM, WESTMINSTER, on OCTOBER 12, 13, and 14. Special Prizes for Vegetables by Messrs. Sutton & Sons.

Schedules of Prizes on application to
RICHARD DEAN, Sec., Ranelagh Road, Ealing, W.

Fruit Evaporation (Drying).

PH. MAYFARTH and CO. beg to notify that their "AMERICAN" EVAPORATOR may be SEEN at WORK on October 5 and 6, between 10 A.M. and 4.30 P.M., at the Royal Horticultural Society's Gardens, Chiswick, W., by all interested. Various kinds of fruit will be dried. See *Gardeners' Chronicle*, September 3, p. 279, and September 10, p. 308.

PH. MAYFARTH and CO., 16, Mincing Lane, London, E.C.

Strawberries for Forcing.

SPECIAL CHEAP OFFER of STRAWBERRY PLANTS, in 6-inch pots, for Forcing—Paxton, President, and Thury—extra large crowns, thoroughly rooted. Also a few large KENTIA, Seaforthia and Area lucenscens. I have also left between 2 and 3 tons of Rivers' Royal Ashleaf Early POTATOS, fine sample.

C. H. RATSCH, Royal Nursery, Christchurch, Hants.

FOR SUCCESS ON EXHIBITION TABLES,
send to Mr. Robt. Sydenham, Roseleigh, Birmingham, for really good Bulbs and Seeds. No nurserymen can serve you better or cheaper. Full List on application.
ROBERT SYDENHAM, Roseleigh, Birmingham.

CLOVES, PINKS, and CAMPANULAS.

For Forcing, strong, spring-struck Mules and other Pinks, Campanula persicifolia, double white and coronata; also Golden Creeping Jenny, 3s. per doz. Cash discount—Trade.
GEORGE SMITH, Florist, 61, Penrose St., Walworth, S.E.

Strawberries.

A FINE COLLECTION of the best varieties
can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free.
THOMAS RIVERS and SON, Sawbridgeworth.

The Best Present for a Gardener.

VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published. Third Edition, just out.
Price 5s., post-free, 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

STRAWBERRY PLANTS.—Laxton's Noble and Sir Joseph Paxton, 4s. per 100; 30s. per 1000. RASPBERRY CANES.—Baumforth Seedling and Semper Fidelis, 7s. per 100; 50s. per 1000. Norwich Wonder and Fastolf, 4s. 6d. per 100; 35s. per 1000. DUTCH RED CURRANT TREES (strong 3-yr. old), 2s. 6d. per dozen; 10s. per 100. All carriage paid. Post-office Order with order.
R. H. BATH, Osborne Farm, Wisbech.

CHARLES VUYLSTEKE, NURSERYMAN,
Lochristy, Ghent, Belgium, offers VERY BEST PLANTS, at LOW PRICES, of Azalea indica, Azalea mollis, and Azalea mollis flore pleno, Hardy Ghent Azaleas, Camellias, Rhododendrons, Palms, best sorts for Table and Room Decoration; Dracenas Australis, Bruanti, rubra, &c., Ficus elastica, Orchids, &c., &c. New CATALOGUE now ready, and may be had free from—
Messrs. R. SILBERRAD and SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES
OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year-old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

Kindly Note.

CACTUS and DECORATIVE DAHLIAS.
GEORGE PHIPPEN would be pleased to give information to those having New Varieties or Seedlings of the above. If a few specimen flowers (packed in damp Moss), were sent him he would gladly compare them with his collection of over 120 varieties, and report to the sender free of any charge whatever.
The Nurseries, Reading, Berks.

HYACINTHS, TULIPS, NARCISSI, &c.

E. H. KRELAGE and SON'S Superior Dutch, Cap,
and all other Exotic Bulbs and Plants, are the Cheapest, and Guaranteed True to Name. For full Details as to Cultural Directions, Collections of Bulbs for Early Forcing, Indoor and Spring Gardening, Descriptions of Numerous New, Rare, and Interesting Plants, and Particulars as to Free Delivery, see our New Illustrated Descriptive BULB CATALOGUE (No. 455), entirely Revised and Enlarged, which will be sent Free, on Application to E. H. KRELAGE and SON, Nurserymen to the Royal Netherlands Court, and to H. R. H. the Grand Duke of Luxembourg, Haarlem, Holland.

NEW MAIDENHAIR.

ADIANTUM CAPILLUS-VENERIS IMBRICATUM
(DICKSONS)

This splendid NEW FERN is a decided acquisition, being quite equal in appearance to A. Farleyense, with the hardness of A. Capillus-veneris.

Full particulars, with price, on application.

DICKSONS (LIMITED), THE NURSERIES, CHESTER

SANKEYS' famous GARDEN POTS

* Bulwell Potteries, Nottingham. *

Messrs. Dicksons, Limited, Chester, write:—"The Flower Pots you have so largely supplied us with are light, strong and well made, and in every respect highly satisfactory."
Messrs. Richard Smith & Co., Worcester, write:—"We beg to say that we are highly satisfied with your 'Garden Pots,' they are well made, light, yet strong, and we like them better than any other we have ever used."
Mr. William Bull, 536, King's Road, Chelsea, London, writes:—"For nearly thirty years I have been using your 'Garden Pots,' and still find them the best and cheapest."
Largest Manufacturers in the World. No Waiting. Millions in Stock. Carriage and Breakage Free on £10 Orders. Half Carriage on £5 Orders. Samples Free.

STRAWBERRIES.

No place in the world equals Swanley or Eynsford, either for Fruit or Plants. Our 6 acres in 60 best kinds are now full of lovely Runners and Plants for immediate dispatch. Send for a CATALOGUE, giving the secrets how to have the finest possible crops at once.

Special Prices for large quantities.

Col. BROCKMAN, Dodsley, Midhurst, July 5.
"The Strawberries supplied by you last year are giving splendid results. Col. B. will write again shortly for more plants."

H. CANNELL & SONS, SWANLEY.

The International Horticultural Exhibition,

EARL'S COURT, LONDON, S.W.

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Will be held by the Executive of the International Horticultural Exhibition, in connection with the

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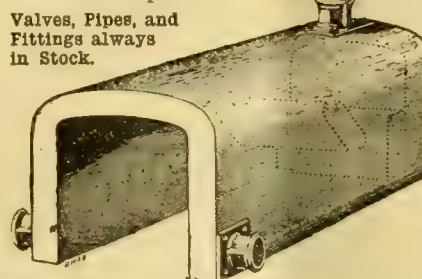
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 24, 1892.

COMBERMERE ABBEY.

IT is a trite repetition of a *vérité banale* to say that the monks of old nearly always founded their abbeys where the land was fattest, and where there was at hand an abundant supply of flesh, fish, and fowl. Combermere, in Cheshire, is a good instance of this way of theirs. The face of the country all round is thickly wooded, and the billowy park-land is covered with a rich, luxuriant herbage of emerald hue; and the mere, from which the place takes its name, is a very large stretch of water, 130 acres, of great depth, and 5 miles round. The abbey belonged to the Cistercians, and was founded in the twelfth century. On the dissolution it was given by Henry VIII. to Sir George Cotton. As Henry was an unerring judge of men, he probably deserved the magnificent gift. Leland speaks of him as a type of all gentlemanly virtue and charity. Of the original building some parts still remain, the library being the old refectory. This library is a most gorgeous room with a groined roof, and the heraldic history of all the Cottons emblazoned on shields. The hall or armoury, an equally fine room, is filled with trophies brought home from India and Waterloo by the greatest of the family, the first Viscount Combermere, the "Hero of Bhurt-pore." This place was believed to be impregnable, the mud walls being of enormous thickness, and the position very difficult of approach. The legend prevalent was that it could only be taken by a crocodile, and as "comber" means crocodile in Hindustani, he fulfilled the prophecy. In addition to this brilliant exploit, he served all through the Peninsular War and at Waterloo, and was one of the Duke of Wellington's most trusted friends and generals. The services he rendered in making the raw English cavalry fit to cope with the veteran French cavalry, were of inestimable service to us in the war. The two inns on the estate keep his memory green in the minds of the villagers, one is called "The Bhurt-pore Arms," and the other "The Salamanca."

The glory of Combermere is the lake or mere. It is the finest sheet of water in any park in England; from the abbey it presents the appearance of a mighty river. Its beauty is greatly enhanced by the varied nature of the surroundings. At the end nearest the abbey there is a woody island, affording a double passage to a chain of smaller lakes, where the Cumber stream enters. Opposite the abbey, verdurous park-land gradually rises to grand old trees in the distance. Lower down, thick woods, into which incurve many pretty coves and bays, line both banks; and at the further end the mere narrows to a bridge, where a thick growth of shrubs, chiefly Dogwood, clasps lovingly the water's edge. Beyond this, again, it opens out

into a smaller lake, from which a stream is fed by a sluice. The divers moods of this beautiful inland sea are very fascinating to watch. To-day a strong wind veers round constantly, and the waves and the reeds chase one another now in this direction, now in that; to-morrow there will only be, perhaps, a gentle zephyr, and the ripples will dance and laugh in the sunlight. In the moonlight a silver bar crosses the lake as on a heraldic shield. The great size of the mere, its remoteness from any haunt of men, the quantity of weeds and reeds, and the fact of their being unmolested, makes it a favourite home for rare migratory birds. The great-crested grebe may be seen diving and bringing up little fish or water insects for its young. The grebes breed in the rushes, and only the male migrates, the female and the young stopping all the year. Flocks of the cravat goose (*Anser canadensis*) fly over the lake, uttering their shrill cry. Other rare visitors are the golden-eye duck, also called the bell duck, because of the sound made by the first five primary feathers, resembling the tinkling of small bells; the bittern, and the goosander. Coots, of course, are numerous. Herons are common, and also breed there; one bay, surrounded by high trees, called Heron Bay, cannot be rowed into without flushing three or four of these unwieldy birds—at least, unwieldy till they get on the wing.

Fish swarm in its waters. A few trout come in, but the pike do not allow them to increase. Eels abound; they are of different colours, according to the depth of the water in which they may chance to be. At the sluice there is an eel-trap, and when there is an "eelfare," hundreds are caught in the trap.

The park is one of those typical old-English parks one sees nowhere else than in England. The ground is undulating with dense darkling woods in the background, and studded with Oaks, Chestnuts, and the other usual trees. A great many of the Oaks are of enormous size, and some of the old ruins were very picturesque. The largest is 29 feet 2 inches, another was 28 feet 4 inches, and on the island was one that was 26 feet. The measurements were taken about 3 feet up, taking care to choose a place where there are no knobs or bosses. The walk round the lake through the woods is very lovely; so beautiful, indeed, that the dullest lover of nature could not fail to be aroused to some enthusiasm. It is a great hunting ground for wild flowers. Balsam, Impatiens Noli-me-tangere grows very lustily, and covers great parcels of ground, and the erect *Lysimachia* does the same.

There is no flower garden near the house, it would be out of keeping with the abbey-like character of the place. The pleasure grounds extend to the kitchen garden, which is some distance from the house. They consist of walks through a lawn interspersed with shrubberies and Coniferous trees. Some of these are quite notable specimens. A *Libocedrus* decurrens must be nearly, if not quite, the highest and best furnished in the country; it is known to have been planted within a year of its introduction. *Taxodium distichum*, *Sequoia Wellingtonia*, *Araucaria imbricata*, together with the Himalayan Spruce and Pine, are all in perfect health, and show no signs of suffering from our cold winds. Combermere, too, can probably boast of having what is probably the biggest Portugal Laurel to be seen anywhere; it must be 200 years old at least, and has re-rooted all round in every direction. It took 114 long paces to walk round it, and in places it is 30 feet high; it has the appearance from the distance of a large clump of shrubs, and one

is very surprised to find that it is only one Laurel. Opposite this Laurel on the other side of the walk is a fine wide-spreading Fern-leaved Beech, trailing its lower branches on the earth, and also covering a large circuit of ground. The delicate crimpling of the leaves, and their green-brown colour, makes this tree very conspicuous. The two sides of the kitchen garden outside the walls are devoted to a long herbaceous border, and to an avenue of *Arboretæ*. This avenue is about 130 yards long. As it was planted a long time before Mr. Owen, the gardener's time, who has been there thirty-four years, the component trees have reached a goodly height, and bid fair in years to become much more imposing still. As the kitchen garden is not kept up as it formerly was, this description of the pleasure-grounds must bring this incomplete description to a close. *Vagabond*.

NEW OR NOTEWORTHY PLANTS.

NEW ORCHIDS.

THE third decade of new Orchids, described by Mr. Rolfe in the September number of the *Kew Bulletin*, consists of the following species, which, with one exception, are in cultivation in the various European collections:—

1. *Pleurothallis stenosepala*.—A species allied to *P. cardium*, Rchb. f., but differing in its much longer and narrower light green sepals. It has flowered at Kew, and with R. J. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell. The petals are also light green, and the lip light brownish-buff (p. 208).

2. *Lepanthes gracilis*.—A graceful little species, which recently flowered at Kew from some unknown source. It has bright yellow flowers, with some purple on the petals and column. It is allied to *L. concinna*, Sw. (p. 208).

3. *Restrepia bidentata*.—A remarkable little plant, which flowered in the Glasnevin Botanic Garden, differing from every other in having a pair of stipule-like teeth on the petals. The flowers are small, and variegated with brownish-purple and yellow on a paler ground. Its habitat is not known (p. 208).

4. *Ceologyne flexuosa*.—A Javan species, which has recently flowered both at Glasnevin and Kew. It belongs to Lindley's group, *Flexuosæ*, and is characterised by its hexangular ovary. The flowers are white, with a yellow stain on the lip (p. 209).

5. *Epidendrum bituberculatum*.—A species allied to *E. Schomburgkii*, Lindl., but with smaller rosy-purple flowers, and a pair of yellow calli at the base of the lip. It flowered in the collection of Sir Trevor Lawrence, Bart., M.P., at Burford Lodge, Dorking. Its habitat is not recorded (p. 209).

6. *Maxillaria glumacea*.—A brilliant species, allied to *M. aciantha*, Rchb. f., and *M. coriacea*, Rodr., characterised by its glume-like, acute, rigid sepals, which, with the petals, are yellowish-green in colour, and the lip maroon-purple, blackish-brown, and yellow. The scapes are clothed with imbricating sheaths (p. 210).

7. *Aspasia Barclayi*.—A small species, which flowered with W. L. Barclay, Esq., of The Briars, Reigate. It is allied to *A. principessa*, Rchb. f., and *A. psittacina*, Rchb. f. The segments are pale yellow-green, with somewhat darker bands, and the lip white, with some light purple and yellow near the base. Its habitat is not recorded (p. 210).

8. *Oncidium cristatum*.—A Brazilian species, which flowered with Messrs. Linden, L'Horticulture Internationale, Brussels. It has a somewhat twining scape, like *O. Schillerianum*, Rchb. f., and *O. volvox*, Rchb. f., to which it is allied. The narrow reflexed sepals and petals are of a clear, bright yellow, with darker lip and column-wings, the former having some red-brown dots on either side of the crest (p. 210).

9. *Cypripedium pusillum*.—A curious little species near the Californian *C. fasciculatum*, Kellogg, believed to be a native of Florida. It has a pair of elliptical-oblong leaves, and a short raceme of light yellow flowers, with some brownish-purple veins. It recently flowered at Kew, and with H. J. Elwes, Esq., of Cirencester, and Messrs. F. Sander & Co., of St. Albans (p. 211).

10. *Cypripedium Henryi*.—A Chinese species of the *Foliosæ* section, allied to the Himalayan *C. cordiferum*, Don, but with flowers in racemes, and other differences. It is described from dried specimens, collected by Dr. Aug. Henry, but the flowers are believed to be greenish-yellow, with a paler lip. It is not in cultivation (p. 211).

AGAPETES MANNII, Hemsl., n. sp.*

This, like the closely-allied *Agapetes obovata*, belongs to a section of the genus having comparatively small, inconspicuous flowers, and small crowded leaves, similar to those of many of the *Vacciniums*. Both are natives of the mountains of Northern India, and when growing in masses, and full of flower, are very attractive, though the individual flowers are only about half an inch long. *Agapetes obovata* flowered at Kew in 1886, but the fact does not appear to have been recorded previous to this. Probably it was not considered sufficiently ornamental to deserve that distinction. Indeed, a small plant with a few flowers on it, such as I have before me of *A. Mannii*, would not be admitted in a greenhouse devoted to showy plants. Nevertheless, plants of it may have been distributed, therefore it may be well to point out the principal differences.

Agapetes obovata is a dwarf, densely-branched shrub, with scurfy branchlets, thickly set with coriaceous, obovate leaves, about half an inch long, and solitary flowers about a third of an inch long, borne on stalks scarcely so long as the leaves. The "reddish-brown" corolla is ventricose, and scarcely longer than the exerted anthers. *Agapetes Mannii* differs in having almost glabrous branchlets, lanceolate leaves, and white flowers, half an inch long, with a cylindrical corolla, and slightly exerted anthers.

Agapetes Mannii is a native of the Khasia hills, and living plants of it were sent to Kew with various Orchids, including *Dendrobium Williamsonii* by Mr. Gustav Mann, early in 1889. It gives me much pleasure to attach the name of my old friend to this plant, a native of the country where he spent at least a quarter of a century of his life in the forestry department, after a most successful botanical expedition in the unhealthy regions of western tropical Africa.

According to notes accompanying some of the dried specimens in the Kew Herbarium, *A. obovata* is sometimes epiphytal, and it is probable that *A. Mannii* is also found under the same conditions. *W. Botting Hemsl., Herbarium, Kew.*

PEACHES AT THE ROYAL HORTICULTURAL SOCIETY'S GARDEN.

THOSE who have paid occasional visits to the Royal Horticultural Society's Garden at Chiswick during the summer and autumn of this year, cannot fail to have noticed how well the young Peach trees have been behaving themselves, the fine crops they have borne, and the deep colour of the fruit. These trees were presented to the Society in February, 1886, by Mr. John Fraser, of the Lea Bridge Nur-

* *Agapetes Mannii*, Hemsl. — Species nova. *A. obovata* similis, differt foliis lanceolatis, floribus albis, corollis cylindricis semipollicaribus. Frutex nanus, forsan raro ultra pedem altus, ramosissimus, interdum epiphyticus caudice incrassato, ramulis gracilissimis brunneis hispidulis, internodiis quam folia multo brevioribus. Folia brevissime petiolata, crassa, coriacea, lanceolata spatulata, 6–9 lineas longa, obtusissima, glabra, venis paucis immersis inconspicuis. Flores albi viride tincti, 7–8 lineas longi, solitarii, penduli, pedicellis aureis leviter incrassatis flores vix æquantibus; calyx subcarnosus, parvisse puberulus, cupularis, dentibus 5 minutis acutis; corollæ dentes brevissimi, obtusi, recurvi; stamina 10, prope corollæ basin affixa, filamentis albis hirsutis quam anthera aurantiaca longioribus, antheris dorso bicalcaratis calcaribus sursum curvatis; stylus breviter exsertus. Fructus ignotus. *W. B. H.*

series, thus having been planted at Chiswick six years; they are trained on a long south wall, which is protected on either hand by walls, trees, &c. Several of the trees have been allowed to spread and now cover spaces 9 or 10 feet high, and as much across; most of the trees, however, have been kept small to allow of a larger number of varieties being grown. A few notes as to the time of ripening may not be out of place here. Waterloo, ripened about July 12, followed by Alexander at the middle of the month, the latter bearing a heavy crop of fair-sized fruits—highly coloured, and fine flavour; Early Beatrice was a week later than Alexander, and is a fine-flavoured, deep-coloured fruit. A few fruits of Early Rivers were gathered at the end of the month; this is a seedling from Early Silver, and is a large round fruit, beautifully speckled with red on the

August 27; Vanguard ripened a heavy crop on August 28, fruit large, streaked with red, flesh pale, juicy; early Murray and Bellegarde ripened on August 29; Frogmore Golden was gathered August 30, and is a beautifully-coloured fruit, like an Apricot, flesh yellow, good flavour and juicy. Malta and Downton Nectarine, both carrying fair crops, ripened on August 31. Later crops are Gregory's Late, just ripe; Late Admirable, Stump the World, Radcliffe, Teton de Venus, and Salway. Several other varieties might have been mentioned, but carried light crops; those mentioned above were excellent in every respect, and merited special attention. Given a good season next year, no doubt all the young trees will carry fair crops, and then comparison of dates may be better carried out. The Royal Horticultural Society is no doubt justly proud of its

proving of remarkable excellence, and varying from pure white to rose and crimson, those forms named C. M. Mrs. Brooman White and C. M. Empress of India being, perhaps, the handsomest coloured forms known, and they and other of the Arddarroch varieties have been already noted in our columns. Some of the specimens are over 3 feet across, and bear forty or fifty flowers, after the manner of that illustrated, which was taken from a photograph of a plant which recently flowered at Arddarroch.

HAZLEBOURNE, DORKING.

THE property of Welbore T. Ellis, Esq., situate near to Box Hill, of which a fine view is obtained from its grounds, has a pretty garden, in which a



FIG. 59.—CATTLEYA MENDELII.

(From a photograph belonging to R. BROOMAN WHITE, Esq.)

sunny side, and yellowish-green in the shade—very sweet and rich-flavoured. Acton Scott ripened about August 18, followed on the 20th by Scarlet Nectarine, the latter carrying a good crop of medium-sized but finely flavoured fruits; Early Alfred was ripe on August 22; Crawford's Early ripened on the 24th, and carried a fine crop; the white Nectarine also ripened on the 24th, followed by French Mignonette on August 25; Goshawk was fit to gather on August 26, and Early Louise on the same date—the latter is a medium-sized fruit, with a rough downy skin; Violette Hative also ripened on August 26, carrying a fine crop of fruit, medium size, good flavour, and a fine dark red colour next the sun; Hardwicke Elrue ripened on August 26; Dr. Hogg, Cricket Nectarine, Grosse Violette Hative, very deep colour; Red Magdalen, large, smooth skinned fruit, fine flavour; Stirling Castle and Red Roman, were all ripe by

fine collection of young Peach and Nectarine trees (consisting of about sixty varieties of the former, and twenty-four of the latter), which they have become possessed of through the liberality of Mr. J. Fraser, of Lea Bridge. *Lodoicea*.

CATTLEYA MENDELII.

RECENT importations of this beautiful variety of the labiate group of Cattleya have placed it among the most showy of the favourite genus, and the great variation in colour to be found in it renders it safe to acquire a goodly number of plants, for seldom are two exactly alike. In the gardens of R. Brooman White, Esq., Arddarroch, Garelochhead, Dumbartonshire, such a favourite is it, that a direct importation of it was made, the plants of which on flowering

huge specimen *Sequoia gigantea* and a few other large Conifers at the entrance form conspicuous objects. The flower garden also is very gay, and the whole of the things cultivated are in the best condition. But it is to the glasshouses that we must turn for the most interesting features of the Hazlebourne gardens, for, by the evidence of the new extension of the gardens under glass, it is in that direction that the tastes of the proprietor and his family lie, and especially in the cultivation of Orchids, for whose accommodation the new houses are chiefly designed. The pretty conservatory with its pillars and roof partly clad with showy climbers has a beautiful and glowing arrangement of flowers, among the elegant Palms and foliage plants. Here the Begonias and the remarkably well-cultivated specimens of *Achimenes* contribute largely to the show; the last-named being very fine in quality,

and literally covered with their pretty and variously coloured flowers. Some years ago the *Achimenes* used to be very extensively grown, but of late they are not so frequently met with in really fine condition.

The next house is a very prettily-arranged one, in which Orchids, chiefly in bloom, are mingled with coloured-leaved *Caladiums*, &c. Among the best specimens were three fine plants of the new *Cattleya Rex*, which have recently flowered and have seed-capsules, the result of cross-fertilisation; for Mr. Ellis, and his energetic gardener, Mr. Masterson, are trying their hands on this modern evolution of Orchid culture.

The *Cattleyas* are all in fine condition, and the *Calanthes* are grown in a strong and healthy manner, and showing well for bloom. Some good *Cypripediums* also occupy this house, and with regard to the *C. niveum* class, viz., *C. Godefroyæ*, *C. concolor*, and *C. bellatulum*, Mr. Masterson states that formerly they did not thrive satisfactorily, and it occurred to him that the addition of pieces of broken limestone rock, such as are found invariably about the roots of the imported specimens, might help them. He tried it, with the result that they are in the vigorous and still improving condition they are now in. Among the best specimens in flower in this house are a handsome plant of *Dendrobium formosum giganteum*, with sixteen flowers; a very fine form of *Lælia pumila Dayana*, with five blooms; several very handsome forms of *Odontoglossum Harryanum*, *O. crispum*, *O. hastilabium*, *O. grande*, and other *Odontoglossums*; a very fine *Dendrobium Dearei*, *Oncidium papilio*, *O. Kramerii*, *O. crispum* and *O. dasytyle*; the pretty *Trichocentrum albo-purpureum*, with several flowers, &c. Suspended overhead are a fine specimen of *Cœlogyne Massangeana*, with five spikes; some well-bloomed *Stanhopeas* and other Orchids in hanging-baskets, the whole combining to make a most effective arrangement, the beauty of the flowers being still further enhanced by the healthy appearance of the plants, and their clean, bright green foliage.

The next range in two divisions has healthy *Dendrobiums*, *Cattleyas*, &c., in the first, and in the second division other intermediate-house Orchids, of which the most noteworthy are some vigorous specimens of *Dendrobium Falconeri*, compactly trained, and which flower profusely and give little trouble. The situation they occupy is on a shelf near the glass of the roof, and they are said to be lightly syringed over frequently.

The *Odontoglossum*-houses contain a large quantity of plants in the most perfect health, showing that their culture is well understood; but the good impression caused by the excellent culture is somewhat toned down by the unwonted predominance of *Odontoglossum Lindleyanum*. The plants were imported direct, and the very thing which the venture was meant to cause to be avoided is that which has taken place.

Two new ranges of Orchid-houses have just been finished by Messrs. Foster & Pearson, of Beeston, Notts, and the span-roofed range in two divisions erected by them for the purpose of growing medium-size Orchids is all that an exacting cultivator could desire. It has ample rain-water tanks, perfect ventilation, easily-regulated heating, and the pitch of the roof and arrangement of the staging provides for the plants being well up to the glass, whilst at the same time they are convenient to get at. The staging is of iron, covered with red tiles, on which coal-ashes are placed for moisture, and everything about these new structures is arranged for utility and durability. The heating of the whole block, too, is carried out by Messrs. Foster & Pearson, one of their boilers working the whole; and the same firm are building the new Rose-house and pits in the paddock, which it is intended to incorporate with the already existing garden.

The *Phalænopsis*-house is undergoing rearrangement, the specimens already cultivated thriving so well that it is intended to grow them and allied plants more extensively.

In one of the houses are several specimens of the curious trailing *Oncidium scansor*, which has bulbs somewhat like those of *Odontoglossum Rosii*, but distantly borne on thin rhizomes, the newly-formed growths looking much like flower-spikes. But probably from the want of something necessary to bring about its flowering condition the flowers never appear. Other interesting plants are to be found in the other houses, and abundant evidence that Mr. Ellis and his family take personal interest in the gardens.

THE DOUBLE-FLOWERED TUBEROUS BEGONIA.

THOSE who have had the opportunity of attending the metropolitan exhibitions during the past season must have noticed the remarkable exhibits of double-flowering *Begonias*, exhibited principally by Messrs. John Laing & Sons, and Messrs. Cannell & Sons; and those of us who have noticed the rise and progress of other beautiful garden flowers as well as the *Begonia*, cannot help noticing the changing fashions in flowers, as in other things pertaining to the necessities, but especially to the luxuries, of our daily life. I well remember the late Mr. Charles Turner telling me he had to throw away a houseful of fine plants of *Souvenir de la Malmaison Carnations* because no one cared to buy. Some years later the same firm could not supply the demand for them. I do not say that the *Carnation* was, or ever will be, a despised flower; it has always been grown, and ever will be grown, by those who care nothing about the popularity of a flower, but who value them for their sweetness and beauty alone. The fakes and bizzarres also had their season of neglect. The choice old varieties raised and cultivated by the florists of bygone days were so little cared for, that many of them passed out of existence, and those that were obtainable were so debilitated by neglect, that new seedlings had to be raised before the florists were again in possession of a vigorous strain; and in this instance we owe a debt of gratitude to those who kept up the strain of the white-ground *Carnations* and *Picotees* through many years of comparative neglect. I mention *Carnations* and double *Begonias* together, because the flowers have some resemblance to each other in form.

At the *Carnation Society's* exhibition in July last, one of the most enthusiastic *Carnation* amateurs remarked to me that we ought not to rest satisfied until we had obtained *Carnations* of as large size and as well formed petals as those of the double-flowered *Begonias*. I thought it was a compliment to the *Begonias*, for I found that many of them, although they looked very handsome at the first cursory glance, lacked a good deal in that symmetrical form which the *Carnation* has. They were more double, but the petals instead of the regular and pretty arrangement of those of the *Carnations*, were crowded together, forming, in most instances, a number of centres instead of one. No florist worthy of the name would keep seedling *Carnations* with flowers like some of the double *Begonias*. It is pleasing to observe that in the case of some of the newer *Begonias*, varieties are to be found amongst them with the petals well arranged, of good form and with one centre only to each flower. I am informed that Messrs. Laing have some of this type. Indeed, I saw a most charming variety last year in the now celebrated nursery at Forest Hill, but for certain reasons, I would rather not say what name Mr. Laing proposed to give it; but I may say that the flower exactly resembled in its imbricated form a double *Camellia*. Mr. Cannell has also obtained examples of the right form. He had a single bloom of a scarlet-coloured variety at the Crystal Palace Dahlia show, faultless in form, which, with pardonable pride, he pointed out to his very particular friends; it was unnamed, and its owner seemed to think none of his living contemporaries were worthy of the honour of having their name attached to it. At all events, name or no name, the leading cultivators have now obtained varieties with exquisitely

formed flowers, the next process will be to lay all the shades of colour upon them.

As a raiser of *Carnations*, I am willing to admit that there is yet ample room for improvement both in form and colour. The raisers of double *Begonias* need to study form more; they already have the most lovely colours, and as decorative objects for the greenhouse or conservatory there are few summer-flowering plants to equal *Begonias*. They are easily cultivated, particular varieties being propagated readily from cuttings of the side growths taken off with a small portion of stem attached, and if these are planted in a sandy compost of equal parts of loam, leaf-mould, and sand, the cuttings form roots in a short time. They must be well looked after, of course. The best place for them is a forcing-house or pit, but besides this a mild bottom-heat should be provided. Cover them with hand-glasses, which should be kept rather close, removing the tops daily, and wiping off the moisture which gathers upon the glass. The cuttings must not have much water, or they would decay at the base. A small tuber will form at the end of the cuttings, which will flower strongly the following season. A thin shading ought to be placed over the glass to prevent injury from the sun, and when it is seen that the cuttings have formed roots, air must be admitted more and more freely, and less shading used. The production of plants by cuttings is necessary to obtain and perpetuate particular varieties, but it is a slow process in comparison with the more interesting one of raising plants from seeds. *Begonia* seeds are easily obtained from single flowers, which are produced on the varieties with double flowers; and if sown very early in the year, and grown on during the spring months in a hot-house, they can be grown into good flowering plants the same season, few plants needing less attention. They are as easily grown as *Fuchsias*, *Pelargoniums*, &c., and require very similar treatment in respect of potting material, watering, &c.

The better varieties now in cultivation can be obtained at a cheap rate, and those wishful of raising seedlings should purchase the best varieties to start with. As a type of double *Begonia* to avoid, I would instance one named *Goliath*—it has enormous red flowers, with half-a-dozen different centres; and as the right type, I recommend *Octavie*, white, and *Rosebud*, a charming rose-coloured variety. I noted a few of the very best varieties at the *Begonia* exhibition the other day, which may be useful to those thinking about forming a collection. The best in Messrs. Laing's group were *Lady Theodora* Guest, beautiful, delicately-tinted apricot colour; *Duke of Grafton*, clear salmon; *Lady Gertrude*, rosy-peach, white centre; *Duke of Fife*, deep cherry-rose; *Lady Dunsany*, salmon-peach; *Lord Esher*, bright fiery scarlet; *Picotee*, cream, the edge of the petals shaded rose; *Sir Trevor Lawrence*, bright red; and *Mrs. Regnart*, clear yellow. Messrs. Laing's exhibit comprised a fine collection of plants in flower, well grown, and the flowers standing up well above the foliage.

A good collection of cut flowers were sent by Messrs. Cannell, of Swanley, the best being *Rosebud*, clear rose; *Octavie*, a lovely pure white variety; *A. F. Barron*, clear rose; *Mrs. Lewis Castle*, apricot and salmon tints; *Mrs. Falconer*, fine deep yellow; *Mrs. C. West*, apricot-yellow, finely-formed petals; *Mrs. French*, cream colour; *Wm. Holmes*, salmony-rose; *R. B. Pearson*, a fine full rose. *J. Douglas*.

MARKET APPLES AND PEARS.

As the subject of Apple culture seems at the present time to be an important question for the country, perhaps this small contribution may be worth a place in your paper. About fourteen days past, Mr. Bick, gardener to W. Chamberlain, Esq., Harborne Hall (three miles from centre of Birmingham), brought me three or four of a bright coloured Apple in splendid condition for colour and dessert purposes, it was the old red *Astrachan*. This Apple is well suited for growing near towns, and colours

and ripens well, and bears an average crop, frequently fruiting on one and two-year-old plants. What I wish to observe is, the time it takes to get growers to take up an Apple for market. I have observed and taken a keen interest in the fruit that comes into Birmingham market during a period of at least a quarter of a century, and observe that to-day the same kinds of Apples and Pears find their way thither (foreign excepted). The Apples are Devonshire Quarrenden, Wyken Pippin, Blenheim Orange,

would buy it in preference to the American fruit; but they never have the chance here. A good average cropper which fruits when young, and good all round, is Lane's Prince Albert, the most prolific Apple I have ever seen or heard of, and a grand late Apple. I know trees that have never missed bearing for twenty consecutive years, sometimes very heavily, others light, as this year. It will keep sound till June; in fact, I have a few at this moment sound. This variety frequently bears on maidens. Wishing

of all foreign Apples, Newtown Pippin, frequently made less per barrel than the commoner but red-skinned varieties, as Baldwin and others. We also have plenty of Apples brilliant in colour and of fine quality, and a suitable climate, but there are many things yet to be done before we can dispense with the American, Canadian, and other fruits. An important item is the winter storage. Why could not our immense cider orchards be grafted with fine varieties? I enclose you a fruit of red Astrachan I picked from under some small trees in our nursery fourteen days ago five miles from Birmingham. *John Pope.*

MAXILLARIA VENUSTA.

THE accompanying illustration (fig. 60) shows a very curious union of two flowers of this beautiful species. The specimen was sent to us by Mr. McArthur, of Maida Vale. Union of two or more flowers, or "synanthly," as botanists term it, is of course a very common occurrence; but the flower before us is peculiar in two ways—first, that the union has taken place between two flowers, one above the other in the same vertical plane, instead of laterally as is commonly the case; and next, that all the parts of both flowers are present in their usual state. Usually when the flowers are united by their sides, some of the parts are squeezed out of existence, and the number of parts therefore is diminished.

In the plan BB shows the position of the bracts; ss, represent sepals; P, petals; L, lips, within each of which is the column.

THE NEW CELERY-CULTURE.* HOW TO GROW FINE CROPS WITHOUT BANKING.

Starting the plants.—For early Celery, seed of White Plume or Golden Self-blanching is sown in February in flats $2\frac{1}{2}$ inches deep, containing about 2 inches of loam. The surface of the latter is packed down, the seed is sown, pressed into the soil, and covered with about an eighth of an inch of loam. It is then watered, and the flats are piled on top of each other to keep the soil moist. In about six days they are taken down, watered, and piled up again, to remain until the seed begins to sprout, which one may expect in from ten days to two weeks. The flats are then spread out so that the sprouting seed can get the sun and air. At this time great care is necessary to keep the sprouting seed from drying up. Two hours under glass in the hot sun may destroy the plants, and yet sun and air are just what they need to make them stocky and vigorous.

When the plants are about 1 or $1\frac{1}{2}$ inches high, prick them out into flats filled with good rich loam 2 or 3 inches deep, or set in the garden if the weather is suitable, from $2\frac{1}{2}$ to 3 inches apart. Great care must be taken at all times to give the plants water enough to prevent them from wilting. When they are from 2 to 3 inches high, I scatter about two tablespoonfuls of Stockbridge Celery-fertiliser on every 75 or 100 plants. Scatter the fertiliser on the plants when the foliage is dry; then brush it off with a broom or the hand.

Preparing the ground.—Soil should be well enriched for Celery-growing. A crop of Celery cannot be injured by too much manure, provided it gets plenty of water also. Plough the manure under, or, in a garden, spade the ground, carefully turning all the manure under. Then scatter about 1500 lb. of Celery-fertiliser to every acre, harrow and rake the ground level. If the soil is a light loam, roll it with a heavy roller; a board will serve for firming a small patch. Raking the ground smooth saves much labour. If the ground is level and well pulverised, you can run the knives of the wheel-hoe

* Condensed from pamphlet *The New Celery Culture*, published by the Rural Publishing Company, New York city. Price, 20 cents.



FIG. 60.—MAXILLARIA VENUSTA.

Ribston Pippin, Flanders Pippin, Souring, and after Christmas the Claygate Pearmain and Court Pendu Plat, and just now and then a few Lord Suffields, &c., sent in by gardeners and nurserymen. All excellent sorts, although many that do not bear till they are eight or ten years planted, such as Wyken, Ribston or Blenheim. I have never seen in our market one pot of red Astrachan, Cox's Orange, or Lane's Prince Albert Apples; and yet the first-named variety bears early and well, and is the most suitable and would be a saleable and profitable early Apple. Of Cox's Orange, there are numbers of people who know this Apple to be one of the best, and

to be brief, I only mention a few sorts. What I see and contend for is, that there is a good market and a large demand in the town for good English-grown Apples. So many physicians and doctors now recommend them to be eaten for different complaints, that buyers would prefer English-grown if they could get them. We want Cox's Orange to compete against Newtown Pippin, but our growers have stood still while the Americans and Canadians have gone ahead for the eye-colouring as well as the palate. An incident occurred last year which I do not remember to have done so before. Most purchasers are taken by the colour, and so it is that the best

very near the plants, save much hand-weeding, and the hoe can be run much faster.

For all kinds of vegetables—Beets, Carrots, Onions, &c.—a thorough raking, which pulverises and levels the ground, not only saves labour but also increases the product. A wheel-hoe cannot be advantageously used if the ground is lumpy, stony, or uneven. In the farming of the near future the wheel-hoe is destined to become a very important implement.

Setting the plants.—Mark off the ground in rows 7 inches apart, and with a dibble or trowel set out the plants—from 3 to 6 inches high—7 inches apart, straight in the rows. If they are half an inch from a straight line, either to the right or left, they are in danger of being cut off by the knives of the wheel-hoe. Press the ground firmly about the roots. If the weather is warm and dry, water well after the plants have been set out, giving the ground a good soaking to keep them from wilting.

When the weeds begin to appear, run the wheel-hoe through the rows. The knives are too long for rows 7 inches apart; cut them off about 5 inches from the centre of the hoe. There will then be 2 inches between the ends of the knives and the next row. After you have gone through one way, let the crop stand a day or two before going through the other way. Four to six days afterwards go through again. Use the wheel-hoe frequently, and you will be agreeably surprised at the large amount of hand-weeding that is avoided.

When the plants are about half-grown, scatter broadcast about 1200 lb. of fertiliser to the acre. Do not do this when the foliage is wet. I have never discovered any injury from using fertiliser, even on tender plants, when the foliage was dry.

The plants are now so large that the hoe cannot be run through them. They cover the ground, preventing the weeds from growing, except a few that started before the Celery. Now, as you look over the field, you can readily realise that the crop is very large—126,000 plants on an acre. The soil is full of working roots that require a large amount of food, and it must be given in a liquid form, hence the necessity of giving the plants plenty of water. Vegetables drink the food, while animals eat it; hence the great importance of giving Celery an abundance of water to dissolve its food. The more fertiliser used the larger the growth, and the more water required to make the food in the fertiliser available. There are 100,000 good plants upon an acre, allowing 26,000 for small plants and "misses."

The illustration shown here [not given by us. Ed. of the *Gardeners' Chronicle*] is taken from a photograph of my field, displaying a crop from which I sold Celery at the rate of 10,000 dols. per acre. The plants from this crop were set 7 inches apart each way. The Celery was very nicely blanched, and much cleaner and brighter than any Celery banked with earth. It was pronounced the best Celery ever seen at that season of the year. One plant made a satisfactory bunch which readily sold for 1 dol. 25 cents per dozen, or over 10 cents a plant. Last season the yield on one twelfth of an acre was at the rate of 4000 dols. an acre. It was sold to commission merchants in Providence, R. I., for 1 dol. a dozen; a few dozens were sold in the market for 1 dol. 25 cents each.

Blanching Celery.—Three or four weeks after the 1200 lb. of Celery-manure before mentioned had been applied, about 1300 lb. more were used. The Celery at this time was growing and blanching rapidly. In the new Celery-culture there is no back-breaking labour in banking up. The working roots are not cut off to secure earth to bank it up, thereby checking the growth. No rheumatic pains are caused by getting down on one's knees to press the earth about the plants. No worms eat the glossy surface of the stalks, making them rusty and unsaleable. The growth is very rapid, consequently the crop is tender, solid, and brittle; there are but very few spongy plants. Watering or irrigating is the all-important work, and about all that is

necessary at this stage of growth. The natural rainfall cannot be depended on to give sufficient moisture to grow such a large crop.

Celery to be "good" must be pleasing to the eye as well as pleasing to the taste. The bunches ought to be uniform in size, the plants washed clean and well trimmed. By adopting the new method of growing Celery—that is, planting it 7 inches apart—the foliage is so thick that beneath it the air is moist and the shade dark, causing the Celery to blanch well, especially the easily-blanching varieties. All Celery not blanched before it is time to secure it from frost is packed in pits. These are dug from 18 inches to 2 feet deep (according to the size of the plants), and about 6 feet wide. The earth thrown out is banked on each side, forming a wall 1 foot deep, and making the pit from 2½ to 3 feet deep. The Celery is dug up with a little dirt adhering to the roots, carried to the pits and closely packed. Posts are placed where needed to stretch stringers upon, to support the covering of boards. Be sure the covering is strong enough to hold up from 3 to 8 inches of soil. Leave a board loose every 15 feet, so that it can be taken off to give air or to reach the Celery when wanted. Cover this board with coarse manure so that it may be removed, and the Celery taken out when the ground is frozen.

This pit answers very well for keeping Celery up to Thanksgiving or Christmas. One acre of Celery well grown by this new method will require about one-tenth of an acre of storage room. Very few farmers have this in their cellars or root-houses. Make the pits a foot higher on one side, so that the water may run off. Do not store your Celery in pits or cellars when wet. I have stored Celery in pits as green as it could be, and taken it out in February and March well blanched. The pits are dug in the field near the Celery, so that the latter can be easily stored when dug. My soil is a sandy loam, so there is no danger of water getting into the pits. This high, dry, sandy soil is considered poor soil for Celery, but my experience has taught me that nearly all ground can be made good by a judicious use of water and plant food. Let me advise all those who contemplate growing Celery on an extensive scale not to do it by this new method without experience, but to try a small piece first.

Cost of an acre.—The expenses of growing and marketing 1 acre of Celery by the new method are as follows:—

1 lb. seed	\$2 50
10 cords manure	50 00
Spreading	2 50
Ploughing	2 00
Raking and rolling	5 00
126,000 plants	128 00
Planting	41 50
Hoeing and weeding	27 00
2 tons fertiliser	80 00
Sowing fertiliser	3 00
Cleaning and marketing	250 00
Storing a portion of the crop	50 00
Cost of water and labour in watering	50 00
Total	\$689 50

With experience some of these expenses can be reduced. Barn-yard manure in this vicinity is worth from 3 dols. to 4 dols. per cord. The cost of growing 126,000 plants, in hotbeds or greenhouses, for early Celery, would amount to more than 1 dol. per 1000; but part of the plants were grown in the field at a cost of 50 cents per 1000. The cleaning and marketing would cost about 120 dols. if the Celery is sold to commission-merchants and marketed from the field before it is stored. The water used was from the city supply, running through a ½-inch meter, conducted through pipes in and through the field, to which was attached a hose at frequent intervals. The water supply was very unsatisfactory and insufficient, especially in dry, warm weather when the Celery was large.

Marketing the crop.—The question, "How did you market such a large crop of Celery?" has been often asked, and it is a very important question, judging from the large number of inquiries received. In places where the crop had grown rankly and rapidly it was ready for market in August. Two

large tubs, made by sawing a hogshead into halves, were taken to the field to hold water for washing the Celery. A man went along the rows digging up the plants with a spading-fork in his right hand, pulling them out with his left, and shaking the dirt from the roots by striking them against the handle of the fork. The plants were then stripped of wilted stalks and carried to the washing-tubs.

No knife was used on the Golden Self-blanching variety. The roots were left on, and the plants were washed with a brush-broom in one tub and rinsed in the other, then placed on a table, where they were bunched and packed in water-tight boxes or crates, enough water being poured into the boxes to cover the roots. Celery marketed in this way will keep good one week in warm summer weather. Commission-merchants can then ship to hotels and stores throughout the country. This is the greatest improvement ever made in marketing early Celery.

These crates are highly praised by all who use them. They are made to hold two or two-and-a-half dozen roots each. If the market is dull and part of the load is unsold, it can be left at some place or brought home and offered for sale the next day with a clear conscience, for it will be as good as the Celery taken up twenty-four hours later.

The increase in the consumption of Celery during the last few years has been so great that growers have not kept up with the demand. Last month (February) Celery was selling in Boston for 4 dols. per dozen. Three or four years ago but small quantities were sold before Thanksgiving. Now large quantities are sold in August, September, and October. To keep Celery brittle, solid, and saleable, these water-tight crates are indispensable during the warm summer weather. On Thursdays I have sold sixty or ninety dozen Celery roots to commission-merchants, they selling them on Fridays and Saturdays to markets and stores. The markets kept some of Celery till Tuesday and Wednesday of the next week, and this in summer with the thermometer up to 60° and 80°. Early Celery cannot be marketed successfully without these crates. A few buyers will object at first to having the roots left on, but after they see the advantages of the system they will not buy Celery in any other form. They find they can deliver it to consumers fresh and solid with the roots on. When Celery is grown and marketed in this way, three men can take up and prepare about 100 dozen in a day. *Robert Niven.*

CONIFER NOTES.

PROFESSOR BAYLEY BALFOUR obligingly sends us from the Pinetum of Keillour, Perthshire, a series of specimens of *Abies balsamea*, showing extraordinary variations in the shape, size, and colour of the cones, the degree to which the bracts protrude, and to a less degree in the foliage. The Pinetum at Keillour, some 6 miles from Methven Castle, was originally planted in 1831 by Thomas Bishop for Mr. Smythe. Bishop kept a record of his planting, and a history of the plantation up to 1847, together with a chart. About 200 trees of *Abies balsamea* were planted, of which some thirty now remain, the largest being 60 feet in height, with a circumference of 5½ feet at 3 feet from the ground.

In the same Pinetum there is a magnificent *Picea Menziesii* with a stem 14 feet in circumference, and some 90 feet in height. Prof. Balfour, to whom we are indebted for these particulars, hopes later on to make a more extended examination of this remarkable Pinetum, one of the first formed in Scotland.

Abies Veitchii.—Mr. Croucher sends us from Ochertyre, near Crieff, a cone of this species, the first cone of its kind produced in this country so far as is known. It differs from the form figured in these columns on February 28, 1880, in having projecting bracts; but Dr. Mayr tells us that in Japan there is much variation in this respect. The tree at Ochertyre, whence our cone was taken, is 25 feet 6 inches high. We shall have another occasion of alluding to this species.

Two or three different things are known as *A. Veitchii*, but the one now mentioned is the true one.

Abies grandis.—Mr. Crump kindly sends us from Madresfield Court, near Malvern, a splendid branch with cones of *Abies grandis*. It is well represented in our figure at p. 561 of our volume xxiv. for 1885. The tree is no less than 80 feet in height, a magnificent specimen, probably the finest in Britain. It has sometimes been mistaken for *A. magnifica*, but the specimen sent by Mr. Crump leaves no doubt whatever that the tree is really *A. grandis*. It would be of interest to know when it was planted.

CARALLUMA CAMPANULATA, N. E. Br. (BOUCEROSIA CAMPANULATA, Wight).

This quaint-looking plant, represented at fig. 61, was sent to Kew from Ceylon in 1890, and flowered in July of this year. It is one of a group inhabiting the hot and dry regions of India and Africa, growing in places where there is little water and plenty of sunshine; they are rarely seen in flower in this country, and then usually only in large botanic gardens. The plant here figured is a native of Ceylon and the Madras Presidency, and was originally described and figured by Wight under the name of *Boucerosia campanulata*; but, as I have shown in vol. xx. of Hooker's *Icones Plantarum*, *Boucerosia* cannot be maintained as a genus distinct from *Caralluma*. I therefore now refer this plant to the latter genus.

Caralluma campanulata is a dwarf succulent plant 6 to 9 inches high, of tufted growth, with numerous 4-angled glabrous stems, $\frac{1}{2}$ to $\frac{3}{4}$ inches thick, toothed on the angles, the teeth bearing minute rudimentary leaves about 1 line long. The numerous flowers are disposed in hemispherical umbels about 2½ to 3 inches in diameter, terminating the stems. The pedicels are from $\frac{3}{4}$ to 1 inch long, glabrous, green speckled with dull purple. The sepals are lanceolate-acuminate, minutely ciliate-denticulate, glabrous. The corolla is 1 to 1½ inch in expanse, nearly flat, five-lobed to about half-way down, the lobes ovate-acute; the face of the corolla is of an uniform rich velvety brownish-purple; but beyond the velvet-like surface there are no hairs, and the lobes are not fringed, the back is green freckled with dull purple. The outer corona consists of five lobes, bipartite nearly to their base, with the divisions diverging, and acute. The inner corona consists of five simple linear lobes, incumbent on the back of the anthers, and adnate behind to the sinuses of the outer corona; they usually have two slight longitudinal grooves, and are irregularly three-toothed or sub-entire at the apex. The entire corona is dark purple-brown.

This species is nearly allied to *C. umbellata*, but that is rather a stouter plant, and has the corolla marked with transverse yellow lines. Since I consider *Boucerosia* to be generically indistinguishable from *Caralluma*, as I have already pointed out in the twentieth volume of Hooker's *Icones Plantarum*, and having recently gone through the whole of the Kew material, this may be a convenient place to enumerate the species which I refer to the genus *Caralluma*. All those here enumerated which are marked with a star (*) I have seen and examined, and those marked with a dagger (†) I have seen alive.

Enumeration of the species of *Caralluma*.

- **C. aaronis*, N. E. Br., Mount Hor (Mount Aaron), Arabia.
Boucerosia aaronis, Hart., in *Trans. Roy. Irish Acad.*, 1885, v. 28, p. 436.
- C. acutangula*, N. E. Br. Senegambia.
Boucerosia acutangula, Dcne. in *DC. in Prod.*, v. 8, p. 648.
- Desmidorchis acutangula*, Dcne. in *Ann. Sc. Nat.*, ser. 2, v. 9, p. 265.
- **C. ascendens*, R. Br. in *Mem. Wern. Soc.*, v. 1, p. 25. Deccan, Coromandel.
Stapelia ascendens, Roxb. Coromandel., v. 1, p. 28, t. 30.
- C. angu*, N. E. Br. Abyssinia.
Stapelia angu, Rich. *Fl. Abyssin.*, v. 2, p. 50.

- **C. aperta*, N. E. Br. in Hook. *Icon. Pl.*, v. 20, pl. 1905, fig. A. Namaqualand.
Stapelia aperta, Masson, *Stap.*, p. 23, t. 37.
- C. arida*, N. E. Br. Kannaland, South Africa.
Stapelia arida, Masson, *Stap.*, p. 21, t. 33.
- **C. armata*, N. E. Br., in Hook. *Icon. Pl.*, v. 20, pl. 1902. Namaqualand.
- †*C. attenuata*, Wight, *Icon.*, v. 4, p. 15, t. 1268. Madras.
C. attenuata, Wight, and *C. fimbriata*, Hook. f., *Fl. Brit. Ind.*, v. 4, pp. 76, 77, not *C. fimbriata*, Wall.
- C. Aucheriana*, N. E. Br. Arabia.
Boucerosia Aucheriana, Dcne. in *DC. Prod.*, v. 8, p. 649; Boiss. *Fl. Orient.*, v. 4, p. 63.
I have not seen an authentic specimen of this plant, but from description, I think it probable



FIG. 61.—CARALLUMA CAMPANULATA: FLOWERS BROWNISH-PURPLE.

that Fischer 102, and Schweinfurth 84 (Arabian expedition), may belong to it.

- †*C. campanulata*, N. E. Br., described above. Madras, Ceylon.
Boucerosia campanulata, Wight, *Icon.*, v. iv., pt. 2, p. 1, t. 1287.
- **C. cicatricosa*, N. E. Br. Arabia.
Boucerosia cicatricosa, Desfiers, *Voy. Yemen*, p. 170, pl. 4. This plant has been distributed by Schweinfurth (No. 1618! and probably No. 692) as *B. quadrangula*, but it does not agree with Forskal's description of that plant. The true structure of the corona of this plant is somewhat concealed by the two teeth, into which each of the lobes of the outer corona are normally divided, being adnate throughout their length to the backs of the inner coronal lobes, so that the entire corona appears composed of five rectangular lobes, each with a projecting central tooth incumbent on the back of an anther.

- **C. crenulata*, Wall. *Pl. Asiat. Rar.*, v. 1, p. 6, t. 7. Burma.
Desmidorchis crenulata, Dcne., in *Ann. Sc. Nat.*, ser. 2, v. 9, p. 266.
Boucerosia crenulata, Wight and Arn., *Contrib. Bot. Ind.*, p. 34. In Hook. *Fl. Brit. Ind.*, v. iv., p. 77. This plant is confused with *C. lasiantha*, and the description there given refers entirely to the latter plant.
- C. Decaisneana*, N. E. Br., Senegambia?
Boucerosia Decaisneana, Lem. *Herb. Gen. Amat.*, ser. 2, v. 4, t. 21; Dcne., in *DC. Prod.*, v. 8, p. 648.
- †*C. dependens*, N. E. Br. in Hook. *Icon. Pl.*, v. 20, pl. 1903. F. B. Clanwilliam, S. Africa.
- C. diffusa*, N. E. Br., Travancore.
Boucerosia diffusa, Wright, *Icon.*, t. 1599.
- **C. edulis*, Benth., in Benth. and Hook. *Gen. Pl.*, v. 2, pp. 782, 783, Scinde, Punjab.
Boucerosia edulis, Edgew., in *Journ. Linn. Soc.*, v. 6, p. 205. B. Stocksiana, Boiss. *Fl. Orient.*, v. 4, p. 63.
- †*C. europæa*, N. E. Br., Spain, Lampedusa Is., Limosa Is., and N. Africa.
Stapelia europæa, Guss., *Notiz.*, 1832, No. 37, with fig., and *Suppl. Fl. Sic. Prod.*, p. 65.
Stapelia Gussoniiana, Jacq. ex Lindl., in *Bot. Reg.*, t. 1731.
Ayrtisanthes Gussoniiana, Mik., in *Act. Acad. Cæs. Leop.*, v. 17, p. 594, t. 41; *Bot. Mag.*, t. 5087.
Boucerosia europæa, Hook. f., *Bot. Mag.*, in text of t. 6137.
- C. fimbriata*, Wall. *Pl. Asiat. Rar.*, v. 1, p. 7, t. 8, Burma.
The *C. fimbriata* of Hook. *Fl. Br. Ind.*, v. 4, p. 77, is *C. attenuata*. I have seen no specimens of Wallich's plant, but from his description and figure I believe it to be quite distinct from *C. attenuata* as also did Wight, see Wight, *Icon.*, v. 4, pp. 15, 16.
- †*C. hottentotorum*, N. E. Br., in Hook. *Icon. Pl.*, v. 20, under pl. 1903, Namaqualand.
Quaqua hottentotorum, N. E. Br., in *Gard. Chron.*, 1879, v. 12, pp. 8, 9, f. 1.
- **C. incarnata*, N. E. Br., Saldanha Bay, S. Africa.
Boucerosia incarnata, N. E. Br., in *Journ. Linn. Soc.*, v. 17, p. 166, pl. 11, f. 14—17.
Stapelia incarnata, Linn. f., *Suppl.*, p. 171; Masson *Stap.*, p. 22, t. 34.
- **C. indica*, N. E. Br., Eastern Madras.
Hutchinia indica, Wight and Arn., *Contrib. Bot. Ind.*, p. 35.
Wight, *Icon.*, v. 2, p. 4, t. 355.
Boucerosia Hutchinia, Dcne., in *DC. Prod.*, v. 8, p. 649.
B. Hutchinia, Hook. f., *Fl. Br. Ind.*, v. 4, p. 78.
- **C. lasiantha*, N. E. Br., Madras.
Boucerosia lasiantha, Wight, *Icon.*, v. 4, part 2, p. 1, t. 1286. This is united with *C. crenulata* in Hook. *Fl. Brit. Ind.*, but is perfectly distinct, and easily recognised by its hairy corolla.
- **C. linearis*, N. E. Br., in Hook. *Icon. Pl.*, v. 20, pl. 1903, f. A., Swartberg, S. Africa.
- **C. longidens*, N. E. Br.—Stems erect, branching; branches 5 to 8 inches long, attenuated upwards, 4-angled, angles toothed, the teeth furnished with fleshy, terete, acuminate, deciduous leaves $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Flowers solitary in the axils of the teeth along the upper part of the stem. Pedicels $\frac{1}{2}$ -inch long, glabrous. Sepals 1 to 1½ lines long, ovate-acuminate, glabrous. Corolla with a campanulate tube 3 to 3½ lines long, and five spreading, ovate-lanceolate, acute lobes 3 lines long, apparently of a dark purple-brown colour, quite glabrous. Outer corona of ten subulate teeth 2 lines long, the five lobes of which it is composed being divided almost to the base into two long slightly diverging teeth. The inner corona of five subulate lobes, like those of the outer corona, but with the tips closely inrolled. Wady Laëmeb, between Suakin and Berber, in Nubia, Schweinfurth, 441! This has been distributed as *Stapelia angu*, Rich.; but that plant

is described as having a five-parted corolla, whilst this has a very distinct and rather large tube, with spreading lobes; nor is *S. ango* described as having such leaves as this plant has, and it comes from a widely different locality.

†*C. lutea*, N. E. Br., in Hook. *Icon. Pl.*, v. 20, pl. 1901. Orange Free State, Transvaal.

†*C. mammillaris*, N. E. Br., in Hook. *Icones Pl.*, v. 20, under pl. 1902. Namaqualand, Karoo.

Boucerosia mammillaris, N. E. Br., in *Journ. Linn. Soc.*, v. 17, p. 165, pl. ii., f. 5—13.

Stapelia pulla, Masson, *Stap.*, p. 21, t. 31; *Bot. Mag.*, t. 1648.

†*C. maroccana*, N. E. Br. Mogador, Morocco.

Boucerosia maroccana, Hook. f., *Bot. Mag.*, t. 6137.

†*C. Munbyana*, N. E. Br. Algeria.

Boucerosia Munbyana, Dcne., in Munby, *Fl. Alger.*, p. 25; and Durand, *Bot. Alger.*, t. 62, f. 1.

C. parviflora, N. E. Br. Namaqualand.

Stapelia parviflora, Masson, *Stap.*, p. 22, t. 35.

**C. pauciflora*, N. E. Br. Madras.

Boucerosia pauciflora, Wight, in *Madras Journ. Sc.*, 1837, v. 6., p. 473.

Desmidorchis pauciflora, Dcne., in *Ann. Sc. Nat.*, ser. 2, v. 9, p. 266.

C. penicillata, N. E. Br. Arabia.

Boucerosia penicillata, Deflers, *Voy. Yemen*, p. 169.

C. pruinosa, N. E. Br. Namaqualand.

Stapelia pruinosa, Masson, *Stap.*, p. 24, t. 41.

C. quadrangula, N. E. Br. Arabia.

Boucerosia quadrangula, Dcne., in DC. *Prod.*, v. 8, p. 664; B. Forskalii, Dcne., in DC. *Prod.*, v. 8, p. 648.

Stapelia quadrangula, Forak, *Fl. Egypt.-Arab.*, p. 52, t. 6.

Desmidorchis Forskalii, Dcne., in *Ann. Sc. Nat.*, ser. 2, v. 9, p. 265.

I have seen no specimen that I can refer to this plant, but from description it must be nearly allied to *C. Aucheriana*.

†*C. ramosa*, N. E. Br., in Hook. *Icon. Pl.*, v. 20, pl. 1904. Karoo, S. Africa.

Stapelia ramosa, Masson, *Stap.*, p. 21, t. 32.

**C. retrospiciens*, N. E. Br., Abyssinia.

Desmidorchis retrospiciens, Ehrenb! in *Abhandl. Acad. Berl.*, 1831, p. 33.

Boucerosia Russelliana, Courtlet Brongn., in *Bull. Soc. Bot. France*, 1860, v. 7, p. 900.

**C. socotrana*, N. E. Br. Socotra.

Boucerosia socotrana, Balf. f., *Proc. Roy. Soc. Edinb.*, 1884, v. 12, p. 79.

**C. speciosa*, N. E. Br. Magadoxo, Somaliland.

Sarcocodon speciosus, N. E. Br., in *Journ. Linn. Soc.*, v. 17, p. 170, t. 12, f. 4—8.

C. subulata, Dcne., in *Ann. Sc. Nat.*, ser. 2, v. 9, p. 267. Arabia.

Stapelia subulata, Forsk. *Fl. Egypt.-Arab.*, p. cviii., t. 7. I believe that *Boucerosia sinaica*, Dcne., in DC. *Prod.*, v. 8, p. 649, is this plant, but the specimen I have seen has no flowers.

**C. tuberculata*, N. E. Br.—Entire plant quite glabrous, $2\frac{1}{2}$ to 6 inches high; stems, $\frac{1}{3}$ to $\frac{1}{2}$ inch thick; 4-angled, angles toothed. Flowers crowded into small umbels at the apex of the stems, dark purple-brown, or blackish-purple. Pedicels, 1 line long. Sepals, $\frac{3}{4}$ line long, ovate-lanceolate, acute. Corolla, 7 lines in diameter, rotate, with a very short campanulate tube, the lobes $2\frac{1}{2}$ to 3 lines long, $1\frac{1}{4}$ to $1\frac{1}{2}$ line broad, oblong-lanceolate, subobtusate, with an inflexed apiculus, margins reflexed?, the face covered with small tubercles, the back glabrous and smooth. Outer corona of ten erect subulate teeth, about $\frac{1}{2}$ line long, formed by each of the five lobes being divided almost to the base into two slender teeth. Inner corona of five linear lobes incumbent on the backs of the anthers, and not produced beyond them. *Boucerosia Aucheri*, Aitchison, *Punjab Cat.*, p. 90; B. *Aucheriana*, Hook. f., *Fl.*

Brit. Ind., vol. iv., p. 78, not of Dcne. Punjab, Aitchison, 57! 415! 465!; Beluchistan, Stocks! 596; and specimens collected at Peshawur, Stewart, 432; and in Afghanistan, Aitchison, 492, probably belong here, but they are without flowers. This plant is certainly distinct from *C. Aucheriana*, with which it has been considered conspecific.

**C. umbellata*, Haw. *Syn. Pl. Succ.*, p. 47; Deccan, Madras.

Boucerosia umbellata, Wight and Arn. *Contrib. Bot. Ind.*, p. 34.

Desmidorchis umbellata, Dcne., in *Ann. Sc. Nat.*, ser. 2, v. 9, p. 266.

Possibly *Stapelia fasciculata*, Thunb., *Fl. Cap.*, may be a *Caralluma*, but his specimen has flowers. N. E. Brown.

GARDEN ORNAMENTATION.

We can but praise the desire which shows itself in many of our gardeners, amateur and professional, to ornament our public parks and squares, and also private gardens, with a profusion of flowers which never fail to delight the eye and charm the mind. Floral decoration is based wholly on fancy, and the taste and ability of the individual ought to do duty for the laws which in the case of sciences must be learned and obeyed. But at the same time, the imagination must curtail its flights, and content itself with harmonious effects, without going in search of the weird. The taste for curious and out-of-the-way ornamentation, is not very pronounced in this eastern hemisphere of ours. Beds with thousands of arabesques intercrossing shrubs in the form of men, animals, or miscellaneous instruments, are sights not often met with here. In the United States, however, all is different. In the parks a desire, amounting almost to a plague, is raging for floral decoration in the shape of portraits of celebrated men, forty times larger than their natural size, pairs of gloves and boots, huge watering-pots, and a veritable menagerie of dogs, cats, and birds.

Those who intend to cross the Atlantic next year, should not fail to visit Washington Park, Chicago, where specimens of this extraordinary ornamentation are to be met with. The superintendent of the park is a German, who has given many proofs of the resources of his inventive genius, and if his latest ideas are more conducive to laughter than admiration, we must take into consideration the amount of trouble taken to produce the result.

The entrance to the flower walk in which the novelties of the year are displayed, for the superintendent changes his modes of decoration every spring, is made through a door entirely composed of flowers. The pillars are formed of planks of wood covered with trailing plants down the edges, while the middle is composed of ingeniously threaded Ivy leaves. The framework of the folding doors is of wood, but nothing can be seen but a profusion of leaves and petals. The next surprise that greets the visitor is a solar sundial, designed on some sloping turf. This dial, semicircular in shape, measures 10 yards. The plants used for "Sol's block" are the *Echeveria*, the *Alternanthera*, and the *Sedum dasyphyllum*.

Continuing his walk through a sort of avenue formed by little pillars of *Echeveria* surmounted by balls of *Sedum*, the visitor will notice a majestic map of the world, in which continents, seas, islands, and even the parallels and meridians are represented by plants. The earth is coloured white on this terrestrial globe, the *Echeveria glauca* being employed; while the sea is depicted by the sombre colour of the *Oxalis*.

That there is a demand for this somewhat fantastical ornamentation is evident, for the gardens are visited by thousands of people, and as the designs are varied yearly, no lack of variety is provided. In our own parks we are content with trim borders and gay flowers and smooth turf, but the jaded taste of the American desires more stimulating floral attractions. The varieties of past years are too numerous to be mentioned here in full. One year,

an Egyptian scene was represented, with floral sphinxes and obelisks.

Another year, elephants were all the rage. Several animals contained no less than 3000 plants of *Echeveria*. Another variety was a perpetual calendar, the day and date being of *Echeveria secunda glauca*, on a background of *Sedum acre*; the date was changed nightly, and the gardeners often had to remove and replace 3000 plants before the morning.

An amusing anecdote is related concerning this new craze:—A newly-married couple had taken a suburban villa, which possessed a fair-sized garden; this was the special care of the wife, who, one day, while her husband was away at his work, called in the assistance of a "floral artiste" to plan her garden. She gave him *carte blanche* to act as he saw fit; but by planting the beds in the form of wild cats, fabulous birds, huge pairs of boots, and Guy Fawkes, and clipping the trees so that they resembled huge watering-cans and whisky-bottles, he so changed the aspect of the place as to cause the husband a severe shock of his nervous system, from which he was a long time recovering.

New York, Boston, Brooklyn, all possess fine parks, and we can but hope that they may not be spoiled in the way Chicago, in our opinion, has spoiled hers. H. C. Fyfe, 80, Elsham Road, Kensington.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

CUCUMBERS.—If seeds were sown as advised, strong plants will now be available for planting. Should the means of supplying bottom-heat be inadequate to requirements, a hot-bed should be made of lasting materials for the soil to rest on; and unless provision was made to preserve last year's Oak or Beech leaves in a dry condition, the materials from a spent hot-bed can be used instead. One-third of this to two-thirds of rough stable-litter, well-mixed, and turned several times before it is finally made up, will serve in maintaining a steady warmth for a considerable length of time, if firmly put together. When this hot-bed has attained a warmth of 75° or 80°, holes 6 or 8 inches deep may be made in it, and a mixture of loam, leaf-mould, and horse-droppings, placed in them, to receive the plants in something like twenty-four hours after completing the work. Plant firmly, thoroughly water the soil with warm water, and afterwards maintain a humid atmosphere, with a minimum temperature of 75°, until the roots get a good hold of the materials, which will be in about a fortnight. The treatment after this period should be somewhat different, as the shorter days and long nights favour sappy, unfruitful growths; and to counteract this, a dryer and more buoyant air is indispensable. Open the ventilators on all favourable occasions, if only for ten minutes once a day, and keep a sharp lookout for red spider and thrip. Plants now in bearing, and intended to yield a supply of Cucumbers well into the winter months, should be thinly cropped and relieved of their fruits as soon as large enough for consumption. Top-dress the beds if the roots have found their way to the surface, and assist the plants with liquid manure. Take advantage of sunny days to syringe the plants with soapy-water for insect pests, for success largely depends on perfect immunity from such plagues.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

CHRYSANTHEMUMS.—Care must now be taken in having the growths of these plants tied in, and any which are intended to produce show blooms should have all the side-shoots taken off as soon as they are visible, so as to throw strength into the main stems. At this part of the season the flower-buds are swelling fast, and the plants will require a top-dressing of rich fibrous loam, from which the finer portions have been removed, adding to this some partially rotted horse-droppings, first rubbing them through a coarse sieve; and these ingredients, with the addition of a sprinkling of bone-meal, will be found a suitable top-dressing mixture. Plants with from five to eight stems should be disbudded, so as to encourage the growth of fine blooms, and assisted

occasionally with manure-water, or a trustworthy artificial fertiliser. Should traces of mildew be noticed, apply flowers-of-sulphur without delay.

ERICAS.—Large specimens of the above not potted in the spring, but which were left over until they had finished flowering, are the better for re-potting at this season than late in the summer, when the flowering comes to an end. With the cooler weather now prevailing, and a moister atmosphere, the specimens have a better chance of recovering from the necessary disturbance of re-potting than earlier in the season; moreover, there is still ample time for the roots to seize upon the new soil before winter. Where it is found that the plants are too much pot-bound to carry them well through next year's flowering, it is better to pot them at the present time than to run risk in the spring, especially if they are large. Make sure that every plant that is to be repotted is in a nice moist condition at the root—a very important point—as then the plants will not require watering for some time after potting. As a soil for *Heaths*, brown fibrous peat of the best quality that has been stacked two years is best, and to this may be added sufficient clean sharp white sand and finely-broken sandstone, if obtainable, as will make it easily pervious to water, &c. The soil should be moist, not wet, as in the latter case it would form a hard mass into which neither water, air, or the roots could penetrate. Have good drainage, i.e., large crocks at the bottom of the pot, and gradually lessen the size of the rest till quite fine stuff is at the top, and over this lay some rough peat of the size of Walnuts. The old mass of soil and roots should not be much disturbed, and the new soil should be made as firm by ramming as the ball is, otherwise the water will run through the new, leaving the old soil dry, which would in a short time be injurious to the plants. Examine the plants at frequent intervals, and if mildew attacks them, apply flowers-of-sulphur. If a house cannot be devoted entirely to these plants, they should be placed altogether at the cooler end of it, or in a cool pit where there exist means to keep out frost.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

GENERAL WORK.—In fine weather, advantage should be taken to ply the Dutch hoe freely among the growing crops, there being no better means to accelerate growth than by so doing, at the same time destroying small weeds. The lifting of late Potatoes should now receive attention during dry weather. Planting sets should be selected, and those that have been spread out to become green removed to shelves in a cool, airy place, exposed to the light. The frames or other contrivances for protecting the winter salads should be got ready, reserving enough glass shelter for the late Lettuces, planting these without delay, for if these were sown the third week in August, as advised, they will be of a nice size for planting. Earlier sowings may be placed where shelter can be afforded them with mats or frame-lights, it being useless to lift Lettuce which have blanched hearts; smaller ones, and those that are growing, being the best. Endive generally is harder than Lettuce whilst unblanched, and the Round Batavian more especially, so that no haste to cover it need take place, the protection being afforded the larger Lettuce; and this will, at a later period, come into use for the Endives. If these latter are left as long as possible, they get quite hardened, and are better able to resist frost. Rain often does as much harm as frost, especially to blanched salads, and should be warded off. As towards the end of September we frequently get sufficient frost to destroy tender things, all protecting materials and shelter should be put in readiness. Vegetable Marrows, French Beans, Tomatos, and full-grown Lettuces may often be protected by a slight covering of canvas or mats. After severe frosts have occurred, nothing can be done, but a slight covering will eke out the supply of choice vegetables during early autumn.

DWARF BEANS.—The plants will be carrying a good crop of small pods, and if they are covered at night, the supply will last for some time longer, care being, of course, taken to remove the covering in fine weather. Dwarf Peas may be similarly protected, and they will stand more frost than French Beans, a piece of canvas will be sufficient. Veitch's Protecting Broccoli and Autumn Giant Cauliflowers are now giving nice heads, which, if cut with plenty of stalk and foliage, or drawn up with the roots and

kept thus in a cool place, will continue in good condition for two or three weeks afterwards.

LATE SPINACH, &C.—This, if it was sown early in the month of August, should be finally thinned, and if the plants are weak, they may be watered with liquid-manure, or dressed in wet weather with a good fertiliser. No delay should occur in sowing a few rows for early spring use, seed being sown in closer rows than earlier sown spinach. It will afford a certain supply when the larger plants are destroyed by frost. The seed-bearing stems of *Asparagus* ought to be cut before the seeds ripen, and not left to produce a numerous progeny.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

With bright weather, Apples and Pears are swelling to a good size, and the colour is better than usual. The crop of the former is better than was in these parts at one time expected. To still further develop the fruits, smaller and deformed ones may be removed, and the trees watered with farmyard drainings when time will admit, and especially if the soil be a hungry one. Fruit for exhibition should be fully exposed to the sun. Overhanging leaves should be snipped off, and all the fresh soft late breaks removed or pinched back. Cordon Pears on walls, and especially those worked on the Quince, should be well supplied with water, and liberally treated with suitable stimulants. Tits will be troublesome, and if the best fruits are not netted, or pieces of muslin or white paper put around them, these birds will make holes in them and render their keeping impossible. Earwigs also are troublesome, and should be trapped in the usual way. Espalier trees are with us making another break, and should be gone over for the last time before pruning, but the trees intended to be lifted or root-pruned should be allowed to make plenty of wood for the present, and the late young breaks should not be stopped.

Intending root-pruners should now mark all trees that are to be lifted, and soil should be forthwith prepared for them. This may consist of good loam in a rough state, with a fair sprinkling of bones, old mortar, or plaster, and charred earth, all thoroughly mixed together. The grubbing out of all useless trees should be undertaken, if these are on walls, and the ground deeply trenched, remembering that no tree should be put where another has stood without a good portion of the staple soil being first replaced by the above kind of compost. Walls that stand in need of repairs, or of wires for training, or where the courses between the bricks need pointing, should be taken in hand at this season. Now is the best time of the year to visit fruit nurseries, for the purpose of choosing varieties of fruits for planting.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

DENDROBIUMS.—A long and complete rest is essential for these plants in a house free from influences which may induce growth which is sure to remain immature. Upon this treatment of *Dendrobium* their successful culture much depends, also the longevity of the plants. *Dendrobium Wardianum*, *D. Ainsworthi*, and some others may be had in bloom by Christmas time, but the flowers will be unsatisfactory in quantity and in size, and the plants that produce them weakened thereby. Nearly all the various species of *Dendrobiums* can be well managed by having them altogether in one house or division when they are growing; but in the resting period it is different, and they must then be separated, as some require more warmth than others. For instance, the species *D. crassinode*, *D. Wardianum*, *D. Falconeri*, *D. Ainsworthi*, and their varieties, *D. Pierardi*, *D. Devonianum*, *D. Dominianum*, *D. Freemani*, *D. heterocarpum*, *D. nobile*, *D. barbatulum*, *D. lituiflorum*, and *D. pulchellum*, with *Thunias* and *Barkerias*, delight in a very cold treatment, taking no harm if in severe weather the night temperature sometimes falls to 40° whilst at rest, with all possible light afforded them, and just enough water to maintain plumpness in the pseudobulbs; on the other hand, *D. Bensoni*, *D. Lowii*, *D. macrophyllum*, *D. aggregatum majus*, *D. anosmum*, *D. Dearei*, *D. Parishii*, *D. primulinum*, *D. formosum giganteum*, *D. Brymerianum*, *D. Phalsenopsis*, and some others from North Australia, would be seriously injured if subjected to this cold treatment, and they should be rested in a warm house where the warmth never goes below 55° in the coldest weather, 60° being a more

suitable night temperature. The species *D. thysiflorum*, *D. densiflorum*, *D. chrysoxum*, *D. fimbriatum*, *D. dioxanthum*, *D. Farmeri*, and *D. Schroderii* I find do well in the Cattleya-house whilst they are resting, as do also *Mormodes*, *Gongoras*, *Catasetums*, *Cycnoches*, *Eulophias*, *Coryanthes*, *Chysis*, and *Cyrtopodiums*, affording them a position well up near the roof. Regarding *Dendrobiums*, I may here remark that it is natural for *D. Wardianum* to commence to push new growths from the base very soon after the pseudobulb is matured, and for *D. crassinode* to start swelling its flower-buds at each node very early. The fact of seeing this may induce some growers to apply more warmth, but that is not needed, and the resting of these plants should be continued, as the young growths and flower-buds will not gain much in length, but will only become thicker and plumper, which shows that the cold treatment is good for them.

DISAS.—Plants of *Disa grandiflora*, if they are not as yet repotted, should be delayed no longer. Sandy peat, such as is used for Cape Heath, is the best soil for them, and in this they seldom fail to flourish. If they can be grown with the *Ericas*, so much the better, otherwise a cold pit or greenhouse, where the temperature does not generally go below 40°, is a good place to winter the plants, taking care to keep them near the glass, to water moderately, and to keep them free from thrips and aphids.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

THE FLOWER BEDS.—At no time did the beds look brighter than during the past fortnight; the colouring of the *Alternanthera* was at its best on the 17th inst., and *Pelargoniums*, *Ageratums*, *Violas* were full and rounded masses of beauty. Much of this is now a thing of the past; as the 5° of frost on the night of the 17th, cut down all tender plants to the ground, and destroyed the flowers of *Pelargoniums* and *Ageratums*. On the Monday we picked all the dead flowers off the otherwise uninjured plants, upon which there are still abundance of apparently sound flower-buds, which, in the absence of frost, may expand and make the beds bright again; *Heliotrope* and *Perilla* had to be removed, and the beds dressed with light manure, dug, and replanted with *Pansies*. The blue and yellow *Violas* which were planted amongst the variegated and tricolor *Pelargoniums* last May, are still full of flower, and when the removal of the *Pelargoniums* becomes necessary, the surface will be but little disturbed, and will be levelled, and made neat, between the *Violas*. Thus arranged, the plants continue to flower more or less freely during the next seven or eight months, the remaining beds being filled with plants of the dark *Harbinger*, and yellow *Cloth of Gold Wallflowers*; *Pansies* *Cliveden Blue*, *Cliveden Purple*, *Blue King*, *Imperial Blue*, *Sanbeck White*, and *Tory*; *Myosotis dissitiflora*, *Arabis*, *Aubrietia deltoidea*, *Saxifraga umbrosa*, *Daffodils*, *Crocus*, *Snowdrops*, *Hyacinths*, and *Tulips*. The bulbs are deeply planted, and remain in the ground from year to year; and, in addition to saving a considerable amount of labour in taking up and replanting the bulbs, as is practised in some places, they flower all the better by being so treated. *Aubrietias* and *Arabis* may be planted almost close together if the stock is large enough. *Daisies* may be set at from 4 to 6 inches apart, according to the size of the plants. Other plants needing more space, from 6 to 12 inches each way, according to habit, the present size of the individual plants, and the amount of growth that they usually make. *Variegated* and *Golden Thyme* may be turned to a good account in the beds, also dwarf *Laurustinus*, *Golden Yews*, *Box*, and such like; and if they can be planted on a groundwork of *Sedum*, *Cerastium*, or *Golden Pyrethrum*, they will show to advantage. *Periwinkles* intermixed with variegated *Ivy* may also be used with good effect. In the case of the carpet-beds, we simply clear away all the tender plants as soon as nipped by frost, and level the mould. If the weather is dry at the time of setting the plants in the beds, water should be afforded to settle the soil about them.

CLEARING AND PLANTING.—When frosts have rendered *Pelargoniums*, &c., entirely unsightly objects, those which it is desired to save for another year should be lifted with a fork, and the tops and roots trimmed a little before they are potted or boxed in sandy loam. The beds may then be manured, if that be necessary, and dug, and again planted for the spring display.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	SEPT. 26	Sale of Dutch Bulbs at Protheroe & Morris' Rooms.
		Sale of Azaleas, Camellias, and other plants from Belgium, Narcissus, and other bulbs at Protheroe & Morris' Rooms.
		Trade Sale of Palms and other plants at the Wiltshire Road Nursery, Brixton, by Protheroe & Morris.
TUESDAY,	SEPT. 27	Dutch Bulbs at Stevens' Rooms.
		Sale of Dutch Bulbs at Protheroe & Morris' Rooms.
		Great Clearance Sale of Palms, Orchids, Ferns, herbaceous plants, Winter Garden Greenhouses, &c., at Pine-apple Nursery, Maida Vale, by Protheroe & Morris (four days).
WEDNESDAY,	SEPT. 28	Sale of Established Orchids at Protheroe & Morris' Rooms.
		Dutch Bulbs at Stevens' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	SEPT. 29	Freehold Nursery and Market Garden, situate at Henfield, Sussex, at the Auction Mart, London, by Protheroe & Morris.
		Liliums, &c., at Stevens' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	SEPT. 30	Plants from Belgium, at Protheroe & Morris' Rooms.
		Liliums, &c., at Stevens' Rooms.
		Orchids, from Messrs. Linden, Brussels, at Protheroe & Morris' Rooms, at 12.30.
SATURDAY,	OCT. 1	Dutch Bulbs, at Protheroe & Morris' Rooms.
		Liliums, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—55°·7.

Horticultural Education. WE constantly hear complaints of the low wages paid to gardeners, of the relatively low esteem in which they are held, of the too abundant supply, of which our advertisement columns testify, and the like.

Of course, there is some truth in all of these complaints. Considering the responsibilities of his position, and the long period of pupillage he must undergo, no doubt the upper-class gardener is (as a rule) underpaid as compared with other craftsmen, and other servants who get as high, or higher wages and a higher social position, often with considerably less right to it.

But if what we have just said be true, it is we fear equally true that there is a large percentage of gardeners who are not worth the name, and who, by their inefficiency tend to keep wages low, and who bring a bad name on the fraternity.

As in most other cases, the gardener is pretty much what he makes himself. If he is a man of high character and attainments, we do not hear much complaint about inadequate wages or low esteem; but, on the other hand, we do con-

stantly hear in such cases of the good feeling that exists between employer and employed. Assuming that those cases are the exceptions, and that the rank and file are unduly depressed by adverse circumstances, we must point out that the remedy for these evils lies rather with individual gardeners, and combinations of gardeners, than in horticultural societies, or in any legislation, even were such possible.

One very potent cause of the depression is to be found in the circumstance that men are content to remain garden-labourers, rather than become gardeners. Of course, there is not much chance of promotion under such circumstances; the prizes and "pieces of good luck," as they are called, do not fall to such men, but to those who are striving to better their position by improving themselves.

We may not at present be able to rival the magnificent scheme of horticultural education sketched out lately before the Scientific Committee by Professor EMORY SMITH, and which is in process of fulfilment by the Leland Stanford Junior University of California. Indeed, we have more faith in plans that grow and are evolved by stress of circumstance than in those which are perfect from the first—on paper.

From this point of view, we publish the sub-joined circular with great satisfaction, as it seems to offer help to those who are willing to help themselves, and to be a means of raising the position of the gardener and the forester:—

"Royal Botanic Garden, Edinburgh,
September 15, 1892.

SIR,—I have the honour to send annexed prospectus (with form of application) of a course of instruction for practical foresters and gardeners about to be instituted in this establishment, and to ask for your co-operation in making known the course to suitable men. I shall be glad to send additional application forms should you require them.

I would specially invite your attention to that feature of the scheme by which it is proposed to find employment in and about Edinburgh for young men from a distance desirous of taking advantage of the instruction offered, and in this way to enable them to support themselves during the period of study. The wage obtainable would be 17s. per week in this establishment, and about 2s. 6d. per day in nurseries.

The advantages of the opportunities of study afforded by the scheme are so evident, that they will probably be sufficient to induce good men to accept employment in Edinburgh at the rates mentioned, even although some diminution in their earnings is thereby involved. There is, however, the possibility that a deserving man might be called upon to make a pecuniary sacrifice in taking such employment which circumstances would not allow him to contemplate, and he might thus be precluded from attending the course.

To meet such cases, and to supplement the wage obtainable, it has been suggested that the County Councils and other bodies having control of the administration of funds which could be allocated to such a purpose might, in different localities, see their way to making small grants in the form of bursaries to aid men desirous of working through the curriculum, and that many individual proprietors would be glad to give some additional pecuniary help to young men from their neighbourhood who wished to reap the benefit of the education offered.

I therefore take the opportunity, whilst bringing under your notice the course of instruction proposed, to ask for your consideration of the suggestions I have mentioned, and to solicit your aid to give practical effect to them.

I have the honour to be, Sir, your obedient
Servant, ISAAC BAYLEY BALFOUR."

"Course of Instruction for Practical Foresters and Gardeners at the Royal Botanic Garden, Edinburgh.—By arrangement between the Commissioners of Her Majesty's Works and the Board of Agriculture, a course of study in the sciences underlying the practice, and in the principles of forestry and horticulture will be instituted in the month of October of this year, at the Royal Botanic Garden, Edinburgh, for practical foresters and gardeners.

The curriculum will extend over two-and-a-half years, and will include the following subjects:—Chemistry, physics, meteorology, geology, surveying and mensuration, entomology, botany, forestry, and horticulture, and these will be taught practically as far as is possible.

The curriculum will be free of charge to those who are admitted to it.

The times of the classes will be arranged so as not to interfere with the usual hours of labour.

No one will be admitted who has not had at least three years of practical experience in forestry or gardening.

Applicants for admission must submit a recommendation and certificate of character from their employer.*

A certain number of men will be employed as members of the working-staff of the Royal Botanic Garden, Edinburgh, during the period of the curriculum. Such men will serve under all the regulations in force in the garden, and will receive the current wages of their grade. Through the co-operation of the nurserymen in Edinburgh, arrangements will be made for the employment of others in the nurseries about Edinburgh during the period of the curriculum.

Those who are admitted to the curriculum will be examined from time to time upon the subjects of study, and anyone who does not show satisfactory progress may be debarred from continuing the curriculum.

Practical foresters and gardeners desirous of entering on the curriculum are requested to fill [a form], and to return it not later than October 5, along with the recommendation and certificate of character mentioned above, addressed to the Keeper, Royal Botanic Garden, Edinburgh.

Should it appear to be necessary or advisable, some method of selection amongst the applicants may be adopted.

Applicants will be duly informed whether or no they have been admitted to the curriculum.

ISAAC BAYLEY BALFOUR, Keeper of the
Royal Botanic Garden, Edinburgh.
September 15, 1892.

* If an applicant happens to be out of a situation, a recommendation and certificate of character from his last employer should be submitted."

We do not see any provision made for instruction in drawing, nor in fruit culture under glass; but this latter, no doubt, could be arranged in concert with the head gardeners of some of the large private establishments in Scotland or England. Nor do we find any allusion to the granting of a certificate or a diploma to those of good character who have successfully passed the curriculum; but this, again, is a detail which can readily be arranged hereafter. That the classes will be held in the Botanic Garden affords a guarantee that not only the applications of vegetable physiology will be taught, but that some attention will also be given to secure a general knowledge of the conformation of flowers and of their names. We are disposed to think that the gardeners of the present generation are not nearly so well informed in this latter particular as their predecessors. It is rarely we meet a young gardener who knows the names of any but the commonest plants.



VIEW IN THE FERNERY OF THE "HORTICULTURE INTERNATIONALE."

For six years past the French government has been making experiments, under the direction of Dr. AIMÉ GIRARD, in order to test the value of the Bouillie Bordelaise as a preventive of the Potato disease (*Phytophthora infestans*), and in the early part of last year that distinguished chemist was able to report that the results year after year had been so satisfactory, that the mixture might with confidence be recommended as a preventive of the disease. Since then a number of experiments have been made, not only in other countries of continental Europe, but also in the United Kingdom, with varied results, and this year Messrs. JAMES CARTER & Co., of 237 and 238, High Holborn, London, W.C., decided to devote an acre of land on one of their seed farms at Bromley, in Kent, and further, that the experiment should be conducted on identically the same lines as those on the French government farm at Joinville-le-Pont. The direction was put into the hands of Mr. HENRY F. MOORE, the well-known agricultural writer, who consulted M. GIRARD, in order that the chemicals used might be of the same strength and quality as those used in France. We ourselves had the opportunity of seeing the application of the copper solution, as mentioned at p. 158 of the *Gard. Chron.* for August 6, and we also were enabled to see the results, a summary of which we now give.

The experiment was made on a field of a little less than an acre of Potatoes, which were planted in ten long double rows on April 8, the drills being 36 inches apart, a distance which Messrs. CARTER believe will be found more remunerative than if planted more thickly, as it permits the rays of the sun to penetrate the bed, an important factor in the development of this crop, and which, moreover, does not afford such facilities for the dispersion of the fungus spores as exist when the plants are crowded. The varieties planted were as follows:—

- Row No. 1.—Myatt's Ashleaf.
- " " 2.—Snowdrop.
- " " 3.—Beauty of Hebron.
- " " 4.—White Elephant.
- " " 5.—Carter's King of the Russets.
- " " 6.—Carter's Cosmopolitan.
- " " 7.—Carter's Improved Magnum Bonum.
- " " 8.—Bruce.
- " " 9.—Carter's Surprise.
- " " 10.—Imperator.

The whole piece was divided into four equal parts, of which the first and third were dressed with the Bouillie Bordelaise, and the second and fourth left undressed. The strength of the mixture was as follows:—

- 22 lb. of sulphate of copper.
- 22 lb. of unslaked lime, and
- 100 gallons of water;

this being the quantity necessary for an acre of Potatoes. The sulphate of copper is of 98 per cent. purity, and is the same as that used by M. AIMÉ GIRARD in his experiments. For the purposes of the experiment the first and third quarter were dressed with the Bouillie Bordelaise on July 11 and August 2, and the second and fourth were left undressed. The mixture was applied by the Antipest, the new knapsack distributor, invented by Mr. G. F. STRAWSON, which did the work admirably. On the second occasion, a German machine was also tried, this also doing good work.

Early in this month (September) it was clear that disease had appeared in the undressed portions, and on September 6 one root was dug from the centre of one row of each variety in the first three sections, with the result that in the dressed sections only two diseased tubers

were found in the twenty roots dug, and those were in the one root of Myatt's Ashleaf, a sort peculiarly liable to the disease. On the other hand, of the ten roots dug in the section not dressed, in four cases all the produce was found to be diseased, in two cases slightly diseased, in one case very slightly diseased, and in only three cases (new and vigorous sorts, it should be noticed) was the produce found to be all sound. In other words, 90 per cent. in one of the dressed sections, and 100 per cent. in the other dressed section, was found to be all sound and good produce, and in the case of the undressed section only 30 per cent. were sound.

On Thursday and Friday last the crops were dug, when the following were found to be the condition and weights of the different varieties of Potatoes on the four-quarter plots.

We cannot find space for the figures in each case, which were supplied us by Messrs. CARTER, but we may cite the following table, which gives the totals of the two duplicate experiments:—

	Dressed Plots.			Undressed Plots.			In favour of Dressed Plots.		
	cwt.	qr.	lb.	cwt.	qr.	lb.	cwt.	qr.	lb.
Weight of sound tubers	58	0	0	39	2	10	18	1	18
Weight of unsound tubers...	0	0	11	6	3	11	6	3	0
Total yield	58	0	11	46	2	4	11	2	7

It will thus be seen that, in whatever aspect the experiment is looked at, it is in favour of the dressing by the Bouillie Bordelaise. So far as sound tubers are concerned, the yield is over 2 tons per acre more than in the undressed portion (the two plots being less than half an acre), while the quality of the tubers is better.

MESSRS. CARTER'S experiments are, as we expected they would be, conclusive as to the value of the copper solution when properly made and applied, and, in so far, they are in accord with the general body, though not with the whole of the evidence obtained in this and other countries.

The cost of the application, as carried out by Messrs. CARTER, was given in a preceding number, and it is relatively so low that growers may rest assured that from their point of view the game is worth the candle. Having watched and taken an active part in the two principal methods adopted of combating the disease, we can confidently assert that both the JENSEN method of high moulding and the copper treatment are efficacious, but the latter has the advantage of requiring a smaller expenditure of labour, and is therefore, the plan to be recommended by preference.

We may add that Messrs. CARTER have favoured us with an excellent photograph, which shows in unmistakable fashion the condition of a portion of the dressed and of the undressed plots respectively. We do not reproduce it, because it is almost identical with the illustration we have before given.

Lastly, as objections are sure to be raised by some interested or unduly timorous persons, we may add that no ill effect to the consumer of the sound tubers is likely to accrue from the use of the solution on the haulm some time before lifting.

FERNERY AT L'HORTICULTURE INTERNATIONALE.—Our Supplementary Illustration gives a view of the Fern rockery in the establishment of l'Horticulture Internationale, Parc Leopold, Brussels, in which the Messrs. LINDEN so cleverly combine beauty and utility. As will be seen by reference to our illustration, the permanently-planted rockery is still further beautified by arranging Orchids in flower

among the elegant frondage of the Ferns and the variously-tinted leaves of other plants. Similar groups may be found in other parts of the establishment, and everywhere order, cleanliness, and artistic arrangement is to be found in the extensive premises of this, the most important of continental nurseries, in which the culture of plants under glass is the chief object in view.

THE CERTIFICATES AT THE ROYAL HORTICULTURAL SOCIETY.—Now that the subject of these Certificates is under discussion, we may point out the glaring anomaly by which a plant like *Aristolochia gigas* receives the same description of certificate as a *Dahlia* or a *Chrysanthemum*. There are hundreds of the latter, and their cultivation is now well understood, but the *Aristolochia* is a thing apart—a truly magnificent thing—of recent introduction, while the skill in growing it in a small pot to a flowering state is a much greater cultural feat than any cultivation bestowed now-a-days on *Roses*, *Dahlias*, or any other popular plant. If this sort of thing were done in some obscure cottage-garden show in the provinces, it would be excusable and attributed to ignorance; but at the Royal Horticultural Society, where all the talents are supposed to be exercised, and where exhibits are supposed to be judged on their merits, rather than their money value, it is nothing short of derogatory to give a "First-class Certificate" to such a plant. If it had been a First-class Botanical, or a First-class Cultural Certificate, there would have been less objection to be raised, but to place such a plant on a level with the every-day products of the florist is monstrous, and will not tend to encourage the introducer or raiser of new things. Surely if the original *Dahlia* or *Chrysanthemum* were now exhibited, it would be worthy, if not of a higher, at least, of a very different form of award from that now given to its descendants. We do not undervalue the commercial value of a certificate, but we do think that is the last, not the first, thing to be thought of at the Royal Horticultural Society, where absolute merit, and relative adaptability to particular purposes, should be the first thing to be considered. The committees have to maintain the reputation and the honour of Horticulture as represented by the Society. Commercial men may be trusted to settle the business value of a plant in their own way.

MISS JAMESON FUND.—In addition to the sums mentioned in the previous number, we have received the following:—

Sir Trevor Lawrence, Bart., President, Royal Horticultural Society	...	...	...	£3	3	0
W. T.	...	...	...	0	10	6

A GRAND INTERNATIONAL POTATO EXHIBITION, for the encouragement of the best means of Potato culture, and the introduction and diffusion of improved varieties, will be held by the executive of the International Horticultural Exhibition in connection with the show of hardy fruit, &c., at Earl's Court, London, S.W., on Wednesday, Thursday, and Friday, October, 5, 6, and 7.

HORTICULTURAL MEETING AT GHENT, ON SEPTEMBER 11.—Certificates of Merit, *par acclamation*, were awarded for a hybrid *Cypripedium*, *C. Hyeannum* × *C. hirsutissimum*, notable for the large dorsal sepal—green bordered with white—raised by M. CH. VUYLSTEKE, of Loochristy. There was another hybrid, quite as fine, but less distinct than existing varieties, *C. Harrisianum* × *Hookeri*, flower very large, lip or dorsal sepal very fine, the general colour is claret; this variety should be very useful as a cut flower; it also is sent out by M. CH. VUYLSTEKE. Both the above varieties were shown for the first time. M. L. DESMET-DUVIVIER showed an *Anthurium Scherzerianum* with a double spathe; several flowers with the same peculiarity were borne on the same plant, as well as on another example taken from the former by division, and shown at the same time. It was noticeable that all the flowers grow from the centre of the plant, the leaves succeed them, which is

not the case with the ordinary *Scherzerianum*. A Certificate was awarded for *Miltonia Blunii* var. *Lubbersiana*, from M. J. HYE-LEYSEN; a rare plant with large flowers with a white lip, sepals and petals much streaked and spotted with mauve. The same exhibitor was awarded a Certificate for *Oncidium incurvum* album, the specimen shown bore a large truss composed of many small snow-white blooms; the ordinary variety has mauve flowers closely clustered, which are a pretty contrast to the white-flowered plant. Certificates were also awarded for *Epidendrum sceptrum*—flowering rarely, from M. A. VAN IMSCHOOT, and *Cattleya Harrisoni* violacea from the same orchidist. There were some tuberous *Begonias* with sulphur-yellow flowers of unusual size, rounded and nearly 6 inches across, shown by MM. BLANQUAERT and VERMEIRE; tuberous *Begonias* with double flowers from Professor FRED. BURVENICH, the blossoms equally fine, erect in habit and garnet-red in colour. A plant for which we prophesy a successful future is a hybrid dwarf *Canna*, *Madame Crozy* × *Kaiser Wilhelm*, the specimens of which, shown in pots, were in good leafage with two trusses of open blooms, and several stems bearing buds, which stems are only about 15½ inches high. The flower is yellow, streaked with black. The exhibitor was M. T. SZEWCZIK. A hybrid of *Vriesia guttata* × *V. fenestralis*, named *V. Moensi*, was remarkable for the decided difference in texture of the inferior and superior leaves. Those in the centre were pale yellow, striped; the inferior ones were marked out in more or less regular squares, quite justifying the title "*fenestralis*" given to the parent *Vriesia*. This good hybrid was shown by M. ROBERT GRENIER. Mlle. EUGENIE GUEQUIER obtained an award for a collection of cut *Gladioli*, hybrids and seedlings of Lemoine. Mme. AUG. CORNELIS showed some flowers of *Magnolia præcox* Louis van Houtte, an excellent variety, flowering twice, in April and May, and in August and September. The blossoms are large, reddish-purple, and very fine. Certificates were awarded for *Epidendrum prismatocarpum*, with five stems, each bearing about thirty blooms, shown by M. ALF. VAN IMSCHOOT; for *Cypripedium callosum*, from M. J. HYE-LEYSEN, an excellent specimen, with two fine stems, bearing each twenty flowers; *C. Stonei*, from the same orchidist, a fine plant with six large flowers; *Gymnogramma Laucheana* from M. BERN. SPAE, a plant more than 3 feet across, of excellent habit; the fronds being slightly curved are very graceful. Honourable Mention was awarded for *Anthurium Andreanum grandiflorum* from the Société Anonyme Louis van Houtte père, with a flower of unusual size and colour, and for a fine lot of seedling *Gloxinias* from M. B. SPAE.

VIOLAS IN THE PHENIX PARK, DUBLIN.—In writing of these plants, Mr. DICK states that they have been a great feature this summer, over 12,000 having been put out, and from first to last have made a great show. The plants were supplied by Messrs. DOBBIE & Co., of Rothesay.

DYMOND AND PRINCE OF WALES PEACHES.—The first-named variety has been of great excellence this season in parts of the country where the Peach succeeds on the open wall. Our correspondent, Mr. MARKHAM, of Mereworth, speaks very highly of it, and from his young trees outside he has gathered some fine examples. It is a large showy fruit, with a rather deep suture extending from the apex and diminishing towards the base. The flesh is white, melting, and richly flavoured. Prince of Wales has been equally fine and good. It is usually a large fruit, and is thickly covered with down, green on the shaded side, and deep red in colour on the sunny side; it is of excellent flavour. It is now in season.

THE HARVEST IN BELGIUM.—From official sources is gathered a brief review of the state of the crops in Belgium. Cereals have done well; the yield of Rye has been unusual, and may be valued at at least 3000 to 3500 kilos. per hectare (1 kilo. =

2·2046 lb.; 1 hectare = 2·471143 acres). The corn is excellent in quality. Oats, though short in the straw, yielded better than was expected. The Potato crop was very great, and there was almost entire absence of disease, except among certain of the early varieties caught by the July frosts, which yielded less than in former years. With regard to Beetroot, the roots were small, and consequently light in weight, but were rich in sugar. The Beetroot yield was estimated at 30,000 kilos. per hectare as against 35,000 kilos. last year. Speaking generally, the harvest may this year be called excellent as regards food, but bad as to forage crops, owing to the drought; and also to caterpillars, which have been abundant everywhere.

FRUIT DRYING.—We are informed that the Fruit Drying Apparatus of Messrs. MAYFARTH, at Chiswick, will be shown in operation on October 5 and following days.

INTERNATIONAL HORTICULTURAL EXHIBITION.—We are informed that, in recognition of Mr. MILNER's great services to the International Horticultural Exhibition at Earl's Court, it has been decided to invite him to a complimentary dinner, to take place in the French Restaurant (Western Gardens), on Thursday, the 29th inst., at 6.30 P.M. (for 7 o'clock punctual), Mr. H. P. DODSON in the chair. Mr. RICHARD DEAN and Mr. L. DUCHÈNE are the secretaries. [Certainly such a compliment as this has been amply won by Mr. MILNER's urbanity and tact in managing a difficult enterprise. Ed.]

NEW PUBLICATIONS.—*Contributions to Horticultural Literature*, being a selection of articles written for gardening periodicals, and papers read before various societies from 1843 to 1892, by WILLIAM PAUL, F.L.S. (W. Paul & Son, Waltham Cross), 8vo, 565 pp. We can now only acknowledge the receipt of this work, which is far too important to be dealt with in an impromptu notice. Later on we shall hope to call the attention of our readers to it more at length. — *Flora von Deutschland*, Dr. HALLIER (Williams & Norgate). — *The Gentlewoman's Book of Gardening*, by EDITH CHAMBERLAIN and FANNY DOUGLAS (Henry & Co.).

PLANT PORTRAITS.

AUBRIETIA GRANDIFLORA, *Revue de l'Horticulture Belge*, September.

CYPRIPEDIUM LATHAMIANUM × = *SPICERIANUM* by VILLOSUM, *Orchidophile*, July, 1892.

CYTISUS SCOPARIUS VAR. *ANDREANUS*, *Garden*, August 27.

GESNERA CARDINALIS, *Garden*, September 10.

GLOXINIA × *TAPEINOTES*. — A cross between a *Gloxinia* and *Tapeinotes Carolinæ*. The appearance is that of a *Gloxinia*. *Wiener Illustrierte Garten Zeitung*, August.

LILIUM LEICHTLINII, *Garden*, August 27.

MELON, PRESIDENT GREIG, *Bulletin d'Arboriculture &c.*, August.

ROSA, REVE D'OR, *Revue de l'Horticulture Belge*, September.

SALICORNIA MUCRONATA, *Meehan's Monthly*, September, 1892.

TECOMA JASMINOIDES, *Moniteur d'Horticulture*, September.

NOTICES OF BOOKS.

FRUIT CULTURE.*

UNDER the above title, we have a manual on the culture of hardy fruits, by W. C. Strong, a gentleman who, as he says in the preface, has been engaged in the cultivation and sale of fruit and ornamental

trees and shrubs for the past thirty years. The work is intended for the professed horticulturist and orchardist, and it is not the aim of this small volume to take the place of the larger works on the subject. The writer has borne this in mind throughout, and we therefore find the chapters on the various matters treated on in clear and concise language, and although it is a work intended for the North American cultivator, much of it is pertinent to fruit culture in these islands. America being still a new country, our author begins with the laying-out and formation of a rural home. In regard to choice of locality for an orchard, he prefers the hill to the valley, an elevated site being safer for all kinds of fruit that suffer from frost, and to protect trees at great heights from the dangers of exposure, of rapid evaporation of moisture from the foliage and loss of fruit from wind, he points out the great utility of wind-breaks of hardy trees, or failing these of high lattice to so sift the winds that the trees will flourish. We learn that the Bartlett (Williams' Bon Chrétien) and Anjou Pears are getting so largely planted, that there is danger of a glut, although at present their culture is quite profitable; and that the demand for winter Pears is "surprisingly limited." In regard to the Peach crop, one year of success will cover two or three of failure. Excellent directions are given as to choosing fruit trees, and great stress is laid, and rightly so, on getting them with clean, straight, smooth stems, and with plenty of roots about the size of a pipe-stem, the finer rootlets being of much less consequence; and, moreover, these generally perish from the hardships of transplantation. In regard to manuring orchards, the author quotes the opinion of Professor Maynard, of Massachusetts Agricultural College, who has used the following mixture for the past three years:—1000 lb. pure bone-meal, and 300 lb. of high-grade muriate of potash. This amount he considers sufficient for 1 acre of land.

Hard cutting-back is advised for all trees transplanted from a nursery, but not the barbarous chopping off of the head, as is sometimes seen. It is best to cut hard-back to obtain a vigorous start and a symmetrical head. We think that this is advisable only when there has been a great loss of roots, and the pruning is better done the next autumn or winter after planting. Irrigation—not needed here—comes in for notice.

Referring to the quality of the fruits grown in the United States, the author remarks on the want of flavour, although there is nothing to be desired in point of size and appearance of the Apples and Pears from California and the lower Western States as compared with those grown in Maine, Canada, and, we may add, Nova Scotia, which command three times the price.

The great plague of the American cultivator of fruits is the swarms of insects which attack every part of the tree, as well as the fruit, and naturally much information is afforded as to the best means for their extermination. The final chapters are taken up by descriptions and figures illustrating the different forms of budding and grafting, which do not differ from those practiced here.

THE GENTLEWOMAN'S BOOK OF GARDENING. By Ethel Chamberlain and Fanny Douglas. (Henry & Co.)

It is a little puzzling to know from what standpoint to criticise this book, for it does not claim to be a purely scientific and technical work, nor is it one to be read for amusement only. It consists, in fact, of articles of varying merit dealing with the romantic, poetical, decorative, and professional interests of the gentlewoman's garden. A good deal is said in praise of the old art of distilling, and still more about the delights of horticulture as a vocation for ladies—of robust health. The writer of the eighteenth chapter treats of gardening as a profession, and of the many gentlewomen who have adopted it, after a due course of education. We read that: "To meet the demand for training that is now arising, a Ladies' Branch of

* *Fruit Culture, and the Laying-out and Management of a Country Home.* New York: The Rural Publishing Co., 1892.

the Horticultural College at Swanley, Kent, was opened in June, 1891. For the sum of £70 to £80 per annum the female students are boarded in a bright and comfortable home, close to the college, in the grounds and lecture-rooms of which they pursue their studies. The course includes botany, chemistry, zoology, physics, building construction, and book-keeping. To some minds much of this appears unnecessary; but it should be remembered that in this artificial age the gardener is always trying to forestall Nature, and only Science can help him (or her) to achieve this."

This last sentence contains "in a nutshell," the leading principles of modern horticulture. To be successful, a gardener now-a-days must not be content to do just as his fathers and grandfathers did before him; competition is keener than of old, and requirements are greater. To meet these needs, mere mother-wit and practice are not sufficient; they must be stimulated and increased by instruction and education. Hence, we read in the third chapter that, "Sometimes it is urged against gardening that it is a pursuit for stupid people only, affording little occupation to the mind, and still less occasion for

HOME CORRESPONDENCE.

CERTIFICATES AT CHISWICK.—I must in justice ask for a small space to reply to your correspondent at p. 341, as I consider he did not fairly handle the subject. I presume much of the grievance arose because the Pea had been granted three marks at Chiswick, an award which is supposed to be equivalent to a certificate. When I staged the dish of Success Pea on the 6th inst., I enquired if the Pea had been grown at Chiswick. Of course, being a member of the Fruit Committee, I ought to have known, had I been to Chiswick, but I have not been able to go of late. I also asked if it had received any award or First-class Certificate, and was told that three marks had been allotted to it. I said then, "It has not received a First-class Certificate, but it is, in my opinion, deserving one;" so I staged it; and as three marks had been awarded at Chiswick, the committee could do no less than give a First-class, providing the sample was worthy of it. I did not show it as of my own raising, but as Veitch's Success Pea. Last year the same Pea was shown, not by me, when I proposed an award, and was then told that Peas must be tried at Chiswick before an award could be given. I admit I did not send it to Chiswick, but it is the

many varieties new to this country five were brought up from Chiswick, and received First-class Certificates at one meeting. I presume the Royal Horticultural Society did not raise these Figs, but got them from other parts, such as Spain, France, or other foreign countries. Therefore, when the certificates were granted, they went to the wrong people. They should have been sent to the raisers, and I expect they would, in that case, have troubled less about them if no honour was to be paid to good culture, as very likely in their native habitat they were inferior to those staged by Mr. Barron. I admit they had been tried at Chiswick, but if your correspondent maintains that the award should be given to the raiser, the Royal Horticultural Society has no more right to these certificates than I have for the Pea, as we are both in the same category. Another question crops up, if nurserymen or seedsmen are to wait for everything to be tried at Chiswick before it is sent out, they will lose by so doing. I consider the trade act very fairly in this matter, as they do not object to the grower receiving the highest award, providing he does it honourably, does not palm it off as his own raising, and the trade do not lose by so doing, as a good thing, fruit, flowers, or vegetables, will hold its own when good. Many old things crop up that have never been certificated, but



FIG. 62.—POTATOS TREATED AND NOT TREATED WITH THE SULPHATE OF COPPER. (SEE P. 373.)

exercising the intellect. It is perfectly true that many gardeners of the old-fashioned type, without any claim to book-learning, were successful in growing well-flavoured vegetables and a profusion of hardy fruits and flowers. They were, it is certain, possessed of a natural shrewdness which enabled them to draw inferences from the experience of years. In most cases, also, these men had at their command unlimited supplies of stable or farmyard manure, and so they were able to produce good results; just as an old-fashioned country-house cook, innocent of French dishes, could prepare most appetising bills of fare with the fresh eggs, cream, fat poultry, and home-cured hams, all ready to her hand."

In addition to these general remarks, practical instructions are given which are mostly sound, though somewhat amateurish; the names of plants are begun with small or capital letters indiscriminately used; and the mis-spellings are innumerable. The romantic and poetical chapters abound in quotations, which must have involved no small work to select and string together. The general style (or rather styles), and tone, are chatty and pleasant, but a trifle diffuse. Careful revision by an expert will render the next edition more acceptable than the present. The book is one of a series (*The Victoria Library for Gentlewomen*), commendable for neat dainty binding, and excellent print and paper.

first time I have heard an award questioned in this way; the certificate was granted to the Pea, not to me as the grower, but to the variety. Why your correspondent should object to the Pea getting the award because it was shown by me, I am not able to judge. Others could have done so, and have done so, in similar cases; for instance, this year one of the committee staged a very good Fig, sent out by Messrs. Veitch, but the person exhibiting it got the First-class Certificate. Last May twelvemonth the well-known Model Broccoli received a similar award, and the *Gardeners' Chronicle* was not appealed to; being a member-exhibitor, I was debarred from hearing the objection raised to this certificate, but I believe it was carried by something like three to one. At any rate I fail to see, when a certificate, or award of any kind, is carried by a majority, why one of its members should rush into print, and depreciate such award. The award of First-class Certificates to gardeners, so far as the fruit committee is concerned, are few and far between. I have sent fruits and vegetables for some time, and though I do not complain, as the committee should only recognise improvements or superior culture, I do not think gardeners will be inclined to look with favour on the committees of the Royal Horticultural Society if such treatment is meted out to them, and they find that awards go to the trade chiefly. I will give another instance: The society has got a fine collection of Figs together at Chiswick, and Mr. Barron has grown some of the most difficult kinds to the best or highest state of cultivation, but I would point out, that of the

that have been in the front for excellence, and likely to remain so. I do not think the question of expense, loss of time, or inconvenience are taken into account by the larger portion of the committees attending Chiswick; they are willing enough to give their services, but I do think that persons interested in any particular exhibit or things growing there, should not be on a sub-committee. Exhibitors have to retire from the table at a full committee meeting at Westminster, and if the Chiswick sub-committee is to be empowered to give all awards for things growing at Chiswick, why should anyone interested be allowed to vote? The inference that exhibitors bring a selected sample does not strengthen the argument, as this is always done when fruit or flowers of any kind are exhibited. The committees of the Royal Horticultural Society do not visit gardens to see inferior things. What they pass judgment on are the exhibits before them—they do not give a man a Medal for the things he has left at home. G. Wythes.

THE NATIONAL ROSE SOCIETY.—My attention has been called to an article in the *Gardeners' Chronicle* of September 10, signed "Wild Rose," on the subject of the entries at the National Rose Society show of 1892. The writer has evidently had access to the books of the Crystal Palace, and is also in touch with the Treasurer of our Society, as I believe the latter is the only person who has reliable knowledge of the numbers of members who have joined the Society this year. I may at once say, I think these numbers seem to me most

satisfactory, and I would say also, quite justify any remarks I made last December as to the probability of our obtaining a large accession of members by a liberal policy—no doubt, we ought to have done better, if everyone had helped, and we may do better when it is more fully known how fairly our competitions are arranged, but time must be given for this purpose. However, I do not feel that I have not done my personal duty to the Society in respect to new members, and I believe this statement can be verified that those who worked hardest for the rights of the smaller competitors, have also put their shoulders to the wheel of the Society's financial coach, and with satisfactory results. It is a somewhat ungracious task to have to demolish "Wild Rose's" figures, even if they be apparently obtained from official sources, but the published table is full of inaccuracies, and even the additions of the figures given are wrong. Anyone can verify this at once by looking at p. 300 of the *Gardeners' Chronicle*, and by adding up the columns. The figures of the exhibits in 1892 as quoted by "Wild Rose," but which are really inaccurate, should be 144 and not 134, and in 1891, the number of entries given by him should be 205 and not 295, but these are really trifling errors as compared with the real position and facts which have been given to me from an absolutely reliable source, and which I have taken the trouble to check and verify by the reports and figures given in the *Journal of Horticulture* of the National Rose Society's shows, 1891 and 1892, another error discovered thereby being that the exhibits of 1891 in the classes specified were 141, and not 180 as quoted by "Wild Rose." The question, of course, is a larger one than the mere fact of the figures given being inaccurate; but when I further mention that in the column of exhibits in each class given for 1891, only three are correct out of sixteen quoted, the untrustworthiness of the whole table is made manifest. The real unfairness of the table given is in the fact that by the method "Wild Rose" adopts for the schedule 1891, an exhibitor of that year may be counted not only twice, but several times over, as the same person could have entered, and in many cases did enter, in several of the classes, and thereby could be counted as a new exhibitor on each occasion; the "extra classes" also so freely referred to in the table of 1891, having been practically eliminated by the system now adopted by the Society, their large numbers of exhibitors which "Wild Rose" quotes, should not be taken into account. I may mention here, *en passant*, that in these classes, extra class 19 is given as exhibiting fourteen boxes, whereas they really exhibited nine; and extra class 22 is quoted as exhibiting twenty-six boxes, they in reality having staged seventeen; and a wonderful number that was, too! I give these as specimens of inaccuracy, having already mentioned that out of sixteen statements thirteen are wrong. But eliminate the extra classes in 1891 as quoted by "Wild Rose," and correctly add up his column of the exhibitors, who were really exhibitors, of 1892, and what do we find? Quoted exhibits, 1892, correctly added up, 144; exhibits, 1891, as quoted by "Wild Rose," with extra classes eliminated 180 less 54 = 126; balance in favour 1892, 18 exhibits. But the correct number of exhibits in 1891 was 141, and not 180, so that if read in that light the figures come out as 144 against 141 less 54, or 57 in favour of 1892. "Wild Rose" judiciously says nothing of the fact that the new schedule was probably the cause of many exhibitors showing under their proper or higher divisions, nor that the number of Roses staged in 1892, some 7000 in all, exceeded by over 1000 the numbers staged in 1891. Nor does he mention that certain classes in 1891 were for special prizes not included or given in the schedule of 1892, and which therefore, cannot by any fair critic be accounted as properly going in the balance of one year's exhibits against those of another—in this connection I specially mention extra class 19 of which I happen to have personal knowledge. Charles J. Grahame, Croydon.

NEMESIA STRUMOSA (see Sept. 3, p. 277).—Mr. Mortimer, of the Swiss Nursery, Farnham, has probably been the first person in the country to grow this lovely annual in quantity, indeed, almost in any quantity, and he has conclusively proved that out on his open common land situate at a somewhat high elevation on the Surrey hills, that it is not only beautiful, but easily cultivated; more than that, Mr. Mortimer has shown that it can be freely seeded. I saw a large bulk of the seeds, whitish, fluffy, and light, the other day, and it is one of those seeds of which I know

nothing to match. The plants grow outdoors just as freely as do any hardy annual. They somewhat resemble in habit the well-known *Erysimum Perofskianum*, but have flowers that are probably as large and not unlike in form those of *Celsia cretica*. As to colours, it is probable that from a big batch such as I saw at Farnham, fully twenty might be found. Some of them are superb. They range from white to the richest of maroon-crimsons, gold and orange, reds, roses, carmines, scarlets, violets, all in wondrous beauty. The *Nemesia* has a long season too, for it was still blooming well on the 15th inst., and yet the plants were blooming from the end of June. Seed is sown in March in warmth, and the seedlings are then treated as *Phlox Drummondii* may be. Should it be possible to fix some of the richest colours, this annual will make a grand bedding plant; as it is for patches in the flower garden, it is simply beautiful beyond description. There can be no doubt but that the *Nemesia* will become one of the most popular in cultivation, whilst its future cannot be foreseen in relation to ultimate development, as it has all the capacity for great improvement. A. D.

DENDROBIUM PHALÆNOPSIS SCHRODERIANUM.—What an invaluable *Dendrobium* is this! Looking at Mr. Farnham's grand group at the Royal Horticultural Society's meeting on the 6th inst., and hearing the praise accorded them by Orchidists, makes me think this is the best *Dendrobium* ever introduced. Its lasting properties when cut are great, and the numerous different shades of colour exhibited by the plants make it a very attractive species. I find that it requires a high temperature to grow it well. John Cavill.

POISONING OF STOCK BY YEW.—There have been a good many letters in the papers lately on the subject of cattle being poisoned by eating Yew. I may as well say again (as I have before done in your pages), what I know on the subject. In the first place then, there is no difference whatever between the male and female tree in this respect. All kinds of stock eat both habitually with perfect impunity. There are numbers of pastures in many parts of England in which there are many Yew trees in the fields and in the hedges, and these are constantly eaten by all kinds of stock, and no one ever heard of their being the worse for it. The whole secret of their immunity from injury lies in their eating it "habitually;" and, therefore, I often plant Yew trees in the hedges of pasture-fields, in order to secure the stock from any danger of this kind; for there are occasionally cases where animals that have not usually had access to Yew trees, and have broken into a plantation, and eaten (probably too freely) of Yew branches, have died of it. There is no doubt also that half-dead clippings of Yew are poisonous. I am always very careful that these should never be left within reach of any kind of stock. I come back therefore to what I have said before. The best security against animals being poisoned by Yew, is to plant Yew trees in pasture-fields and in the hedges; and that if this were done universally, and care was taken never to leave clippings of Yew about, we should never hear of animals being poisoned by Yew. C. W. Strickland.

STEAM versus HOT-WATER.—In the editorial article in the *Gardeners' Chronicle* of this date, you give a very fair summary of Mr. Caird's theories as to the value of heating by steam for horticultural purposes as compared with hot-water, and if his bachelor's degree in horticulture depends on any merit he has established in favour of steam, the judges being practical as well as scientific men, I fear he will be plucked. On my taking the management of the gardens at Wrotham Park, near Barnet, in 1837, I found the then, and still, fine conservatory in the flower garden heated by steam. The boiler was a large one, and during severe weather a man had to sit up all night to manage it. We had to use Welsh anthracite coal. The temperature was not easily modified, and during the very severe weather of January, 1838, when the thermometer fell to 6° below zero, the frost got into the house and killed many plants—that was the year known as "Murphy's year." I persuaded my employer to do away with the steam boiler, and replace it by a hot-water one, adding about a fourth more to the pipe surface. This led to a saving of three-fourths of the coal, and it required only the ordinary attention given to such boilers. I was in this conservatory some three weeks ago, and found all the plants it contained in excellent condition. It is true that Mr. Caird claims for steam that it meets certain difficulties where the levels are awkward, some high, some low, and I admit the force

of his argument here; but any gardener worthy the name can so arrange as to overcome these difficulties without steam. If Mr. Caird takes into account the wages of the "skilled engineer" and his "mate," which cannot be less than 10s. per night, not to speak of pipes costing more than double the price of ordinary hot-water pipes, having flanged joints and india-rubber rings, as well as safety-fittings to the boiler, and greater original cost of steam-boiler over the ordinary hot-water boiler, I fancy he will see his degree all but at the vanishing-point. I have been led to send you the above remarks on heating hot-houses by steam from an experience of it which few gardeners of the present day have had. It was adopted to take the place of the old flues, and has been generally abandoned. Wm. Thomson, Clovenfords.

THE WEATHER AND FRUIT.—Although Apples and Pears are thin in some places, it is matter for congratulation that the weather has at last set in fine and warm. The good effect of the recent fine weather is already apparent, Apples and Pears having increased visibly in size and high colour. It is fortunate, therefore, the great fruit show that was arranged to be held this autumn has been put off for the space of another year, as fairly representative collections could not have been got together, and the more favoured parts of the country would have stood at a great advantage as compared with others less favoured by the season. As the crops are light this year, they ought, and will, barring bad weather in spring, be good next year, as the foliage is clean and healthy, and there is plenty of moisture in the ground. J. Sheppard.

THE ROYAL MUSCADINE GRAPE VINES AT TRAFALGAR PARK.—Good examples of this, the best of all Grape Vines for out-of-door culture, are sometimes met with trained on house-walls in the southern and western counties of England; but it is seldom that a south wall, 15 feet high and 70 or 80 feet long, is devoted to its culture. Such, however, is the case at Trafalgar Park, Salisbury, where two plants of the Royal Muscadine are planted about 35 or 40 feet apart, and have clean stems about 4 feet high and 9 inches in circumference. A branch is trained right and left at that point, and rods at 18 or 20 inches apart are trained from these upwards, covering the space mentioned. This was done many years ago, but the Vines are in good condition, and a good crop of fruit was maturing at the time I saw them (September 16). H. W.

THE SEED TRADE.

THE FOREIGN GRASS AND CLOVER CROPS.—We are now able to estimate with some degree of completeness the results of the grass and Clover crops in the Darmstadt district of Germany, whence large supplies are annually drawn. It must be admitted, the prospects are by no means satisfactory; the dry, cold weather which prevailed during a considerable part of last winter had an injurious effect on the plants, and they were also retarded by the frequent frosts that occurred in April and May, followed soon after by unusually hot and dry weather. But most grass seeds, though light in weight, and deficient in plumpness, show a fine bright colour, and may be considered as of average quality; but the yield is far below what is usual in favourable seasons.

Achillea Millefolium (Milfoil or Yarrow), which is more properly classed with forage-plants, and is reckoned a grateful food for sheep, has been harvested in very small quantities, which will be quite insufficient to cover the demand. *Aira* (Hair-grasses), are useful for dry open situations, of which they sometimes constitute the principal vegetation. *A. flexuosa*, which is that most grown, is a very small crop, and as there are no old stocks to fall back upon, prices must rule high. *Anthoxanthum odoratum*, Sweet Vernal Grass, though it yields but a scanty portion of herbage, is useful for nursery on account of its pleasant aroma, is like the preceding very scarce; and so is the yellow Oat-grass, *Avena flavescens*, a species which yields a considerable bulk of fine herbage. The crop of Meadow Foxtail (*Alopecurus pratensis*), is smaller than that of last year, while the quality is not so good, and prices will be high in this case also, especially for exceptionally good lots. The tall Oat-grass

(*Avena elatior*) has been harvested in good quantities and the quality is very fine. Crested Dogtail (*Cynosurus cristatus*) has a very small yield indeed, and dear prices are certain. This species is very valuable on high and dry pastures or sheepdowns, not only on account of its fine short foliage, but also because it roots deeply, and so remains green through the driest part of the summer.

The small Fescues, ovina (sheep's), and *duriuscula* (hard) have also yielded a very small quantity of seed; and old stocks being limited in the face of a very large demand, there is certain to be a considerable advance in prices. The tall Fescue (*elatior*) will be dearer than for many years, the supply being so short. The meadow Fescue (*pratensis*) is a better crop, the seeds fine in colour, and perfect in growth, though a little light in weight. Already prices have risen considerably. The Bent-grasses (*Agrostis*) are scarcer this season than for many years, and prices for both the common and the Bent, or Fiorin, have considerably advanced. Cockfoot (*Dactylis glomerata*), which, though apparently a rough coarse grass, is yet valuable, being much liked by cattle, unless when allowed to become rank, has yielded a large crop of seed, but light in bulk, and indifferent in colour; fine samples are scarce, and correspondingly dear.

Of the meadow-grasses (*Poa*), only the smooth-stalked (*pratensis*) has been harvested in satisfactory quantities; the quality is better than last year, and customary prices rule; the rough-stalked (*trivialis*) has yielded an average crop, the quality of which is inferior to last year's seed, and the drought and heat operated to prevent the seeds becoming as full and plump as usual; extra fine samples are scarce. The Wood Meadow-grass (*nemorialis*) is very scarce also this season, and the yield has been steadily declining for a few years past, while the quality of the seed is less than formerly. The crop of Canary-grass (*Phalaris arundinacea*), which is regarded as one of Nature's pioneers, is, of course, material, and can be used only cut into chaff, and mixed with other food. Very little seed of it has been saved, and it is both scarce and dear. Timothy (*Phleum pratensis*) also yielded less than usual, and prices are advancing.

Unfavourable conditions have also affected the crops of Clover seeds; that of red is small, and the seeds by no means full and bold, which is usually characteristic of those of German growth, and there are few old seeds on hand, while Clover is in larger quantities, but seeds of fine quality are scarce. Alsike is a small crop, but of exceptionally fine quality; it is dear also. Trefoil is an average crop, and fine in quality. Sainfoin is a small crop, and Lucerne promises to be very scarce and dear. *Pisum*.

THE ALPINE GARDEN.

SHORTIA GALACIFOLIA.

I would like to explain to Mr. C. W. Dod (see p. 219), that I was merely speaking as an individual when I said that the above presented "few, if any, difficulties to the cultivator." In saying this, however, I paid no regard to conditions over which the gardener has no control, as for example, altitude, atmospheric influences, and so forth. Such conditions are local, and it is quite possible that while this plant cannot be satisfied in Mr. Dod's garden, and with his wide knowledge of the supposed requirements of hardy plants generally, it may be grown with perfect ease within half a mile of his place. Soil, I quite agree, plays but an unimportant part in the successful culture of many alpine, a fact of which I became cognisant many years ago, owing to a varied experience in growing plants in various parts of this country, and in each and every case I noted the changed behaviour of many plants, while the treatment remained the same. One of my changes was from the flat district of Tooting to the highest part of Sydenham Hill, very near to the Crystal Palace, and here I learned and unlearned

many things in alpine culture; indeed, it was primarily the fresh experience of this locality that caused me to set aside the orthodox rules and adopt my own.

Few growers of alpine, I expect, have attempted the use of artificial manures in their cultivation, but I have used it freely in several instances. Some of my plants of *Saxifraga Burseriana* were treated freely with one of the best-known fertilisers, and these plants spread rapidly. It was my experience which caused me to write, some ten years ago, in a contemporary, that "soil plays only one part in the successful culture of any alpine, and if altitude and climatic conditions be not in harmony with the requirements of the plant, then no kind of soil will supply their places." The above is quoted from memory.

The culture of alpine plants in sphagnum moss is a complete negative to plants requiring this or that addition to the soil; still, I doubt not that even sphagnum moss will be influenced by atmospheric conditions, and that the experience on the mountain-side will differ greatly from that in the valley or lowland; for after all, with many plants, their very existence, not to say perfect success in their culture, depends more upon the air surrounding than upon the nourishment obtainable from the soil. Still, I hope that Mr. Dod's experience of the *Shortia* will not deter any one from attempting its culture, it being a beautiful plant in many ways. It may be encouraging to many to learn that its culture is quite a success at Kew—a proof, I take it, of its powers to resist smoke and town fog; and I believe I am right in stating that Mr. Dewar has no difficulty in growing the plant; certainly his plants were excellent when I saw them early last year. J.

BURFORD LODGE.

In the cool-house, in which flowering plants are generally arranged in Sir Trevor Lawrence's garden, Mr. Wm. Bain, the gardener there, has at present a beautiful display, in which tuberous Begonias predominate, and by far the more beautiful are those which are suspended under the roof, their large and gorgeously-tinted flowers having a more graceful appearance than when the plants grow on stages. This house, with its roof covered with white and red *Lapagerias*, is one of the prettiest sights one can imagine.

The outdoors garden always looks well, and somehow one always finds there some new or rare plants not before seen, or some old friend in better garb than previously observed. The beds of perennials, annuals, and biennials are brilliant with colour just now, and the *Gladiolus* and bulbous plants generally make a fine show. A large patch of *Salpiglossis* is very beautiful, and that finest of all hardy bulbs, *Crinum Powellii*, is flowering in profusion. Rustic arches are turned over the walks in some parts, and these are clad with climbers. One of the prettiest is our old friend *Rhodochiton volubile*, whose purple calices are showy long after the flowers have fallen.

FORESTRY.

SEASONABLE WORK FOR SEPTEMBER.

TREE growth, both in Great Britain and Ireland, has in most cases made rapid progress, and, what is also of importance, most kinds of trees present a good appearance of seed, and as the seeds of several species become ripe during this month, they should be looked after, and gathered before they are shed and blown away by the wind. The Birch, *Betula alba pendula* (Smith), and the common White Birch, *B. alba* (L.), both ripen their seeds in early autumn, and as they are of a small light texture, they should be looked after, and collected at the proper time. The former, or what is generally called the Weeping Birch, is by far the finest ornamental tree; the best specimens are to be found on the banks of mountain streams, and on the shelving rocks on the bleak

sides of the Braemar mountains in Scotland. The contour of this tree, when fully established in its native glens, is simply magnificent; the bark on the stem is rough, corky, and deeply furrowed, and surmounted on the top by a canopy of strong branches, which ramify in all directions, and as these are well furnished with pendent sprays some 10 feet long, it imparts to the tree a light, airy, and graceful appearance, as seen waving in the wind, which is not surpassed, if even equalled, by any other tree with which I am acquainted. When the seeds are gathered, they should either be sown at once, or mixed with damp sand, and kept till spring. The best soil for the seed is that of a light mossy texture, formed into seed-beds 4 feet wide; sow the seeds broadcast, and trample them down on the surface with the feet, which is all the covering they require. I have, however, occasionally sown the seed at once on unreclaimed peat bog, as well as on Heather ground on the mountains of Scotland with perfect success, which is the natural way of propagating the tree. The seed may either be sown broadcast where the plants are to be allowed to remain without transplanting, or break the crust of the surface in spots here and there, and drop a pinch of seed on the spot, and finish by giving the spot a scuffle with the foot, which is all the covering they require. This is by far the best way of raising this tree, as they are a very uncertain crop in the nursery, and besides, transplanting alters the contour of the tree to a large extent. Gentlemen who wish to embellish their grounds with the best forms of the Weeping Birch should arrange to get their seed from the best form of the tree in the North, and sow them at once where the plants are to remain without planting out. This would give the trees a history, as the proprietor perhaps could tell his friends in after years that this fine tree is the progeny of the famous Birch at Hamilton Palace, Lanarkshire, sown by myself on the spot in 1892; or perhaps he might be able to say that some of his trees were the progeny of the historical "Birks of Aberfeldie," Perthshire, or the fine trees in the Highlands of Aberdeenshire. But be this as it may, I at any rate strongly advise all who wish to see the tree in its finest form of development to sow the seed on the spot. The treatment of the white Birch, *B. alba*, is in every respect similar; it is best adapted for coppice-wood, as it produces suckers more freely from the roots left in the ground where trees have been felled than that of the weeping variety. The Birch is the best tree I know for making up blanks in established Pine forests and woods, where the surface of the ground is coated with dead leaves and the exuviae of the Pine. As soon as the seeds are gathered, sow them at once on the surface without any preparation whatever, and the plants will appear above-ground in due course, and produce fine healthy trees where many other species of trees would perish.

Cherry-stones should now be collected, and sown at once on dry, friable ground; or they may be mixed with sand or dry earth, and sown in early spring on beds 4 feet wide, and covering them with about an inch in depth with fine soil.

Sycamore and other kinds of Maple seed should be collected as they become ripe; these had better be thoroughly dried, and kept in a dry place till spring. When sown in autumn, the plants are apt to be cut down with spring frosts. The Sycamore, however, often reproduces itself on the spot, and by a little care and attention the young plants may be trained into fine trees.

Different species of the *Abies* and *Picea* tribe of trees mature their cones in early autumn; these should be collected as they become ripe, and stowed away in a dry place till wanted in spring. Several of the Pine and Cypress tribe also ripen their cones in autumn, all of which should be looked after, and gathered at the proper time.

Thin out the superfluous shoots of young copse-wood, leaving the best in sufficient numbers for a crop. In damp, cloudy weather, plant evergreen shrubs both for covert and ornament, and in doing so, should a little soil adhere to the roots in the shape

of a small ball of earth, it will prove beneficial. Plant screen fences and hedges, and in all cases the ground should be well broken up, and pulverised with a pick, to render it pliable, and increase its fertility for the roots. When the soil is of a poor, thin texture, a little fresh soil added will prove an advantage. When planting ornamental stuff on cold, exposed situations, it is a capital plan to erect a small fence of evergreen branches on the most exposed side of the group or plant, as the case may be. I have always found shelter in such places to be a matter of great importance as a means of obtaining success. After the plants take to the soil, and become established, the branches or fence should be removed. In the nursery department, plant out seedling Hollies into nursery lines, allowing them space to branch out into stout, stocky plants. Dig between the rows of transplanted stuff to keep down weeds, and impart to the grounds a clean, tidy appearance. *J. B. Webster.*

PIERRE SONNERAT.

(1745—1814.)

(Concluded from p. 338.)

Sonnerat did not confine his observations to botany however; his drawings included careful representations of the people of India, their gods and goddesses, not omitting the famous Lingam as an object of nature worship, and the various incarnations of Vishnu, &c.

Subsequently, Sonnerat made several later voyages to India, where he resided for a length of time, being at Pondichéry as late as 1801, when he was fifty-six years of age. Having survived the fall of the Monarchy, he lived to see the Republic reconstituted, under the Empire of the great Napoleon, and died before the final overthrow of that Emperor, in Paris, on April 12, 1814. He has been reproached for too great credulity; but simplicity of character is scarcely a demerit in a world tending to agnosticism. His zeal for science, and his untiring exertions to introduce valuable and economical plants for the enrichment of the French colonies in the Indian Ocean, are deserving of the utmost gratitude which the appreciative colonists in Bourbon and Mauritius can bestow. To him they owe the introduction of the Bread-fruit, the Cacao, the Mango-steen, and several other fruit trees, as well as Spice-trees and Gum-trees of various kinds, now quite acclimatised in their islands.

M. Eyriès, in his notice of Sonnerat, in the *Biographie Universelle*, states that Linnæus named the Sonneratia, a tree of Malabar, the Moluccas, and New Guinea, described by Sonnerat under the name of Pagapaté. It is, he says, one of the monogynous Icosandriæ, and belongs to the family of the Myrtoidæ. In Sonnini's edition of Sonnerat's travels, he gives the name Sonneratia to the Wampi of China. *Capt. S. Pasfield Oliver, Moray House, Stokes Bay, Gosport.*

FLORISTS' FLOWERS.

CARNATION MARGUERITE.

LAST year I was somewhat disappointed with this Carnation, as the majority of the plants we raised came single; but this season there is a great improvement in them, and though the blossoms are small and thin, they are very useful, and will be more so by-and-by when winter sets in. It is certainly a very free-flowering variety, and comes quickly into bloom, as when sown and raised in March or April, buds are formed within three or four months, and the habit is good. Judging from its general appearance, I should think it will be valuable for breeding from, in conjunction with the perpetual kinds, which would be all the better for some of the Marguerite blood in them, as, excepting the well-known Miss Jolliffe, and one or two others, they are great stragglers, and not over free. It would be interesting to know how the Carnation Marguerite originated,

and anyhow, it is to be hoped that it will be taken in hand for purposes of hybridising and breeding from, as there seems something in it in that way; but no doubt, as we have so many active workers in that particular and interesting field of industry and pleasure, it has already been tried. *J. Sheppard.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 20.—A rather large display was made on this occasion in the Drill Hall, James Street, Westminster, Orchids, Dahlias, hardy perennials, Gaillardias, and a considerable quantity of fine fruit being staged. The lecture on Hardy Perennials, by Mr. C. W. Dod, and read by the Secretary, was particularly bright and interesting. A résumé of it will be found on another page.

Floral Committee.

Present: J. Fraser, Esq., in the chair; and Messrs. O. Thomas, B. Wynne, R. Owen, G. Phippen, H. B. May, C. T. Drury, F. Ross, W. C. Leach, J. Walker, C. F. Bause, W. Bain, C. Jeffries, N. Davis, E. Mawley, T. Baines, C. Noble, H. Turner, G. Paul, W. Watson, H. H. D'Ombain, T. W. Girdlestone.

Some beautiful flowers of *Streptocarpus*, seedlings of the present year, seed having been sown in January last, came from Messrs. J. Veitch & Sons, Chelsea, receiving a Vote of Thanks.

A pretty group of Ferns, consisting chiefly of variegated varieties of *Pteris*, and of varietal forms of *Adiantum*. *P. nivalis* has silvery pinnae, with a thin green edge, the lower frond pinnate and sub-erect, taller ones in the heart of the plant being sparingly furnished with narrow pinnae (a First-class Certificate). Other *Pteris* were *Reginæ*, variegated in a similar form, but bolder, as was also the style of growth; *P. Reginæ cristata*, *P. Victoria*, with a silvery band running down the middle of each pinna; *Adiantum decorum*, and *A. diversiforme*.

From the gardens of Miss Alice Rothschild, at Eythrop Park, Aylesbury, came a boxful of silver variegated Elder, with fine cut leaves (Award of Merit).

Mr. F. Ross, Bletchley, showed *Aristolochia gigas* Sturtevantii, with one enormous bloom of an evil smell, but beautifully marked with purple spots on a billowy-white ground, the centre being a patch of reddish-purple. The flower, when fully expanded, would measure 1 foot in width, and in length, with the tail, about 4 feet. The plant was not yet one year old, and it had been raised by Mr. Ross from a cutting.

A few *Chrysanthemums* came from Mr. R. Owen, Castle Hill, Maidenhead; Harvest-home was a rich bronze, with incurving tips to the petals, which are yellow. He also showed two white varieties.

M. C. Smith, Esq. (gr., Mr. Quarterman), showed a quantity of Pine-cones, mixed with toadstools, and stuck in hampers of moss, perhaps to afford an example of decoration (Vote of Thanks).

From Messrs. J. Laing & Sons, Stanstead Park Nurseries, S.E., came a novel-looking tuberous Begonia flower, named W. Allen Richardson, a number of them, in fact, set off on a stand covered with black velvet. The colour is nearly identical with that of the Rose of that name. It is pretty, and useful as a bouquet flower, and for other purposes. The same firm contributed a group of miscellaneous stove and greenhouse plants, stands of cut Begonia blooms, several new varieties in ornamental-leaved Begonias, viz., *Louise Closson*, and *Arthur Malet*. A late-flowering Clivia, *Lady Wolverton*, was noted amongst the flowering subjects (Silver Gilt Flora Medal).

Messrs. B. S. Williams, Paradise and Victoria Nurseries, Upper Holloway, N., showed an excellent group of all the showiest Crotons, clean, healthy and bright (Silver Gilt Flora Medal).

A group of miscellaneous furnishing plants of the stove and greenhouse, was shown by Mr. C. Holdene, Harwick Road, Ealing (Bronze Banksian Medal).

The showiest table of flowers was that of Messrs. Dobbie & Co., Rothesay, N.B. It consisted of *Violas* of numerous colours, *Dahlias*, *Antirrhinums*, self-coloured and striped; *Marigolds*, French, African; and various *Calendulas*. *Fuchsias*, unfortunately shown as *Fuchsias* do not grow, that is with the mouth of the flower turned upwards. The firm showed examples of their selections of Parsley, Carrots, Turnips, Onions, Champion Leek, &c. For the floral group, a Silver-gilt Medal was

awarded; for the superior strain of French Marigolds, an Award of Merit; and for the Leeks, a Cultural Commendation.

Herbaceous plants, in many fine showy species, were shown by Messrs. Paul & Son, The Old Nurseries, Cheshunt. A very richly-coloured Phlox was shown by them, under the name of *Eclairer*, a new shade of purple (Bronze Banksian Medal).

We saw, no doubt, the last of the Dahlias of 1892 on this occasion. On Sunday morning a sharp frost visited many of the Dahlia gardens; some say there were 10° in places, and the tender foliage of the plants was considerably injured. The wonder was, so many flowers were seen, and in such good condition. Mr. C. Turner sent a small collection of new varieties, including Show Dahlia Kathleen (Award of Merit), pale ground, suffused with pink, and slightly tipped with purple, fine petal shape and centre, a good addition to the light varieties; also Mrs. Morgan, a light flower, bluish ground, suffused with lemon at the base, and tipped heavily with purple in the centre; and Reginald, bright crimson, shaded with maroon, and suffused with purple on the basal petals—good centre; also Cactus Dahlia, Oscar, dull orange-scarlet, good shape; and the following new Pompon varieties: Minerva, yellow, slightly tipped with brown in the centre petals, small well-formed flowers. Idalia, bright wine-crimson; small, fine shape. Gypsy Queen, maroon, flushed with crimson on the petal edges; small, well-formed. Boule d'Or, yellow, the basal petals flushed or edged with brown. White Lady, a seedling from White Aster; an improved Lady Blanche. Pluto, pale purple, deeper on the edges. Ringdove, bright terra-cotta, a new colour, very distinct; and Percy, white, with side edgings of deep crimson—small, well-formed.

Mr. T. S. Ware, Tottenham, had the nearest approach to a white Cactus Dahlia we have yet seen—white, with yellow centre, distinct and promising, but not in good condition; and single, Mrs. Henshaw, bright deep orange-crimson, fine shape. From Mr. J. T. West, The Corwalls, Brentwood, came show Dahlia Edward Sheerman, in the way of Arthur Rawlings, but darker, having more maroon, and bright crimson edges, good petal and edges; and a number of blooms of Pandora, a light variety sent out about five years ago by Mr. C. Turner, in the way of Maud Fellowes, with more pink on the petals, said to be very constant in the North; also the following new Pompon varieties—Tommy Keith, white with side markings of crimson (Award of Merit); Arthur West, bright claret-crimson, very compact and fine shape (Award of Merit); Gipsy, crimson flushed with purple on the base petals; Sunshine, bright orange-scarlet, fine colour, small and compact; Mary Kirk, pale primrose-yellow, slightly flushed with brown, good shape; Revenge, bright pinkish-lilac, with side-margins of crimson, distinct in colour; Little Sweetheart, like Tommy Keith, but with side margins of scarlet instead of crimson; Winifred, white with slight purple tinge on the centre petals; Mars, deep scarlet, fine shape; and Eva, cerise flushed with crimson—indeed, a very fine lot of Pompons. Also decorative Dahlia Stebbing Wheeler, yellow, flaked with orange-scarlet; and Cactus Joseph Chamberlain, pale scarlet, but not in very good condition. In addition, Mr. West staged a collection of over one hundred show flowers in great variety. Mr. Arthur Rawlings, nurseryman, Romford, had a collection of 150 show Dahlias, twenty-four of them being varieties raised and distributed by him, and it must be confessed they are among the finest in cultivation. A new show Dahlia Mrs. Page (Rawlings), rose, flushed with lilac-pink on the edges, is new in colour, and highly promising. Mr. S. Mortimer, nurseryman, Farnham, also had a collection of eighty-five blooms of show varieties. Messrs. Perkins & Sons, nurserymen, Coventry, had Cactus Dahlia Matchless, rich shining maroon, the basal petals flushed with deep crimson—very fine and distinct (Award of Merit); Cactus Purple King, and a single named Scarlet Perfection, bright scarlet—fine shape.

Orchid Committee.

Present: Dr. Maxwell T. Masters in the Chair; and Messrs. Jas. O'Brien (Sec.), Sydney Courtauld, T. B. Haywood, Jas. Douglas, W. H. White, H. Williams, F. Sander, Chas. Pilcher, J. Jaques, T. W. Bond, and E. Hill.

Thos. Statter, Esq., Stand Hall, Whitefield, near Manchester (gr., Mr. R. Johnson), exhibited two distinct and beautiful Cattleyas, viz., C. Statteriana, a fine thing, with flowers as large as those of C. Hardyana, and similar in form. The sepals and

petals were nearly white. The handsome lip is crimson at the base with heavy golden veining, the mid-area rich yellow, with a few purple marks. The front of the lip is rich purplish-crimson, and around the whole of it runs a crimped rosy-crimson margin; it is very handsome, and nothing like it has yet been shown (First-class Certificate). The other was *Cattleya aurea Statteriana*, which had previously received a First-class Certificate; its flowers were almost wholly rich yellow, the only other colour being a few dark crimson markings at the base and up the middle of the lip, and a narrow rose marbling at its edge.

Messrs. Jas. Veitch & Son, Royal Exotic Nursery, Chelsea, S.W., showed a new hybrid, *Cattleya* × *Minacia* (Loddigesii ♀, *labiata* var. ♂), a very pretty dwarf variety, with a flower resembling a small *C. labiata*, but with distinct evidence of the other parent in the lip (Award of Merit).

Messrs. F. Sander & Co., St. Albans, staged a small group of Orchids, comprising a good selection of *Cypripedium Maynardii* ×, one of the varieties being curiously marbled; several *C. Chamberlainianum*, *C. picturatum* ×, *C. Eyermannianum* ×, *C. radium* ×, *C. Macfarlanei* ×; eight plants of *Dendrobium Phalaenopsis Schroderianum*, two of *Vanda cœrulea*, *Cattleyas*, *Odontoglossums*, &c. (Vote of Thanks).

Messrs. Hugh Low & Co., Clapton, E., also had a group made up of many *Vanda Kimballiana*, *V. cœrulea*, *Cattleya bicolor Wrigleyana*, *Dendrobium formosum giganteum*, and other species well arranged with Maidenhair Ferns (Vote of Thanks).

W. Walker, Esq., Brettargh, Holt, Kendal, sent two fine specimens of *Saccolabium Blumei*, each with twelve spikes (Vote of Thanks).

Geo. Hardy, Esq., Pickering Lodge, Timperley (gr., Mr. W. Holmes), sent a spike of true *Vanda insignis*.

Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels, exhibited two species of *Cypripodium*, which, not being sufficiently advanced, the committee desired to see again. The same firm also sent a plant of *Odontoglossum præstans*.

Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, showed a plant of *Oncidium incurvum album*, which received a First-class Certificate in 1884, but is still extremely rare.

J. Foster Alcock, Esq., Northchurch, Berkhamstead, exhibited a plant of *Catasetum* with seven of the usual large white male flowers, and one of the helmet-shaped lipped female flowers on the same spike (Vote of Thanks); and C. L. N. Ingram, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), a hybrid *Cypripedium* which had *C. Harrisianum* for one of its parents.

Fruit Committee.

Present: P. Crowley, Esq., in the Chair; and T. Francis Rivers, R. D. Blackmore, W. Wilks, G. Taber, T. J. Saltmarsh, A. Dean, J. A. Laing, G. Cliffe, W. Bates, G. Wythes, J. Hudson, H. Balderson, G. Norman, W. H. Divers, J. Willard, Arnold Moss, and G. W. Cummins.

From the Society's Gardens, Mr. Barron had brought forty dishes and varieties of Potatoes, fair samples and mostly mature so far as a cursory examination disclosed.

Messrs. G. Bunyard & Co., showed Hills' Prize Runner Beans, large, straight, rather smooth-skinned pods 9 inches long (First-class Certificate).

A Runner Bean, Prizewinner, was shown by Messrs. Sutton & Sons, Reading. It has a pod of 7 inches in length (First-class Certificate). A new Melon from Mr. Tegg, gr. at Bearwood, Wokingham, a finely netted yellow flesh, red variety, obtained an Award of Merit. Seedling Melons were shown by different exhibitors, but none was adjudged worthy of an award.

A yellow-fleshed Tomato, named Upperthorpe Orange, was shown by Mr. E. D. Smith, gr. to J. Middleton, Esq., 132, Upperthorpe, Sheffield. It is the size of a *Coe's Golden Drop* Plum, and very prolific.

Messrs. J. Carter & Co., High Holborn, showed their Tomato Blenheim Orange, a large-fruited yellow variety, and a great cropper. It proved to be of very good flavour, and received an Award of Merit.

Mr. W. A. Shaw showed a Tomato—Mitchell's No. 1; it is a heavy-cropping variety, somewhat corrugated, as are most of the best bearers.

Some showy Pears came from Mr. Bannister, gr. to H. Saml. Vincent Ames, Esq., Cote House, Westbury-on-Trim. A quantity of Apples, grown in a back garden within the three miles radius from Charing Cross, by Mr. Bodley, 99, Loughborough

Park, S.W., were mostly nice-looking specimens^(a) (Cultural Commendation).

Milner's seedling Apple was shown by Messrs. J. Laing & Sons, Forest Hill, S.E. Mr. E. Molyneux, gr., Swanmore, Bishop's Waltham, was poorly awarded with a Vote of Thanks for two dishes of excellent Worcester Pearmain Apples.

Some ripe fruits of the Mango were shown by Lady Theodora Guest, Inwood House, Henstridge, for which a Cultural Commendation was given.

The rarely-seen fruits of *Ribes sanguineum* were shown by Mr. S. Mortimer, Swiss Nursery, Farnham. They resemble in colour and arrangement on the stalk the Black Currant, but they are simply sweet, without any flavour whatever (a Vote of Thanks).

Some high-coloured Peaches came from Mr. J. Willard, and Tomatos from Mr. Leach.

Very showy and large seedling Peaches and a Pear came from Messrs. Rivers, Sawbridgeworth; also examples of the Peaches Albatross, Sea Eagle, and Princess of Wales, all grandly developed; very fine examples of Ribston Pippin and Monarch, and other varieties of Plums, and a seedling Plum. A Silver Banksian Medal was awarded.

Mr. Owen Thomas, gr. to the Queen, Frogmore, made a grand display of fruits in season, viz., Grapes: Lady Downes' Seedling, unusually large at the shoulder, and fine in colour, bloom, and size of berry; some splendid Raisin de Calabre, Black Hamburg, from the Hampton Court old Vine, and from Cumberland Lodge, those from the latter being much the finer in bunch and berry. Twelve examples of Smooth Cayenne Pines, 7 or 8 lb. each, perfect fruits and perfectly ripened; a number of Melons, including High Cross Hybrid and Hero of Bath, nothing abnormally large, but good of flavour, doubtless; twenty dishes of Plums, of the best dessert varieties; sixteen varieties in as many dishes of Nectarines, and twenty-two of Peaches, mostly large and high in colour; and a number of dishes of Pears, Apples, Quinces, and Mulberries. A Silver-gilt Knightian Medal was awarded for this fine exhibit.

The following awards were made for Potatoes:—

First-class Certificate.

To Potato Reading Giant, shown by Mr. Fidler, Reading.
To Potato Mary Anderson, shown by Mr. Fletcher.
To Potato Boston (Q. Q.), shown by W. W. Johnson & Sons.
To Potato The Canon, shown by R. Dean, Ealing.

Awards of Merit.

To Potato King of the Earlies, shown by Mr. Ridgewell.
To Potato Craxley Prize-taker, shown by J. Cheal & Sons.
To Potato White Round, shown by Paul & Son.
To Potato White Russet, shown by Mr. Harris.

THE LECTURE.

The usual afternoon Lecture was furnished by the Rev. C. Wolley Dod in the form of an admirable and interesting paper, read in excellent style, by the Hon. Secretary, the Rev. Mr. Wilks, the subject being "Variation of some Hardy Plants under Cultivation." The paper was divided into certain sections, dealing with fertility or otherwise of certain wild plants when cultivated; also variations as to habit or height of coloration of flowers, of doubleness, &c. Wild flowers, it was said, did not show any appreciable evidence of improvement in their native condition, but did so appreciably under cultivation. This was ascribed to the fact that in a wild state, not more perhaps than one seed in a thousand grew, whilst in the cultivated state nearly all grew. Hence, the range for selection was so much greater; and such selection of course leads to the securing of the best and finest forms—hence, the improvement. Considerable differences were found in Mr. Dod's own garden, and it was from observations made therein that the paper was based. In plants, resulting from several years cultivation, changes were seen in the stature, in luxuriance, in size, as well as in colour of flowers, and in seed production. In relation to these matters, errors arising from careless observation arose, thus leading to incorrect conceptions. Thus, he had never found the single wild Daffodil or the common wild Primrose, to change into a double. These plants vary very much in height when transferred from high altitudes to low gardens, and in some cases have smaller flowers, but he had found *Ranunculus alexicaulis* to produce larger flowers. Various plants were mentioned that increase materially in dimensions under cultivation. Others were named that will not show in gardens that same robust habit found in a wild condition. Changes of colour in flowers were due to cultivation, as found in Primroses, Polyanthus, Pyrethrums, Hyacinths, &c. How few wild Primroses show variation in colour; now and then some, though very rarely, are white,

others reddish. A variety of a *Veronica* at Ilan-dudno had not only white flowers, but other colours also—a rare instance. In his Cheshire garden, the white Mallow became largely pink after the introduction of the wild pink form, and all the coloured ones had to be pulled out to keep the white form true. *Geranium Robertianum* became nearly all white with him. The white Foxglove became so much coloured, that the true thing could only be secured by constantly purchasing seed. The next class of changes dealt with was that arising from crosses with other forms of the same species. It had been found that the progeny would so assimilate the characters of the parents as to obliterate their identity. *Aquilegias* were very susceptible to variation in this way. The alpine *Dianthus* vary greatly, and freely intercross. The Mullein hybridises freely, but all products are barren. The Jacob's Ladder will also greatly vary. The following species will produce variations:—*Campanulas*, *Linum glabrum*, *Scillas nutans* and *campanulata*, some *Geraniums*, *Inulas*, *Hellebores*, &c. Cases where plants nearly related never intercross naturally are *Crocuses*, *Narcissi*, *Anemones*, *Ranunculuses*, and *Gentians*. Then was asked, Does cultivation increase or decrease seed-bearing in plants? Mr. Wolley Dod believed generally that increase resulted; there were, however, exceptions, as he had found *Helianthus multiflorus*, single and double, and a variety of *Veronica*, probably subseisilis, to be always sterile. Some other plants were mentioned that never seed. Lastly, was referred to, the question of doubling of flowers, this was not attributed to higher cultivation, but rather was a sportive development produced by cultivation. The Rev. Mr. Henslow, at the request of the chairman, Mr. G. Paul, briefly referred to some of the points raised in the paper, and said he should have much liked Mr. Dod to have been present to have put to him several questions. For instance, Why did some plants become dwarfs? He mentioned the experience of Dr. McNab, who raised a dwarf race of *Rhododendrons* from seed by using pollen from the shortest stamens. Practical observations in the direction referred to were necessary. An interesting case was quoted by Mr. Henslow of a shrub that Mr. Meehan, the American botanist, found always sterile, until on one occasion a branch produced seed, and an examination of some late flowers showed, in this case, the stamens and pistil were of equal length. No one else cared to rise on invitation, and a cordial Vote of Thanks was awarded to Mr. Wolley Dod. This is a rough outline, but a perusal of the paper in its entirety in the Society's Journal will be well repaid.

DURHAM FLORAL.

SEPT. 13, 14.—The twentieth annual show was held in the Durham New Market and Town Hall, on Tuesday and Wednesday. The Society has had a hard struggle for existence during recent years, and the officials are worthy of great praise for the courageous manner with which they have kept it to the fore in the district. As against previous shows there was a marked excess of exhibits, and the quality of these must be classed as very good.

In the open class the specimen stove and greenhouse, foliage and flowering plants were magnificent, and amongst the latter were some grand specimen *Ericas*. The foliage plants were of much excellence, and very fresh-looking; and the same may be said of the Ferns and Fuchsias.

Cut Flowers.—The competition in these was very strong; the bouquets and the *epergues*, and the baskets of flowers, were excellent. Messrs. Perkins & Son, of Coventry, taking in the latter all the leading prizes.

Roses, Dahlias, Asters, *Gladiolus* were all fairly represented; also *Marigolds*, *Pinks* and *Carnations*. The collections of stove and greenhouse cut flowers, and the herbaceous cut flowers, were remarkably good, and their numbers made this part of the show most interesting.

Fruit.—Excellent Grapes were shown in quantity, and the entries for the collection of six distinct dishes brought some close competition—so much so, that the 1st and 2nd were eventually placed equal 1st. Peaches, Apricots, Apples, Pears, Currants, &c., were fairly shown.

Vegetables, all round, left nothing to be desired, and the competition was severe.

In addition to the above, there is an industrial show of needlework, paintings, drawings, photography, and writing—an interesting part of the show, and one that is greatly patronised by the inhabitants.

THE BULB GARDEN.

DAFFODILS.

THE planting season for these bulbs will soon be upon us, and a few notes of my experience with some of the varieties, may afford the readers of this journal a few hints as to position, soil, aspect, &c. I find the varieties of these flowers vary considerably in the way they succeed here, and, however interesting some of them may be from a collector's point of view, there is too much sameness about some of them when looked at merely as garden flowers. Possibly a little peculiarity of soil may account for some varieties not succeeding so well here as others. For instance, *obvallaris*, *maximus*, *major*, *cernuus pulcher*, *spurius*, *albicans*, *James Walker*, *Barrii*, *Sensation*, *Mrs. George Cannell*, and *Mary Anderson* have all failed to a great extent, and some are altogether dead, while other varieties, under exactly the same treatment, have increased very fast. *N. Bulbocodium* has also disappeared, but I am not surprised at the loss of this, since I have seen it grown as a bog plant, which is evidently the best treatment to give this species; the improved size of its flowers, under such conditions, is surprising. I have not seen any other variety grown in this way, but those kinds which do well with us are grown on a very dry border facing south, in a limestone soil which has been improved with additions of burnt earth, &c., our whole collection, which amounts to nearly fifty kinds, being grown under similar conditions.

The variety that has increased the most is *Leedsii* Queen of England, in six years this has increased an hundredfold; it is a very pretty white-flowered variety. *Duchess of Brabant*, *Madge Matthew*, *Leedsii* Gem, and *Minnie Hume*, are all very similar to it in appearance, so much so indeed, that only one of the five kinds is required under ordinary circumstances. *Sir Watkin* is a good grower here, but does not increase so fast as most of the *Incomparabilis* section; it should be in every collection of spring-flowering plants, as its striking appearance commands attention at once even when growing among a quantity of other kinds. The same may be said of *Leedsii* Figaro with the exception that it increases faster, it runs *Sir Watkin* very closely for size when well grown; other good and distinct kinds which do well here are *Barrii* conspicua, *Barbidgeii*, *T. M. Absolon*, and *Katherine Spurrell*.

Of the *Ajax* or trumpet section, *N. minor nanus* is small, but is the earliest to flower, and is a favourite with most people; it opened here this season on March 26. *Yellow King* was only four days later, and is a kind that ought to be in every garden; it seeds more freely here than other kinds. *N. princeps* commenced to open on April 4, and a fresh batch of it from Ireland is doing well, previous lots having failed to a great extent; it is a good useful variety, if it can be made to grow properly, paler in colour than *Yellow King*, but similar in size. *Emperor* flowers well with us, and increases fast; it is a fine large self-coloured variety, of an excellent constitution. *N. bicolor Horsfieldii* is also a great favourite with us, as it is one of the most vigorous growers, and a fine large flower, with yellow tube and white sepals; it commenced to open on April 6. *N. bicolor grandis* is very similar in appearance to the preceding, but both ought to be grown in every garden, the latter variety flowering much later, and thus keeping up a succession; it commenced opening here on April 21. *N. Empress* is very similar to the two last kinds, and as it flowers before *Horsfieldii* is over, it is not required where the other two are grown. We have none of the scarce varieties in this section, some of which are quoted at four guineas per root, so I am unable to say how they succeed. Certainly the flowers are very fine.

N. poeticus ornatus is a great improvement on the type, the sepals being nearly twice the width, and not so apt to curl; it is also fully three weeks earlier in flowering. *N. poeticus poetarum* is not so distinct, although it is much larger than the old variety.

The double kind, sometimes called "*Gardenia flowered*," is very useful where pure white flowers are in demand; it is also a good grower, and constant in character with us, but occasionally fails to open its flowers. This occurs chiefly in dry, warm weather. *N. odoratus rugilobus* is a decided advance on the type, which is also known as the *Jonquil*, but the improvement in the form of the flower is at the expense of the perfume, although a considerable portion of this is retained.

The old-fashioned double varieties, known as *Butter and Eggs*, *Eggs and Bacon*, *Codlings and Cream*, are not so pretty in my opinion as the single kinds. I find the two former varieties do well here; the other is not so robust, but is the finest flower of the three, sometimes measuring nearly 4 inches across—it is also nearly white, which enhances its value.

Like many other plants which the gardener has to deal with, we are now getting too many varieties of Daffodils. It is true there is a distinction between them, but at a few inches distance it is impossible to perceive it; for instance, *N. Leedsii* Queen of England, *Duchess of Brabant*, *Madge Matthew*, *Gem*, and *Minnie Hume*, are all very much alike. The same may be said of *N. Leedsii amabilis*, *sulphureus*, *Astræa*, *Leedsii Figaro*, and *concolor Autocrat*, among yellows; and *albidus*, *Annie Baden*, *Burbidgeii*, *T. M. Absolon*, among the two-coloured varieties in this section.

A selection of distinct single varieties in their order of flowering, and which succeed the best here, is as follows:—*N. minor nanus*, *N. Yellow King*, *N. princeps*, *N. bicolor Horsfieldii*, *N. Sir Watkin*, *N. Leedsii* Queen of England, *N. Emperor*, *N. Katherine Spurrell*, *N. Leedsii Figaro*, *N. bicolor grandis*, *N. Barrii conspicua*, *N. poeticus ornatus*, *N. Burbidgeii*, *T. M. Absolon*.

Daffodils are seen to the best advantage when flowering, if they are grown in clumps among other spring-flowering plants, such as *Myosotis*, self-coloured *Primroses*, *Muscari* of various colours, and especially *Anemone fulgens*, *A. apennina*, *A. vernalis*, &c. *W. H. Divers, Stamford.*

NURSERY NOTES.

J. R. BOX, CROYDON.

JUST opposite to the West Croydon station of the Brighton railway there is a very attractive seedman's shop, which is the central place of business of Mr. Box, who, as an energetic trader, has made for himself an excellent reputation in what is the most populous town in the county of Surrey. Like so many other florists in these days, beyond conducting the ordinary business of a nurseryman, Mr. Box has developed into a sort of specialist also, for he, too, is a *Begonia* grower in a considerable way. To find the *Begonias*, however, it is needful to ride per tram a mile down the London Road, when the nursery is easily reached. Here the first thing which attracts attention is the extensive use made for bordering that striking *Begonia* of the *semperflorens* type, *Atro-purpurea*, which has dark metallic leafage and red flowers, and which is a continental introduction. The really attractive forms are those of the now popular tuberous section, which in a series of beds are close by, doubles on the one side, singles on the other, all in beds of some six rows each at about a foot apart, the plants being 7 inches apart. Of course, that is a method of planting not to be commended for ordinary decorative purposes, but in the case of thousands of seedlings it is indispensable. Seed is grown in January, and later the plants are grown on in shallow boxes; from those in June they are transferred to the open ground, and planted thickly as described. Here the bloom is profuse, and the entire body of beds give very beautiful floral effects. The flower seems to be materially dependent upon the nature of soil. If that be too rich, gross growth and luxuriant leafage results, with perhaps the finest tubers. Poorer soil is productive of most bloom. In all cases a liberal supply

of water is essential for *Begonias*. As all the myriads of seedling plants are from seed, saved first in colours, and second as singles or doubles; the question naturally is asked, what proportion of the plants come true to variety? So far as colours are concerned, it is found that they come true from seed in the proportion of from 80 to 90 per cent. So far as doubles come true to character, the proportion is about 50 to 60 per cent. Singles very rarely indeed show double form, but doubles revert largely to the single form, though it seems to be a fact that the deeper colours gives the best average, whilst both forms gives a wondrous variety in colour and shading; there is, perhaps because of the multiplicity of petals, more refinement in shading in the doubles. On the other hand, the large bold petals give the finest effects. Now Mr. Box has of colours, white, flesh, pink, bicolor, white shading to red or deep colours, rose, orange, flowers not so large as in other cases, but exhibiting various lovely tints; scarlet, the richest of all for massing; crimson, &c. Because of the exceeding freedom of bloom seen here, the effect of the masses of bloom given by the numerous beds is almost dazzling. Evidence of the quality of the strain is found in the dimensions of the flowers, which frequently run from these small seedling plants to 4 and 5 inches in diameter, whilst the remarkable development made of late in the side petals, have now resulted in the production of almost perfect rounded flowers. With regard to doubles, *Davisii flore-pleno*, was thought to be the richest crimson double, but seedlings now show that it is left behind in intensity, as well as in size of bloom. Some continental forms, notably *Charlemagne Denizart*, exhibit what may be termed *Carnation flaking* in a modified degree, and we may look presently for a race of flaked double *Begonias*.

In a small nursery nearer the town, Mr. Box grows a good selection of choice *Caladiums*. We learn that new varieties, and in enormous quantities, are to be had from Rio Janeiro, where one grower devotes acres of ground to their cultivation, and from whence come many of the finest novelties. Of newer forms, *Mrs. Harry Veitch* has intense red leaves; *Comte de Germiny* has red leaves, spotted white; *Louis van Houtte* has rich red foliage; the old *Chantini*, and *Prince Albert Edward*, are of the best popular forms; and very beautiful are *Caspard Crayer*, *Madame John Scheffer*, and *Reine Marie du Portugal*. There seems to be a growing demand for *Caladiums*, and the wondrously rich-leaved forms more recently introduced indicate that the capacities of the *Caladium* are hardly yet realised. There is here a good stock of the varied *Ficus elastica*, which will presently be in great request. *Crotons* in variety are good; so, also, is a large stock of *Eucharis amazonica*; and there is an excellent strain of *Gloxinias*. The climbing *Asparagus* is here trained somewhat after the continental fashion, in sharp cones, up string, running from the edge of the pots to the top of a centre stick, only that abroad the growers use green string. Mr. Box is evidently a smart business man, and has a good connection. There is a big trade just now being done in imported bulbs, and of allied roots.

MESSRS. REID & BORNEMANN, SYDENHAM.

Persons seeking the place of business of this partnership of energetic and intelligent young Germans, will reach it in less than ten minutes' walk from Sydenham Station, L.B.R., taking on the right down the road the third turning. The place is somewhat new, has had much licking into shape, and needs yet much more; but it will be all in order in good time. From the front entrance to the nursery proper, which lies away behind the houses, runs a wide roadway, and on either side are broad beds of *Begonias*, for these popular flowers here form a specialty, and are grown in immense quantities. Here, too, one sees the respective sections and colours well preserved and separated, and average quality is of the very best. Apart from the production of fine strains for pot culture and bedding, the firm have given some attention to the development of perfume in the *Begonia*, and a sweet-scented strain may be

However, the great show of Chrysanthemums at Earl's Court next month will enable the firm to show all their new early varieties to the best advantage. Of course the stock includes all the best forms of the day ; but the novelties, both from the continent and English raising, are so numerous, that selection becomes bewildering. However, the trade growers like the firm at Sydenham, have to bear the brunt of the testing, and the private grower benefits by their considerable and none too profitable labours.

which occurred on Tuesday, the 6th inst., at the ripe age of eighty-six years. His interment took place at Lydbury, North, on Saturday, the 10th inst., and was attended by a number of the *employés* of the Right Hon. the Earl of Powis. It may be interesting to our readers to learn that the late Mr. Bond was in his youth in Kew Gardens, and his first visit to Walcot, the Shropshire seat of the Earl of Powis, was to paint a sketch of a very fine specimen of the Mango tree. Subsequently, he accepted the position of head gardener, which he retained for the long period of forty-seven years, during which time he served three Earls of Powis. By the last, owing to his advanced age, he was pensioned off, and has for eight years enjoyed his well-merited repose. There is at present in the "Walcot grounds," a very fine specimen of Douglas Fir, planted by Mr. Bond on March 22, 1842; on May 12, 1892, it measured as follows:—Height, 107 feet to the top of leader; girth, 12 feet 9 inches at 4 feet from the ground, and is estimated to contain 400 square feet of timber. As a master, Mr. Bond was kind and considerate, deservedly respected by his *employés*, and his retirement from the active duties of life was much regretted.

SAMUEL FARQUHAR.—There was laid to rest in Echt churchyard on Saturday, the 17th inst., the remains of Samuel Farquhar. Mr. Farquhar, who had reached the age of 86 years, was for the long period of 52 years head gardener at Dunect House, near Aberdeen, and during that time he enjoyed the esteem of the former proprietors, Mr. Forbes and the late Earl of Crawford and Balcarres. His tenure of office was no insecure, and in particular during the time the laying-out of the lawns and policies of Dunect House was in progress the whole of the work devolved upon Mr. Farquhar. The successful manner in which he carried out the arrangements amply justified the confidence reposed in his ability by the Earl of Crawford, and has been the source of general admiration. On account of advancing years Mr. Farquhar relinquished his post at Dunect House in 1877, and since then has resided with his son, Mr. J. Farquhar, agricultural auctioneer, Old Echt.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees — a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.					More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
	Above (+) or below (—) the Mean for the week ending September 17.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 3, 1892.	Below 42°, difference from Mean since Jan. 3, 1892.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	In.				
0 1 —	57	0	— 34	+ 212	15 +	178	33·2	10	28	
1 1 —	67	0	— 205	+ 241	2 —	138	18·8	19	32	
2 0 aver	85	0	— 124	+ 186	4 —	133	17·0	29	31	
3 1 +	102	0	— 115	+ 210	6 —	122	16·2	44	38	
4 0 aver	89	0	— 91	+ 249	6 —	118	15·3	38	35	
5 0 aver	111	0	— 94	+ 138	6 —	104	13·6	46	42	
6 1 —	71	0	— 111	+ 193	4 +	139	30·5	23	35	
7 0 aver	89	0	— 72	+ 165	2 —	139	24·0	27	35	
8 1 —	95	0	— 31	+ 117	8 —	125	17·9	40	42	
9 1 —	78	0	— 92	+ 122	2 +	153	25·9	21	31	
10 1 —	86	0	— 18	+ 132	4 —	135	26·6	32	34	
* 0 aver	120	0	+ 71	+ 42	7 —	123	17·5	61	50	

The districts indicated by number in the first column are the following :—

0, Scotland, N. *Principal Wheat-producing Districts*—
1, Scotland, E.; 2, England, N.E.; 3, England, E.;
4, Midland Counties; 5, England, S.
Principal Grazing, &c., Districts—6, Scotland, W.; 7,
England, N.W.; 8, England, S.W.; 9, Ireland, N.;
10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

THE following summary record of the weather for the week ending September 17, is furnished from the Meteorological Office:—

"The *weather* was fair and dry over the greater part of the Kingdom; but, dull, unsettled, and very rainy over the northern and western portions of Ireland and Scotland.

"The temperature was again below the mean in the north and west, but just equalled it in many parts of England, and slightly exceeded it in 'England, E.' The highest of the maxima were registered on rather irregular dates, and ranged from between 70° and 73° over the southern, eastern, and Midland districts, to 62° in 'Scotland, N.,' and 59° in 'Scotland, W.' The lowest of the minima were recorded at most stations during the middle part of the week, when the thermometer fell to between 33° and 40° over England, between 36° and 38° in Scotland, and to 34° in Ireland, but only to 45° in the 'Channel Islands.'

"The rainfall exceeded the mean in 'Scotland, N. and W.,' and also in 'Ireland, N. ;' in 'Scotland, N.' the excess was very large. In all other parts of the Kingdom there was again a deficit, and in most of the English districts the fall was very slight.

"The *bright sunshine* was very little prevalent in the north and west, but a fair amount was recorded in most parts of England. The percentage of possible duration ranged from 61 in the 'Channel Islands,' to between 40 and 46 over eastern, southern, and south-western England, and to only 19 in 'Scotland, E.,' and 10 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, September 22.

MARKET quiet. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	<i>s. d. s. d.</i>		<i>s. d. s. d.</i>
Apples, p. half-sieve	1 0-3 6	Peaches, per doz. ...	2 0-6 0
Grapes, per lb.	0 6-1 6	Pine-apples, St. Michael	4 0-6 0
Kent Filberts, per lb.	0 9-...	Plums, p. half-sieve	2 0-4 0
Lemons, per case	15 0-35 0		
Melons, each	0 6-1 3		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	<i>s. d. s. d.</i>		<i>s. d. s. d.</i>
Adiantum, per doz.	4 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	15 0-30 0	— per 100	... 50-80 0
— specimen, each	7 6-21 0	Ficus elastica, each	1 6-7 6
Asters, per doz.	... 6 0 12 0	Fuchsia, per doz.	... 3 0 6 0
Balsams, per doz.	... 3 0-6 0	Heliotrope, per doz.	3 0-6 0
Begonia, per doz.	6 0-12 0	Hydrangea, per doz.	9 0-18 0
Campaula, per doz.	6 0-9 0	Lilium, various, doz.	18-30 0
Chrysanthemums, p.		Marguerite, per doz.	6 0-12 0
doz.	4 0-12 0	Mignonette, doz pots	4 0-6 0
— large plants, ea.	1 6-2 6	Pails, various, each	2 0-10 0
Coleus, per doz.	... 3 0-6 0	— specimens, each	10 6-84 0
Cyperus, per dozen	4 0-10 0	Pelargonium, p. doz.	6 0-12 0
Dracæna, each	... 1 0-5 0	— scarlet, p. doz.	2 0-4 0
		Solanums, per doz.	12 0-15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	<i>s. d. s. d.</i>		<i>s. d. s. d.</i>
Arum, per doz. bl.	3 0-4 0	Odontoglossum	
Asters, p. doz. bun.	4 0-9 0	crispum, 12 blms.	2 0-6 0
Carnations, 12 blms.	1 0-2 0	Mignonette, 12 bun.	2 0-4 0
— 12 bunches	3 0-6 0	Myosotis, or Forget-	
Chrysanthemums, p.		me-not, 12 bunches	2 6-4 0
doz. blooms	0 6-2 6	Pansies	... 1 0-2 0
— p. doz. bunches	3 0 9 0	Pelargonium, scar-	
Cornflower, 12 bun.	1 6-3 0	let, per 12 bun.	2 6-4 0
Eucharis, per dozen	2 0-4 0	— 12 sprays	... 0 6-1 0
Gardenia, per dozen	1 6-3 0	Poppies, 12 bunches	2 0-4 0
Gladiolus, doz. bun.	6 0-12 0	Primula, double	... 4 0-6 0
— p. doz. spikes	1 0-2 0	Pyrethrum	... 2 0-4 0
Heliotrope, per doz.		Roses, Tea, per dozen	1 0-2 0
sprays	... 0 3-0 6	— coloured, dozen	1 0-1 6
Lavender, doz. bun.	5 0-7 0	— yellow (Maré-	
Lilium Harrisii, doz.	2 0-4 0	chale), per doz.	2 0-5 0
— various, do.	1 0-3 0	— red, per dozen	1 0-2 0
Maiden Hair Fern,		— outdoor, 12 bun.	2 0-6 0
12 bunches	4 0-6 0	Stephanotis, 12 sprays	1 6-3 0
Marguerite, per doz.		Stocks, doz. bunches	3 0-4 0
bunches	3 0-4 0	Sunflower, doz. bun.	2 0-6 0
Orchids:—		Sweet Peas, doz. bun.	1 0-3 0
Cattleya, 12 blms.	6 0-12 0	— Sultan, 12 bun.	1 6-3 0
		Tuberose, 12 blms.	0 3-0 0

ORCHID-BLOOM in variety.

VEGETABLES. — AVERAGE RETAIL PRICES.

	s. d. d.	s. d. d.
Artichokes, Globe, ea.	0 4 0	Mushrooms, punnet 2 0 -
Beans, French, lb. ...	2 6 30	Mustard and Cress,
Bent, s. d., per dozen	2 0 30	punnet ...
Carrots, per bunch...	0 4 0 6	Parsley per bunch...
Cauliflowers, each	0 3 0 6	Shallots, per lb. ...
Cucumbers, each	0 4 0 8	Spinach, per bushel
Endive, per dozen	2 0 30	Tomatos, per lb. ...
Herbs, per bunch	0 9 10	Turnips, per bunch...
Lettuces, per doz.	1 6 20	

POTATOS.

MARKETS remain dull, and prices low. At our railway Potato depots, stocks have been increasing. Best samples off bright soils, 80s. to 70s.; do., dark, 45s. to 55s. *J. B. Thomas.*

Obituary.

GEORGE BOND.—It is with regret that we have this week to record the death of Mr. George Bond of Clematis Cottage, Lydbury, North, Shropshire,

SEEDS.

LONDON: Sept. 21.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that the supply of Trifolium is as nearly as possible exhausted; for the insignificant quantity remaining, much higher quotations are obtained. As yet there is no business doing in Clover seeds. Winter Tares are in brisk request at full prices. Seed Rye continues good and cheap. The new Essex White Mustard realises high rates. Rape seed moves off slowly. With regard to Canary seed, the recent excitement has given place to a quieter feeling. Hemp seed and Buckwheat are without alteration. Linseed is steadier. Blue Peas meet a good inquiry.

FRUITS AND VEGETABLES.

BOROUGH: Sept. 20.—Quotations:—Cabbages, 2s. 6d. to 3s. 6d.; Marrows, 3s. 6d. to 4s. per tally; Cauliflowers, 1s. 6d. to 1s. 9d. per dozen; Lettuces, 6d. to 1s. per score; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 2s. per dozen bunches; English Onions, 4s. to 4s. 6d. per cwt.; Horseradish, English, 2s. 6d.; foreign do., 2s. per bundle; English Apples, 2s. 6d. to 3s. per bushel.

SPITALFIELDS: Sept. 20.—Quotations:—Cabbages, 2s. to 4s.; Marrows, 2s. 6d. to 3s. 6d.; Cauliflowers, 2s. 6d. to 5s. per tally; Spinach, 1s. 6d. to 3s.; Scarlet Beans, 2s. to 2s. 6d.; French do., 2s. to 2s. 6d.; Beetroots, 1s. 6d. to 2s. per bushel; Greens, 1s. 6d. to 1s. 9d.; Carrots, 1s. 6d. to 2s. 6d.; Onions, 1s. 9d. to 2s. 6d.; Parsley, 1s. to 1s. 6d. per dozen bunches; Spanish Onions, 4s. 6d. to 5s. 6d. per case; Dutch do., 2s. 9d. to 3s. 6d.; Belgian do., 2s. 9d. to 3s. 3d. per bag of 110lb.; Leeks, 1s. 6d. to 2s. 6d.; Endive, 6d. to 9d.; Cabbage Lettuces, 3d. to 4d. per dozen; Cos Lettuce, 4d. to 1s. per score; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Mint, 1s. 6d. to 2s.; Horse Radish, 12s. to 14s. per dozen bundles; English Apples, 2s. to 4s. per bushel; Pears, 2s. to 3s. 6d.; Egg Plums, 3s. to 3s. 6d.; Victoria do., 3s. 6d. to 4s.; Damsons, 2s. to 2s. 6d.; Bullaces, 2s. to 2s. 3d.; Green Gages, 5s. to 6s. per half-sieve; English Tomatoes, 3s. 6d. to 4s. 6d. per peck; foreign do., 6d. to 1s. 6d. per box.

STRATFORD, Sept. 21.—There has been a good supply of all kinds of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 2s. to 4s. per tally; Scarlet Beans, 1s. to 2s. per sieve; 2s. to 4s. per bag; Cauliflowers, 1s. to 2s. per dozen; 4s. to 7s. 6d. per tally; Turnips, 1s. 6d. to 2s. per dozen bunches; 40s. to 45s. per ton. Carrots, household, 45s. to 50s. per ton; Mangolds, 17s. to 20s. per ton; Onions, Dutch, 3s. 6d. to 4s. per bag; do., Oporto, 6s. to 7s. 6d. per case; Apples, English, 2s. to 6s. 6d. per bushel; Plums, 1s. 7d. to 2s. per half-sieve; Damsons, 3s. to 3s. 3d. do.; Celery, 8d. to 1s. 1d. per roll; Pears, 3s. to 6s. per bushel.

FARRINGTON: Sept. 22.—Quotations:—Cabbage, pickling, 1s. 6d. per dozen; Beetroot, 2s. 6d. per bushel; Carrots, 2s. 6d. to 3s. per bag; Turnips, 2s. 6d. to 3s. do.; Marrows, 3s. per half-tally; frame Cucumbers, 1s. 3d. to 1s. 6d. per doz.; Apples, cooking, 2s. 6d. to 3s. per bushel; Golden Knobs, 6s. do.; Manx Codlins, 3s. 6d. do.; Pears, Hazel, 6s. per bushel; Plums, 2s. per half-bushel; Damsons, 3s. do.; Grapes, Lisbon, 10s. per box; Tomatoes, foreign, 2s. 6d. per box.

NOTICES TO CORRESPONDENTS.

* * PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

APPLE TREE: J. P. H. If it be a bearing tree which has not been root-pruned or lifted since it was planted, it will be safer to first prepare it for removal. Cut a trench 3 feet away from the stem as deep as the bulk of the roots go, and 1½ feet wide; cut off all roots at the outer side of the trench, and lift very carefully all roots to within 2 feet of the stem. Shorten all of them a little, and remove all badly-bruised parts, and fill in the trench with good fresh soil, arranging the roots at various levels, and in straight lines diverging from the stem. If the tree is a large one it will be sufficient if one-half of the distance round the tree is finished this year, the remainder being completed in the autumn of 1893. It will be prudent to reduce the size of the head in any case by removing superfluous branches and weak shoots, and in case of large head, the branches may be shortened by 2 or 3 feet. Apple trees of more than 12 years old on the free stock, if not prepared in the way described, are apt to become useless after removal, or die.

BLISTER ON VINE LEAVES: D. R. We adhere by our first reply in this column, and no leaves have reached us as yet.

BOOKS: L. R. Henfrey's *Elementary Course of Botany*. 4th Ed. John Van Voorst, Paternoster Row.—*British Flora*. 5th Ed. L. Reeve & Co., Henrietta Street, W.C.

CARNATION: T. Brothers. We do not recognise it. Send it to some grower of these plants.

COLCHICUM DECAISNEI: W. E. G. We have never seen the plant so named.

GRAPES, &c.: C. T. We know of no case in which the manure with which the Vines and Peaches were dressed had affected the flavour of the fruit. We can believe that in your district a sooty flavour might be given to the fruit by the deposit of soot on it. It is a fact that glass roofs become almost opaque from this cause—in fact, nothing escapes. If the bunches before eating the Grapes, were washed with clean water applied with some degree of force with a garden syringe, most if not all, this deposit would disappear. The Grapes would be little the worse in appearance, but they should be hung up in an airy place before being sent to table. Peaches are eaten after the skin is removed, so that nothing more is required in the case of this fruit.

LEAVES OF CLOGYN CRISTATA: L. Delarue-Cardon. It is a fungoid growth that is now become rather common amongst Orchids. Sponging with weak Tobacco-water or Quassia-water will prevent much injury being done if applied soon after its appearance.

LILIUM NEILGHERRENSE: W. J. B. The same kind of treatment as that accorded to *L. lancifolium*, i.e., cultivation during winter, spring, and early summer in the greenhouse or under some kind of cover. Pot the bulbs after the growths have ripened, one good-sized bulb in an 8-inch pot, or three in a 10-inch one, employing rotted cowdung, loam, coarse peat, and a small quantity of sand; let these ingredients be used in a roughish state; put the bulbs halfway down the pot, and just cover them with soil, the filling of the pot being done when the stems are 1½ foot high. Stand in a cool pit or greenhouse facing north, or even out of doors, screened behind a building from the sun, each pot being covered with a piece of slate to exclude rats and mice. On the approach of winter cover the pots with tree leaves to the depth of 1 foot. Part of the stock might be so treated, and part in the greenhouse or pit. It would give a succession of bloom. All greenhouse Lilies do well under leaves during their resting-period, the roots not being excited by warmth to form stems before winter is past. Be sure that the potting is firmly done, especially making sure that the Lily-bulb rests on a firm base. Old potsful of bulbs need not always be pulled apart, but they may be re-potted whole.

LILIUM HARRISII *syn.* *L. LONGIFLORUM EXIMUM*: W. J. B. It is a half-hardy species, but it will endure greenhouse treatment, and when in growth the heat of the intermediate house may be employed to hasten the time of flowering, although the flowers are not so enduring as when grown cool or out of doors; potting and soil the same as for *L. neilgherrense*. If the bulbs have been forced they might be turned into the borders after flowering—in the mass, or kept in pots till ripe, and then divided and planted, there to remain for one or two years, cutting off the blooms if the plants come up weakly. The deformity of the blooms may be due to insects. You should send us examples for inspection.

MARKET PRICES: W. J. B. Private grower's goods fetch low prices for several reasons. They do not arrive in time, or they are not packed in saleable packages, are not sorted into firsts, seconds, &c.; are not of even sample; or it is understood that they must be sold, and that whatever they fetch will be accepted by the senders. Until the private grower can be brought into touch with the consumer, so long will both be at the mercy of the middleman.

MEALY BUG IN THE CONSERVATORY: E. S. E. Some of the plants that have tender foliage may be washed with methylated spirits, in so far as the infested parts are concerned. The hard, woody stems of climbing plants, Camellias, &c., may be painted with a thick paint made of clay, soft-soap, flowers-of-sulphur, and a little nuxvomica; or use Gishurst soap, at the rate of 2 oz. to the gallon of water; if there be no leaves on the stems, 4 oz. may be used. Added to these remedies, fumigation with the new material, Nicotine will be of service.

NAMES OF FRUITS: C. H. Peaches: 1 and 2, Noblesse; 3, Grosse Mignonne; 4, Noblesse; 5, Fairchild's Early; 6, Bellegarde. Peaches cannot be named with any certainty in the absence of the leaves and flowers.—T. B. 1 and 11, Manx's Codlin; 2 and 6, Lord Grosvenor; 5, Kerry

Pippin; 8, King of the Pippins; 7, Red Quarrendon; 9, Lord Suffield; 12, Hanwell Souring.—J. Box. 1, Early Julien, nearly rotten; 1, Irish Peach; 2, Manx's Codlin.—B. W. S. Next week.

NAMES OF PLANTS: S. Ely. *Epidendrum ciliare*.—G. M. C. *Epidendrum fragrans*.—W. L.—*Lælia crispata*.—Flowers. 1, *Hedysarum coronarium*; 2, *Begonia Rex* variety; 3, *Selaginella lepidophylla*; 4, *Onychium japonicum*; 5, *Davallia* (*Leucostegia*) *immersa*; 6, *Adiantum cuneatum*.—C. F. Camberley. 8, *Lasiandra macrantha*; 2, *Vinca oculata alba*; 3, *Tydaea formosa*; 4, *Polystichum capense*; 5, *Blechnum braziliense*; 6, *Acalypha Macleania*.—H. J. R., Florence. *Stanhopea Wardii*.—St. Mary's Isle. 1, *Suaeda maritima*; 2, *Sonchus arvensis*; 3, *Epipactis latifolia*; 4, *Arenaria marina*; 5, *Veronica Beccabunga*; 6, *Filago germanica*; 7, withered beyond recognition; 8, *Atriplex patula*; 9, *A. rosea*. As the numbers were in some cases detached, we cannot be sure that they are correctly assigned. H. & Co. *Staphylea pinnata*.—A. W. Unripe fruit of some Quince like *Pyrus Maulei*; send leaves. W. C. R. *Yucca filifera*, with the curious horn-like processes on the margin, which are often found in this species. Number 7. 1, *Jasminum officinale*; 2, *Verbascum nigrum*; 3, *Eucomis punctata*; 4, *Agrostemma coronaria*; 5, *Escallonia macrantha*; 6, *Begonia Digwelliana*. J. D. A. *Gloriosa superba*.—G. F. 1. *Phytolacca decandra*; 2, *Maclura aurantiaca*, the Osage Orange; 3, *Diplopappus chrysophyllus*; 4, *Symphoricarpos racemosus variegatus*; 5, *Osmanthus ilicifolius*; 6, *Spiraea Fortunei alba*.—J. M. 5, *Scolopendrium vulgare*; 26, *Asplenium trichomanes*; the others next week.—J. O. B. *Cratægus Aronia*.

PLUMS: R. Miller. Owing to inefficient packing, the fruits are unrecognisable.

PRONUNCIATION: Youth, Muscat, the u as in up; the second syllable as written. Gros Colman or Gros Colmar, as the French would pronounce the first word gro, the other word as written with a long o.

SEEDS OF ODONTOGLOSSUM CRISPUM AND O. TRIUMPHANS: S. E. B. Wait till next spring before removing the pods, then sow the seed (much of which will have no vitality) on the surface of the compost in which the mother plants are growing, and let it receive the same kind of treatment. If any should grow, let the plants remain undisturbed till a pair of true leaves are made, then put them into thimble pots.

SOWING OF SEEDS OF LILIIUM, IRIS, ANTHERICUM: S. E. B. Sow in finely-sifted sandy loam and peat, and cover the seeds with mould to the same depth as the lateral diameter of the same. Use well-drained deep pans, and keep in a cool pit or frost-proof frame away from direct sunlight, covering each pan with a piece of tile or slate. The pans if well watered when sown, will not require water oftener than once a month, perhaps seldom. See that the surface of the soil is kept free from mouldiness and moss. When germination takes place, put the pans where they get a certain amount of light, and in a week give them full exposure to it.

STACHYS: Enquirer. *Stachys affinis* and *S. tuberosa* are one and the same.

TOMATOS: C. P. The plants and fruits are attacked by *Cladosporium fulvum*. See *Gardeners' Chronicle*, p. 532, October 29, 1887. Burn every vestige of the diseased plants.

VIOLET: Subscriber. Seems to be the ordinary Russian Violet.

WILD CHERRY: N. J. C. The galls on the leaves are the work of a mite, probably a species of *Phytoptus*.

COMMUNICATIONS RECEIVED.—F. H.—J. W. (next week).—A. W.—A. W. W.—W. C. R.—Imrie Bros. (next week).—W. L.—R. M. (next week).—J. M.—H. B.—J. D. S., Baltimore.—G. C.—J. D.—W. M.—F. V. D.—C. H. F.—Crépin.—Alpha.—R. M.—Inquirer. Ross, next week.—C. M. C.—H. T. S.—A. D.—H. J. Veitch.—F. V. D.—Anderson.—W. Collins.—W. B. H.—T. H. S.—S. J.—G. F.—J. P.—R. D.—T. C.—J. C. M.—J. S.—E. M.—J. O. B.—Wild Rose.—T. H.—C. Beranek (next week).

PHOTOGRAPHS RECEIVED WITH THANKS.—F. Roemer, Ould-Rinburn.—J. Whitehead.—G. M. J.—James Carter & Co.—F. V. D.—W. O.

MARRIAGE.—On Wednesday, September 14, at St. George's, Hanover Square, SIDNEY DENSON, of the firm of S. Denson & Co., Wholesale Florist, of Covent Garden and Maida Vale, W., to FRANCES HELEN PRATT, of 46, Clarges Street, W.

DON'T DIE IN THE HOUSE.—"Rough on Rats" clears out Rats, Mice, Cockroaches, Water Bugs, Flies, Beetles, Moths, Ants, Bed-bugs, Flea Lice, Insects, Potato Bugs, Sparrows, Skunks, Weasels, Moles, Musk Rats, Rabbits, Squirrels. 7d. and 1s. boxes, at Chemists. "Rough on Corns," gives instant relief. 8d. at Chemists.

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LARGE and CHOICE SPECIMENS for SALE.—Pair Araucaria excelsa, 6 feet; Agave americana, 6 feet; four Agave americana variegata, 4 to 5 feet; Dendrobium Griffithianum, true, twenty-one growths, 12-inch pot; Nepenthes Masteriana, 15-inch basket, fifty pots; Amaryllis, various large Bulbs, Musa ensata, strong suckers; also collection of established Orchids. No reasonable offer refused. In perfect health and condition. JOHN BURNS, Grove Hill, Middlesbrough.

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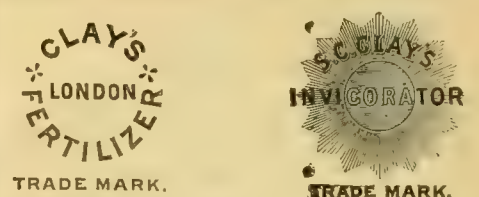
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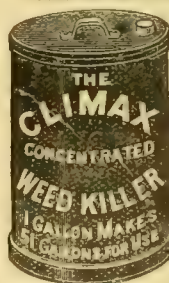
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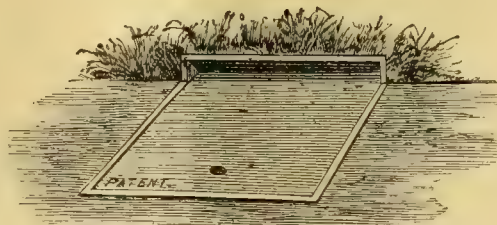
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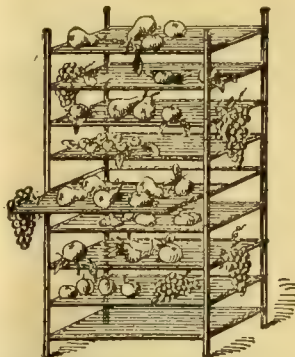
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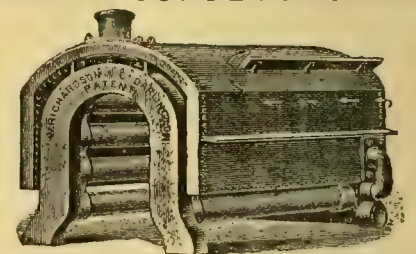
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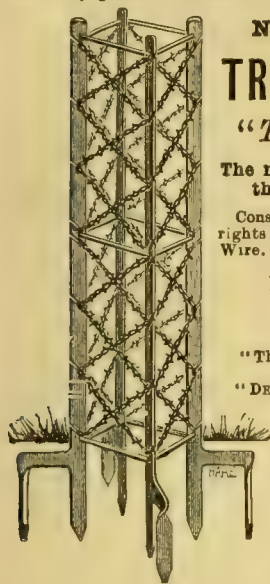
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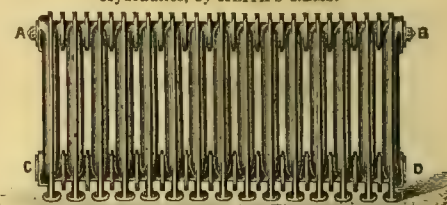
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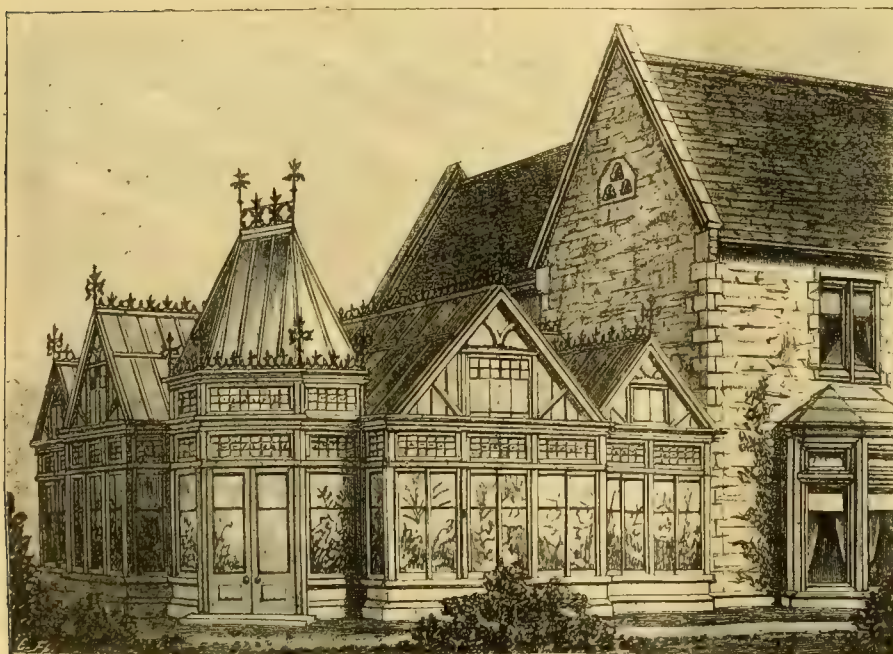


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VIOLAS (Tufted Pansies).—Our Collection is unrivalled. 100 cuttings, in 25 best sorts, 7s. 6d.; 50 cuttings, in 25 sorts, 4s. 6d.; 26 cuttings, in 13 sorts, 2s. 6d. Prices of plants on application. DOBBIE AND CO., Florists, Rothesay.

JULES DE COCK, Nurseryman, Ledeburg, near Ghent, offers in best Plants, 3000 Aspidistra, green or var., at £3, £3, £10 per 100; 28,000 Azalea indica, at £1, £5, £8, £5 per 100; 2500 Ficus elastica, at £3 and £4 per 100. Satisfactory references, or cash with order, for unknown persons.

FOR SALE, 60,000 strong one-year Whinham's Industry GOOSEBERRY BUSHES. Price on application. W. HUNTER, Tyne Green, Hexham.

THE COLORADO BLUE SPRUCE, PICEA PUNGENS GLAUCA. Handsome specimens, 2, 3, 4, 5, and 6 feet high. These are all of the *Bluest* type, and undoubtedly the finest Plants in Commerce. They are all Seedlings, the plants usually met with being grafted on the Common Spruce Fir. ANTHONY WATERER, Knapp Hill Nursery, Woking, Surrey.

BORDER CARNATION. (Ketton Rose).—The best rose-coloured Border Variety; perfectly hardy; very free in flowering; fine strong Layers. Price on application to W. H. DIVERS, Ketton Hall Gardens, Stamford.

CARNATION Mrs. Reynolds Hole, the popular terra cotta, strong rooted layers, 25s. per 100; £10 10s. per 1000. Cash. CRANE AND CLARKE, Hillside Nursery, March, Cambs.

LOVEL'S YORKSHIRE STRAWBERRIES. Well-rooted runners of Thury, Paxton, President, and others: 25, 1s.; 100, 3s. 6d.; 1000, 25s.; all carriage paid. LIST free. W. LOVEL AND SON, Strawberry Growers, Driffield.

FERNS! FERNS!!—Trade.—Greenhouse and Stove, 25 saleable sorts, 12s. per 100; out of pots, at 10s. Strong Seedling Ferns, stores in variety, 6s. per 100, 50s. per 1000. Large Adiantum cuneatum, Aralias, Cyperus, all in 48's, 6s. per dozen. Palms, Ficus, Hydrangeas, 1s. each. Large Ferns, 10 best sorts, 5s. 6d. per dozen, in 48's. Adiantum cuneatum and P. tremula, extra size, in 24-inch pots, 16s. and 20s. per 100. Packed free, Cash with Order. J. SMITH, London Fern Nurseries, Loughboro' Junction, S.W.

JOHN COLLINGRIDGE is open to receive Consignments of Choice CUT FLOWERS for SALE, on COMMISSION. Highest references. New Flower Market, and 5, Russell Court, Strand, W.C.

MESSRS. SQUELCH AND WOOD, FRUIT SALESMEN, North Row, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS OF GRAPES, TOMATOS, CUCUMBERS, and all kinds of HOT-HOUSE PRODUCE.

Our business connections being amongst the best houses in London, we are in a position to secure the highest prices for all choice goods. Account Sales forwarded daily and cheques weekly, or daily if required. Empties and labels supplied. Reference, London and County Bank, Covent Garden Branch.

DOUBLE NEAPOLITAN VIOLETS.—Magnificent, fine large clumps, just coming into flower. Will flower all the winter; 12s. per dozen; 2nd size, 9s. per dozen; good clumps, 6s. per dozen; Czar ditto, half above prices: Cash.—FOREMAN, Stanmore Park Gardens, Stanmore.

WANTED, offers of ONION "Ailsa Craig," large sound bulbs, true stock; size, weight, and price to be stated. Also Superlative RASPBERRY. V. S., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED, a few thousands of Golden Gem CALCEOLARIA CUTTINGS. Quantity and Price to HOWES AND SON, Blackstock Road, Finsbury Park, N.

SUTTON'S HYACINTHS, for Pots and Glasses.—Sutton's Collection of 50 Named HYACINTHS, in 50 very choice sorts. Price 42s., carriage free.—Mr. J. ALEXANDER, Gardener to F. R. Crowder, Esq., says:—"The fifty named Hyacinths were the best I ever saw."

SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

GAILLARDIAS, Crimson and Yellow; Perennial White LUPINE, grand; PENTSTEMON TORREYI, coral red; SCABIOSA CAUCASICA, lilac blue; Mrs. Sinkins PINK, large white; PAPAVER BRACCEATA, crimson—a fine lot of strong plants, at 4s. per dozen, or 5d. each. WHITE PHLOX, Joan of Arc, 3s. per dozen. LIST. W. R. GILES, Highland Flower Farm, Leatherhead.

STRAWBERRY PLANTS.—Laxton's Noble and Sir Joseph Paxton, 4s. per 100; 30s. per 1000. RASPBERRY CANES.—Baumforth Seedling and Semper Fidelis, 7s. per 100; 50s. per 1000. Norwich Wonder and Fastolf, 4s. 6d. per 100; 35s. per 1000. DUTCH RED CURRANT TREES (strong 3-yr. old), 2s. 6d. per dozen; 10s. per 100. All carriage paid. Post-office Order with order. R. H. BATH, Osborne Farm, Wisbech.

Fruit Trees a Specialty.

STRAWBERRIES, one of the largest and best collections in the Trade, including all the best of the New and Old Varieties. Full Descriptive Catalogue on application.

FRUIT TREES of all kinds, a very large stock. JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

100,000 DAFFODILS, SNOWDROPS, NARCISSUS, &c.—Daffodils, double, extra fine, 35s.; singles, 10s. Snowdrops, double, best, 16s.; seconds, 8s.; single, best, 15s.; seconds, 8s.; small, 3s. Aconites, 10s.; stars, 10s. Scillas, blue, 10s.; rose, 15s.; Pheasant's Eye, best, 10s. and 4s.; Double White, 16s., 12s., and 5s. per 1000. Narcissus, ornatus, best, 3s.; Burbidgii, 4s.; Aurantiaca, fl. pl., 4s., 3s., and 1s. Orange Phoenix, 5s.; Horsfieldii, 20s.; Jonquilla, sweet-scented, 1s. 6d. Lilium candidum, 5s. p. 100. All English-grown, good roots, sure to please. Cash with order. Lists gratis. G. YORKE, Bulbist, Retford.

Trade Offer of Large Palms.

W. ICETON has a large Stock of the leading kinds of Decorative PALMS from 6 to 25 feet high, fit for Conservatory and House Decorations; Dracaenas, Bamboos, and Foliage Plants. Lowest Prices quoted on application. W. ICETON, Putney, S.W.

Dutch and Other Bulbs.

DICKSON AND ROBINSON

offer, in first-size Bulbs, and of unexcelled quality:—HYACINTHS, named, for Pots or Glasses, from 4s. per dozen. HYACINTHS, distinct colours, for Bedding, from 16s. per 100. HYACINTHS, mixed shades, for Bedding, 14s. per 100. TULIPS, named, Single and Double, from 4s. per 100. NARCISSUS, named, best varieties, from 2s. per 100. CROCUS, Scillas, Snowdrops, Freesias, Iris, &c., &c. Carriage Paid. Descriptive CATALOGUE on application. Seed Warehouse, 12, Old Millgate, Manchester.

Boulton & Paul's Outdoor Requisites.

BOULTON AND PAUL,

MANUFACTURERS, NORWICH.

Every Requisite for the Kennel and Poultry Yard, Aviaries, Pigeon Cotes, Pheasantries. Requisites for the Garden, Park, Pleasure Grounds. Wire Netting for Game and Sheep. Iron and Wire Fencing, Gates, &c.

Send for Illustrated CATALOGUES, post-free, on application.

J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 10, Victoria Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers.

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheap-side, London, E.C. EVERY DAY, at 12 o'clock, large consignments of first-class

HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland. Lotted to suit the Trade and Private Buyers. 12 lots are sold every week.

On view morning of Sale, and Catalogues had.

Heaton Norris Nurseries, near Stockport and Manchester, ten minutes walk from Heaton Norris on the London and North Western line, Manchester to Crewe.

ABSOLUTE CLEARANCE SALE. Without Reserve, by order of Messrs G. and W. Yates, who are relinquishing this branch of the business in order to devote their whole attention to the sea-trade.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION on the Premises, the Nurseries, Green Lane, Heaton Norris, near Stockport and Manchester, on MONDAY NEXT, Oct. 3, and THREE FOLLOWING DAYS, at 12 o'clock precisely, the whole of the valuable NURSERY STOCK, covering 11 acres of ground comprising 5900 Ornamental Flowering and Foliage TREES and SHRUBS, 6000 Hybrid and Named RHODODENDRONS, including Waterers' and other exhibition varieties, these being a specialty; RHODODENDRON STOODS full of layers; 6000 CONIFERS and Evergreen BORDER SHRUBS; 7000 fine HOLLIES, including many specimens 3 to 6 feet; 0000 FRUIT and ORNAMENTAL TREES—30,000 Privet Hollies, and Quick for hedges; ROSES, IVIES, CLIMBERS, HERBACEOUS PLANTS, and OTHER STOCK.

Also eight span-roof GREENHOUSES, 40 to 60 feet long; 150 feet of FRAMES three BOLLERS, almost new; nearly 2000 feet of 4-inch PIPING, &c.

May be viewed. Catalogues had on the Premises, at the Seed Warehouse, 28, Market Place, Manchester, and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

N.B.—THE LAND, about 10 acres, TO BE LET, rent £3 per acre. The Nurseries are only 6 miles from Manchester. There is a good opening for anyone wishing to embark into the nursery business. The incoming tenant would have the opportunity of purchasing at the sale such stock as he might require at Auction prices.

Friday Next.

GREAT IMPORTATIONS.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheap-side, London, E.C., on FRIDAY NEXT, October 7, at half-past 12 o'clock precisely, by order of Mr. F. Sanders, St. Albans, the finest Importation of the true

ONCIDIUM AMPLIATUM MAJUS

which ever reached Europe.

MASSIVE ENORMOUS, CONDITION PERFECT.

MANY NEW ORCHIDS, such as

NEW BRASSAVOLA, NEW CATLEYA, NEW SOBRALIA, NEW MAXILLARIA, NEW ZYGOPETALUM, NEW CYPRIPEDIUM.

The Sale will also include a grand lot of CATLEYA AGLANDIE of the finest forms

A grand lot of CYPRIPEDIUM VIVIPARUM and CYPRIPEDIUM GODEFROYE LUCUCHILUM. Also a CYPRIPEDIUM SPECIES not known to us. A fine NEW SOBRALIA in the way of XANTHOLOEA. A grand Importation of ZYGOPETALUM STENOCHILUM, probably the finest of the genus.

A splendid lot of ANETHOCHILUS, quantities of LELIA FLAVA, several new ONCIDIUMS, and many other rare and valuable ORCHIDS.

On view morning of Sale, and Catalogues had.

Brixton, S.W.

SALE of well-grown NURSERY STOCK, especially adapted for the London Suburb, by order of Messrs. Ponsford & Son.

IMPORTANT to the TRADE and PRIVATE BUYERS.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Loughborough Park Nursery, Brixton, S.W., 5 minutes walk from the Loughborough Park Railway Station, on FRIDAY NEXT, October 7, at 12 o'clock precisely, in consequence of the number of Lots, 7000 Variegated and Green Euonymus, 4000 oval-leaved Privet, Evergreen and Flowering Shrubs in great variety, large quantities of Forest Trees, 5000 Aucubas, 2000 Ivies in Pots, 2000 Standard and Young Malberries (a special feature at this Nursery), 500 Ampelopsis Veitchii, and other Hardy Climbers in Pots, 7000 fine Standard Planes and Limes 5000 Pines in variety, in 32, 48, and 60-pots consisting of Kentias, Latanias, and others, Azaleas, Camellias, a number of Specimen Plants, suitable for furnishing, Shrubs in Pots for Window Decoration, and other Stock.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheap-side, London, E.C.

East Dulwich Disolution of Partnership EXTENSIVE ORCHID SALE, WITHOUT RESERVE, by Order of Messrs. Seeger & Trapp, Limited.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Orchid Nurseries, 112, Lordship Lane, East Dulwich, on WEDNESDAY NEXT, October 5, at half-past 12 o'clock, a large quantity of ESTABLISHED and OTHER ORCHIDS, a grand group of 100 VANDAS, unflowered varieties of TRICOLOR and NAUAS, CATLEYAS, CYPRIPEDIUMS, ODONTOGLOSSUMS, DENDROBIUMS, a few plants of GRAMMATOPHYLLUM SEEGERIAUM, &c.

On view. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Chilwell Nurseries, Chilwell, Notts.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. R. Pearson & Sons to **SELL** by AUCTION, on the Premises as above, on THURSDAY, NEXT, October 6, at 12 o'clock precisely, a large quantity of GENERAL NURSERY STOCK, recently transplanted and beautifully grown, including 1000 splendid Golden Yews, 1 to 4 feet, every one a perfect specimen from ground to point, and as much through the base as they are high. The whole will be sold absolutely without reserve, as the ground is to be sold immediately after possession in March.

Special trains run to Nottingham from all parts of the kingdom on day of sale, it being the celebrated Goose Fair. Boston Station for the Nurseries is 3½ miles from Nottingham. May be viewed. Catalogues may be obtained on the Premises and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Woking, Surrey.

A short distance from the Woking Railway Station. UNUSUALLY IMPORTANT FIVE DAYS' UNRESERVED SALE

Of exceptionally well-grown and rooted NURSERY STOCK, in the finest possible condition for transplanting, and embracing the most important lot of Stock offered by Auction for many years, the quality of which is unsurpassed in the Trade, by order of the Trustees of the late Mr. George Jackman, the land being required for Building.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Woking Nurseries, Woking, Surrey, on MONDAY, October 10, and four following days, commencing at 12 o'clock precisely each day, several acres of exceptionally well-grown

NURSERY STOCK,

The whole of which is in the best possible condition for removal; comprising—10,000 CONIFERS, 3 to 9 feet, amongst them numerous fine specimens.

Thousands of smaller EVERGREENS and CONIFERS, for Potting, &c. 1000 BOX, in variety.

10,000 Green and Variegated HOLLIES, 1 to 5 feet.

3000 LAURELS, of sorts, 1 to 5 feet. PORTUGAL LAURELS.

5000 Named RHODODENDRONS, Hybrids, &c., 1 to 3 ft.

A fine collection of ORNAMENTAL DECIDUOUS TREES,

comprising Maples, Thorns, Almonds, Peaches, Planes, Poplars, &c., 7 to 10 feet.

1000 LIMES, 5 to 10 feet.

FOREST TREES in great quantities; amongst them several thousands of Sycamores, Oaks, Beech, Spruce, Limes, Poplars, &c.

5000 Common ASH 2 to 5 feet. 40,000 Q'TICK, 1 to 2½ feet.

20,000 ST. JOHN'S WORT.

A splendid collection of ORNAMENTAL TREES, for Park and Avenue Planting,

10 to 20 feet, including Horse Chestnuts, Purple Beech, Scarlet Oaks, Limes, Planes, Sycamores, Maples, Elms, Poplars in variety, &c.

25,000 FRUIT TREES, comprising Standard, Feathered, and single Core ones, Apples, Pears, Plums, and Damsons.

3000 Standard and Feathered Flowering Almonds, Peaches, Prunus, Pissardi, and other Stock.

The Auctioneers have personally inspected the Stock, and desire to call the attention of intending purchasers to this important Sale. It is undoubtedly the most important Auction of Nursery Stock held for many years, and an inspection will well repay a visit by those contemplating planting during the season.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises, or of the Auctioneers, Land Agents, and Valuers, 67 and 68, Cheap-side, London, E.C.

Sunningdale.

A few minutes' walk from Sunningdale Station. THREE DAYS' ABSOLUTE CLEARANCE SALE, WITHOUT RESERVE

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. C. Noble, to **SELL** by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on WEDNESDAY, October 19, and TWO FOLLOWING DAYS, at 12 o'clock precisely, a choice Assortment of beautifully-grown NURSERY STOCK, including Standard and Bush Rhododendrons of the best named kinds, Hybrid ponticum and other Rhododendrons, 2000 Azalea pontica, 4000 Aucubas, 2500 Portugal Laurels, 15,000 Conifers in various sizes, comprising 4000 Thuja americana, 3 to 6 feet, fine for hedges and planting; 4000 Thuja Lobbi, 3 to 7 feet; 2000 Spruce Firs, 1½ to 2 feet; 6500 Berberis; 6000 oval-leaved Privet; 8500 Limes and Planes, 6 to 10 feet, fine and straight trees, particularly suitable for Avenue, Park, or Street Planting; many thousands of Ornamental Trees for immediate effect, several thousands of Standard and Pyramid Fruit Trees, 200 Webb's Cob Nuts, Flowering Shrubs, Climbing Plants, and other STOCK.

Purchasers can arrange with Mr. NOBLE to lift and forward any Lots to all parts of the Kingdom at cost or labour incurred and material used.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Bagshot.—Preliminary Announcement.

By order of Messrs. John Waterer & Sons. **MESSRS. PROTHEROE AND MORRIS** will **SELL** by AUCTION, at the renowned American Nurseries, Bagshot, Surrey, on TUESDAY, November 8, and TWO FOLLOWING DAYS, large quantities of splendidly-grown NURSERY STOCK.

Descriptive particulars will duly appear.

Cliffe, near Rochester.

IMPORTANT TO FRUIT GROWERS, MARKET GARDENERS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, Cliffe, near Rochester, on WEDNESDAY, October 26,

100,000 FRUIT TREES,

comprising 35,000 one, two, and three-year old Apples, Pears, Plums, and Cherries; 1000 Lady Sudeley and Bismarck Apples; 5000 of the new dessert Apple, Beauty of Bath; 50,000 Baldwin Black Currants, 4000 Red Currants, 10,000 Bob and Lad Gooseberries, 5000 John Ruskin Strawberries, also Noble, and other varieties, in large and small pots; 45,000 Paxton, Noble, and John Ruskin Strawberries, from open ground; 20,000 three-year Connover's Cosmoal A-paragus roots, from French seed; 50,000 early Ralsham Cabbage plants, &c.

May be viewed. Catalogues may be obtained on the Premises, and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Worcester.

FIVE DAYS' ABSOLUTE CLEARANCE SALE of about 20 Acres of beautifully-grown NURSERY STOCK, carefully prepared for removal, by order of Messrs. Richard Smith & Co., a portion of their land in the City boundary being required for Building purposes. Important to Noblemen, Gentlemen, Landscape Gardeners, Nurserymen, and others engaged in Planting.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the St. John's Nurseries, Worcester, about 20 minutes' walk from the Worcester Railway Station, on MONDAY, October 17, and FOUR FOLLOWING DAYS, at 12 o'clock precisely each day, without reserve—

25,000 STANDARD and PYRAMID ORNAMENTAL TREES, 4 to 18 feet, in great variety; 2000 Prunus Pissardi; 3200 Purple Beech, best dark-leaved variety; 500 London Planes.

5000 FLOWERING SHRUBS in great variety.

12,000 SPECIMEN CONIFERS and EVERGREENS,

1½ to 12 feet high; 2000 Portugal Laurels; 1600 Gold and Silver Variegated Hollies, Standards and Pyramids; 2500 Golden Yews, grand plants.

Large quantities of fine Native LARCH, 2 to 4 feet.

Ash, Quick, and other FOREST TREES.

Thousands of FRUIT TREES, including Standard and Pyramid Pears, hundreds of Standard Victoria Plums, grand trees; Standard and Pyramid Damsons, Standard and Pyramid Apples, Black and Red Currants, Whitbams' Industry, Kespice, and other popular Gooseberries.

Several hundreds of fine Planting and Fruiting VINES.

Forcing ASPARAGUS

Thousands of TEA and NOISETTE ROSES, in pots, embracing the most popular plants.

Thousands of CLIMBERS, consisting of 100 Clematis Jackmanni, 100 Clematis in variety.

Berried AUCUBAS, in quantity, and other Stock.

Also 8 two-wheel TRUCKS, and 1 smaller do, suitable for Nurserymen and others.

The Auctioneers desire to call special attention to this highly important Sale. It is the first occasion on which an Auction has been held at these celebrated Nurseries, the necessity now arising solely on account of a portion of the ground having to be given up for building purposes; and the present Sale affords an exceptional opportunity to Noblemen, Gentlemen, and others desirous of acquiring large quantities of well-grown Nursery Stock.

Purchasers may arrange with Messrs. Smith & Co. to have their lots lifted and forwarded at the cost of labour incurred and material used. Luncheon provided each day at 11.30.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheap-side, London, E.C.

Matlock Moor, Derbyshire

GREAT SALE of RHODODENDRONS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Mainell & Co to **SELL** by AUCTION, at their Branch Establishment, known as the Matlock Moor Nurseries, Matlock Bridge, 1½ mile from Matlock Bridge Station, on WEDNESDAY, October 12, at 12 o'clock precisely, a portion of their extensive stock of TRANSPLANTED RHODODENDRONS,

comprising Seedlings from the common hybrids, and also from the finest named sorts the size being from two years bedded up to 2 feet high. All have been regularly transplanted, and are bushy, stocky stuff such as can be confidently recommended to intending purchasers. Being grown on one of the highest of the Derbyshire hills, the growth is sturdy, and they are sure to succeed anywhere.

Also, by samples, 60,000 TRANSPLANTED COMMON ASH, in various sizes. The Stock will be offered in large lots, to suit the Trade and extensive buyers.

May be viewed. Catalogue may be had on the Premises; and of the Auctioneers, 67 and 68, Cheap-side, London, E.C.

Monday and Thursday Next. Plant Sales.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheap-side, E.C., as follows, at 12 o'clock each day: MONDAY, October 3, 100 AZALEA INDICA, 100 AZALEA MOLLISS, 50 FICUS, 100 DRACÆNAS, 200 PALMS from Belgium, good Plants; also CARNATIONS, FERNS, and a great variety of HARDY PLANTS and BULBS. THURSDAY, October 6, AZALEA INDICA and MOLLISS, from Belgium; 120 RHODODENDRON PONTICUM for potting, and BULBS from Holland.

On view morning of Sale, and Catalogues had.

Havant.—Absolute Clearance Sale, Final Portion.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, in the Premises, The Sea View Nurseries, Havant, on TUESDAY, October 18, at 12 o'clock, by order of Messrs. F. W. & Co., the whole of the REMAINING PORTION of the well grown NURSERY STOCK.

The Valuable Collection of Established Orchids and STOVE and GREENHOUSE PLANTS, formed by the late C. B. Powell, Esq.

MR. J. C. STEVENS has been favoured with instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., towards the END of OCTOBER, the valuable and well-grown collection of ESTABLISHED ORCHIDS formed by the late C. B. Powell, Esq., of Drinkstone Park, Bury St Edmunds, comprising amongst other fine things—

A Grand Plant of *SOBRALIA XANTHOLEUCA*, probably the finest in the Kingdom.

Magnificent specimens of rare *CYPRIPEDIUMS*, beautifully grown, a variety of choice *DENDROBIUMS*, *CATTLEYAS*, *ARIDIES*, *ODONTOGLOSSUMS*, *CALANTHES ELIAS* &c. In this Sale will be included the STOVE and GREENHOUSE PLANTS in Splendid Condition.

Further particulars in next Advertisement.

Wednesday Next.

A Consignment of 80 STOVE and GREENHOUSE PLANTS, received direct from Ghent, comprising *AZALEAS*, a great variety of *PALMS*, *ASPIDISTRAS*, *ARECAS*, *DRACENAS*, *FICUS ELASTICA*, *LAURUSTINUS*, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 5.

On view morning of Sale, and Catalogues had.

Thursday Next.

ESTABLISHED ORCHIDS, LILYBULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 6, at half past 12 o'clock precisely, a good Collection of ESTABLISHED ORCHIDS, many in Flower and Bud, Collection of STOVE and GREENHOUSE PLANTS, choice *AKKATHONS*, *PINKS*, *PIRIFERES*, Rare *NARCISSUS* and *DAFFODILS*, 7000 *LILY HARKNELL*, from Bermuda *LILI M. C. NIDUM*, 3000 *ANEMONE FULGENS*, 25,000 *ROMAN HYACINTHS*, Paper White and Double Roman *NARCISSUS*, and many other BULBS and ROOTS.

On view morning of Sale, and Catalogues had.

Thursday Next.

About 600 *CYPRIPEDIUM ORCHIDANUM*, NEW SPECIES. CONIGNED DIRECT FOR UNRESERVED SALE.

The plants, which are totally distinct from any yet in cultivation, were discovered on one of the small and hitherto unsearched islands in the seas of West Borneo, and its collector requests it to be named in honour of Mr. James O'Brien.

In habit the plant somewhat resembles *C. barbatum*, but its leaves are entirely green, or with a very obscure railing of dark green on a lighter green ground. The flowers are very quaint in structure, the upper sepal white with greenish rays at the base, petals white, tinged with rose at the tips, and spotted with red, labellum white and crimson. A drawing made from a flower which opened on the journey will be on view, but under cultivation it is expected that the plant will become much more beautiful.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 6. On view morning of Sale, and Catalogues had.

Choice Bulbs from Holland.

MR. J. C. STEVENS will SELL by AUCTION, every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice BULBS arriving daily from renowned Farms in Holland, in excellent condition, and suited to suit all buyers.

On view mornings of Sale, and Catalogues had.

Cart House Lane Nursery, Horsell.

About 1½ mile from Woking Station, on the London and South-Western Railway.

The exceptionally well-grown NURSERY STOCK (the whole of which has been moved within the last two years), including many fine specimen Plants, 5000 Standard and other Hollies, 1 to 8 feet; 3000 Yews, from 2½ to 6 feet; 10,000 Scotch Spruce, and other Firs, 2 to 5 feet; 10,000 Arborvitae, Thuja Lobni, Cupressus Lawsoniana and erecta, Abies Douglasii, 2 to 8 feet; quantity of Picus, Retinospora, Araucaria, Red Cedars, several thousand Rotundifolia, Caucasian, Portugal, and Common Laurels, 1 to 4 ft; 10,000 Ovalifolium, Common and Box-leaf Privet, 60,000 strong Quicks, 2 to 4 feet; many thousands of Flowering Trees, Border Shrubs in large quantities, several thousand Forest Trees, and 3000 Fruit Trees.

MESSRS. WATERER AND SONS, who are instructed by Mr. Richard Collyer, will SELL by AUCTION, on the Premises, on WEDNESDAY and THURSDAY, October 5 and 6, at 11 for 12 o'clock each day.

The Auctioneers have great confidence in drawing the special attention of Purchasers to this Sale the whole of the stock being well-rooted, and in perfect condition for removal.

May be viewed seven days prior to the Sale, and Catalogues obtained upon the Premises, and of the Auctioneers, at either of their offices, at Chertsey, Weybridge Station, and Walton-on-Thames.

Sale of Young Fruit Trees and Plants at Loveland's FARM, KINGSTON, near REIGATE, SURREY.

By order of Mr. Richard Binns. To clear the Ground.

MR. HARRIE STACEY will SELL the above, on the Premises, by AUCTION, on FRIDAY, October 21, at 11 for 12 o'clock, a choice selection, consisting of Czar and Victoria PLUMS, Early Juliana and other APPLES, Cox's Orange Pippins, Worcester Pearmain and Blenheim Orange; KASPERKIES, Black, Red, and White CHERRANTS, STRAWBERRY RUNNERS, Cox's Golden Drop PLUMS, and others.

Catalogues may be had of Mr. HARRIE STACEY, Auctioneer and Valuer, Reigate and Redhill.

Orchids from Ferniehurst, Shipley.

MESSRS. HEPPEL AND SONS are favoured with instructions from Edward Salt, Esq., of Ferniehurst, Shipley, to remove to their Rooms, East Parade, Leeds, for SALE by AUCTION, on Friday, October 7, commencing at 11 o'clock, the whole of his valuable Collection of ORCHIDS, and some fine STOVE PLANTS.

The ORCHIDS comprise:—*Dendrobium nobile Sanderiana*, about the first firm of the species; *D. Jamesianum*, &c.; *Masdevallia militaris*, fine and very rare species; *M. Harryana*, Drumming variety, Thomson's Scarlet, and special fine dark form; *M. tomentosa*, Veitchii, Davisi, and ignea; *Odontoglossum luteo-purpureum*, *hirsutum*, magnificent variety; *O. crispum*, fine varieties bought in flower; *O. Schillerianum*, rare; *O. Reichenheimi*, *Pescatorei*, *Rossi majus*, *Lindleyanum*, *ligulare*, *odoratum*, *striatum*, *Harrimanum*, *hastilabium*, &c.; *Cypripedium chautauqui*; *C. in igne albo-marginatum punctatum*, gran variety; *C. insigne*, spotted petals, Wallacei, and *Horsmanni*; *Celebre cristata*, Chatsworth and St Albans variety; *Laelia anceps Dawsoni*, *Williamst*, *Barkeriana*, autumnalis, alba, &c.; *Oncidium macranthum*, *virginum*, *Marshallianum flexuosum*, *aurorum*, *unguiculatum*, *Lox-nce*, &c.; *Cattleya citrina*; *Nanodes*, *Mecurei*, very rare; *Phalaenopsis violacea*; *Epidendrum vitellinum majus*, &c.

The STOVE PLANTS consist of a number of choice *Anthurums*, viz., *Scherzerianum Wardii* (Veitch), *S. atro-sanguineum*, *Andraeanum*, *Rothschildianum*, and *Pumilus*; *Imantophyllum minutum*, named varieties; and *Eucharis amazonica*, in 13-inch pots.

Catalogues may be had of the Auctioneers on and after the 24th inst., and the plants will be on view in the Sale Room during the afternoon previous to and on morning of Sale.

WANTED, a General SEED BUSINESS, PARTNERSHIP, or situation with view to Partnership, by an energetic single man (26). Can introduce capital. Provincial and London experience with high-class Firm. Repaid strictly confidential.

Address TRIFOLIUM, 41, Wellington Street, Strand, W.C.

WANTED, a NURSERY, within 12 miles of London, with small Dwelling-house, three or four Greenhouses, and about 4 acres of ground, suitable for growing Roses and Hardy Flowers. Near station on South Western Railway preferred.—G. D. ALBON, 27 Regent Street.

FLORISTS BUSINESS for DISPOSAL, by order of the Executors. Two Greenhouses, Forcing-pits, Horse and Cart Good Stock. Price £75. FRANK WOOLCOCK, Land Agent, Kingston-on-Thames.

FOR SALE, a NURSERY—2½ acres, Six Glass-houses, ten-roomed House, and other buildings. One mile from Railway and thirty miles from London. Apply to Mr. SMITH, 1, Offa Terrace, Alma Road, St. Albans.

FOR SALE—FREEHOLD FRUIT and FLOWER NURSERY, on South Coast; noted Fruit-growing District, comprising 400 feet run of Glass-houses Thoroughly heated and built to grow Cucumbers, Tomatoes, and Grapes; Vines now in full bearing; every modern convenience. Satisfactory reasons for disposal. Price, with growing Crops and Stock £2200; part of purchase-money can remain.—F. H. GARDENERS' Chronicle Office, 41, Wellington Street, Strand, W.C.

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TO MARKET GARDENERS' FRUITERS, and OTHERS. TO BE SOLD, by Private Contract, or LET, the ORCHARD, GARDEN, GLASSHOUSES, and Premises belonging to the late Mr. John Vincent, Winsover Road, Spalding. The Property comprises a comfortable Dwelling-house, with stable, Cart-house, Store-houses, and Granary, two Cottages, Hothouse, Greenhouse, Roastery, and three long ranges of Cucumber and Tomato-houses, all fitted with Heating Apparatus complete. The Garden and Orchard adjoining contain about 5 acres of most productive land, and planted with Fruit Trees and Gooseberries, now in full bearing. The Property is Freehold and Title-free, and is most conveniently situated, near to the Spalding Station of the Great Northern, Great Eastern, and Midland Railways.

Possession may be had at Christmas next.

To view the property, and for further particulars, apply to Messrs. S. AND G. KINGSTON, Auctioneers, Valuers, and Land Agents, Spalding.

To Nurserymen, Florists, &c.

SUBSTANTIAL NURSERY PREMISES to be DISPOSED OF, by Executors, constructed at great cost, at a nominal premium. The Premises are in working order and comprise Greenhouses, Dwelling-house, Gardener's Cottage, Stabling, &c. About 6 miles from Covent Garden, London.

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MR. MALCOLM SEARLE is instructed by Mr. R. Clarke, of Pope's Grove, Twickenham, S.W., after an occupation of forty years, TO LET or SELL the famous 3 acres of LAND, well stocked with Choice Standard and Wall Fruit Trees and Bushes, with Residence, Cottages, Outbuildings, Forcing Houses, and Pits.

A valuable Plot of BUILDING LAND, adjoining, is also for SALE. Worth attention.

Apply, personally, at 9, Martin's Lane, Cannon Street, City, E.C.

FOR SALE, a compact, attractive, old-established NURSERY, SEEDSMEN, and FLORISTS' BUSINESS (including Retail Shop); several Greenhouses, comprising 4000 square feet of glass, well-heated, &c. Magnificent opportunity. Only Nursery in seaside town of 40,000 inhabitants. Within easy run of London.

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TO BE LET or SOLD, a convenient NURSERY GROUND, with two large Greenhouses, Boiler-house, and Ornamental Pond, in all about 4 Acres half under cultivation. Room for dwelling-house; near railway station, close to good main road; within 5 miles of Bristol. Stock on ground to be taken at valuation.

Apply, CLEMENT GARDINER, 14, John Street, Bristol.

Conservatories.—Great Bargains.

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LAXTON'S STRAWBERRIES.—Sensation, very large, fine flavour; Scarlet Queen, first early, best new; Noble, Competitor, Latest of All, Commander, White Knight, J. Ruskin, Waterloo, and all best sorts. Lists free. T. LAXTON, Seed Grower, Bedford.

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Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS,

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Special Quotations to the Trade.

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PH. MAYFARTH AND CO. beg to notify that their "AMERICAN" EVAPORATOR may be SEEN at WORK on October 5 and 6, between 10 A.M. and 4.30 P.M., at the Royal Horticultural Society's Gardens, Chiswick, W., by all interested. Various kinds of fruit will be dried. See *Gardeners' Chronicle*, September 3, p. 279, and September 10, p. 308.

PH. MAYFARTH AND CO., 16, Mincing Lane, London, E.C.

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ADIANTUM CAPILLUS-VENERIS IMBRICATUM
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This splendid NEW FERN is a decided acquisition, being quite equal in appearance to A. Farleyense, with the hardness of A. Capillus-veneris.

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This favourite first early Potato, suitable for any Garden, indispensable for Forcing and Early Borders, and likely to take the first rank amongst first earlies for market use. Quality and yield all that could be desired. One well-known market grower has this year had a yield of 15 tons per acre on a large acreage. London and Manchester salesmen speak highly of their quality, and report that Victors will keep their bloom and have a fresh appearance after being in the market some days, when other early Potatoes have become discoloured and unsaleable.

The stock we offer is the true yellow-fleshed variety and not the white variety, which is often substituted.

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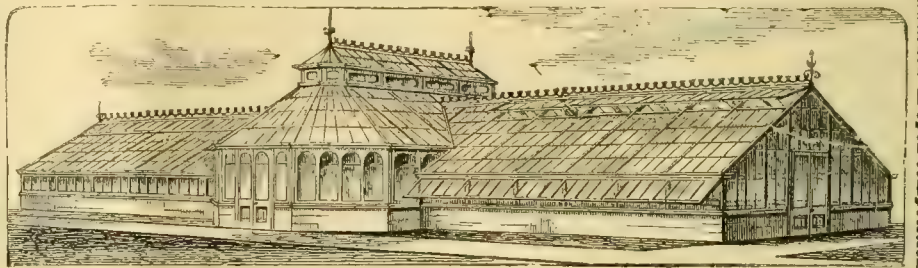
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Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

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Timber sufficient to build 100 feet by 12 feet house, lights, door, &c. Put on rail in London. Price, £9 10s. Send for detailed specification, to

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BEST VARIETY.

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CATTLEYA TRIANÆ, best variety, £8 per case.

Each case contains from fifty to sixty good, strong pieces, and measures about 20 inches by 34 inches.

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**THE AUTUMN EXHIBITION OF CHRYS-
ANTHEMUMS AND TABLE DECORATIONS** will be
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Schedules of Prizes on application to
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John Fraser, Esq., of Lea Bridge, will preside.
Tickets, 5s. each, may be had of the Secretary, W. COLLINS,
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15 HEALTHY PHALÆNOPSIS: Schilleri-
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EUONYMUS (50,000), Green and Golden.—
Green: 9 in. to 12 in., at 25s. per 100; 12 in. to 15 in.,
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to 12 in., at 4s. to 9s. per dozen. Cash with Order.
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POT VINES, finer than ever, clean, short-
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GOLDEN EUONYMUS, good bushy stuff,
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ALOES.—A pair of very handsome, variegated
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The following Catalogues free on application:—
Catalogue of beautiful flowering Bulbs for all seasons.
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List of rare and beautiful Croci and Meadow Safrons.
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Hyacinths, Tulips, Crocus, Daffodils, Iris, Peonies, Lilies, &c.
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Lowest price, 40s. per 100, or 8s. by the dozen. Cheap; a
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50 fine young FRUITING TREES, chiefly Pears. Room is re-
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**PRIZE PANSY PLANTS, for early Spring
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CARNATIONS, strong plants, at same prices. Carriage paid,
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FOR SALE, CHEAP.—Dicksonia antarctica,
4 feet stem; Dicksonia squarrosa, 2 feet; Pandanus
Veitchii, 6 feet by 4 feet; Maranta zebra, 3 feet; Maranta
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others, all in good condition. Apply—
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LONDON PLANES.—Large Stock, very fine
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high, and all other leading kinds of Standard Trees suitable for
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IRISH IVIES in pots, 3 feet to 12 feet.
SHRUBS, TREES, ROSES, FRUIT TREES, CLIMBERS,
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Descriptive Priced LIST free, also of BULBS, SEEDS,
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W. FROMOW and SONS, Sutton Court Nurseries, Chis-
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Established 1829.

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FRUIT TREES.—80,000 very choicest kinds.
Apples, Pears, Cherries, Peaches, Filberts, and Plums;
20,000 noble, tall, standard Victoria Plums and Damsons, 4 and
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 1, 1892.

EDGE HALL.

THERE have been Dods of Edge ever since the time of Henry II., and judging from the name, even as far back as Saxon times. Anthony Dod was one of the glorious few with Henry V. at Agincourt, and was made Sir Anthony on the field. The present proprietor, so well known to your readers, has, metaphorically, changed the sword for the pruning-hook, and become equally eminent as a man of peace.

I am not going to attempt to describe Mr. Dod's garden—that would require a specialist in hardy flowers; and the few plants I am going to mention form but a very small fraction of what is rather rare, beautiful, or well cultivated. The house is a low rambling, Ivy-clad stone house, which looks very home-like, with the lovely, quaint, old fashioned flower-garden embracing it lovingly on three sides. On the side where the drive comes up to the house, there is a lawn with raised rocky beds, where alpine and rock-loving plants are grown; it is very pretty to see some delicate little flower like the Androsace peeping out from between two rocks. One is also filled with wonder how Mr. Dod makes so many things to succeed in spite of soil and climate, both of which, so far north as he is, are often malicious enemies.

The garden proper is very cunningly devised to show its treasures gradually by reason of a wall and devious paths and tracks. The great quality about it is what one might call the nook quality, and there is one corner where the garden presents the most glorious glow of colour, it would defy even the brush of Mr. Alfred Parsons to paint it, or the pen of Mr. Ruskin to describe it. Two plants must attract the attention of every flower-loving stranger whom Mr. Dod takes in. I am afraid there are too many of these. They are Gypsophila paniculata and Geranium Wallchianum. The secret of cultivating the first-mentioned beautiful plant is evidently understood here. One was as large as a fair-sized shrub, and was completely draped with its gauze-like diffuse panicles of snow-white flowers. The Nepalese Geranium was very rampant, and its delicate sky-blue blossoms were produced in lavish profusion.

There were many other species of Geranium in flower, including the prettily-veined striatum, and nearly as many of Campanula. Other plants that caught one's attention were the Spanish Sedum maximum, Rudbeckia rosea, and the various Lythrums and Polygonums. In the rockwork Ramondias grow like weeds, and the Cyclamens brighten every shady corner. The Lenten Roses thrive, but not so the Christmas.

Another interesting feature of the garden at the present time is the autumn Crocuses and Colchicums. Tufts of these are flowering by the sides of the walks. *Colchicum Parkinsoni* and *C. speciosum* are very pretty species.

Herbaceous plants which flower in the autumn are generally speaking taller than the earlier sorts, they have had all the best growing weather in which to lay in a store of food for flower and fruit as well as foliage, and have not been interrupted in their upward growth by early formation of flowers. Standing at this time of the year in the old vegetable garden at Edge Hall, now full of flowering plants, it seems as if most of the plants were about 6 feet high. There is *Spiraea kamschatika*, 8 feet high, with clusters of pendulous, but not showy yellowish flowers; *Silphium laciniatum*, the Compass Plant, 5 feet high, flowers pale lemon-yellow, with large coarse leaves. The leaves of this plant are not only vertical when exposed to light, back and front of leaf being of the same structure, and presenting same deep green colour, but they place themselves in a vertical plane, which more or less coincides with the meridian of the locality whence they derive their name of Compass Plants of the Prairies. The vertical position is only assumed in a sunny spot; in the shade, they tend to become horizontal. The mode of reading these "compasses" is said to be a "perfectly easy thing when you are used to it."

Phloxes, *Helianthus*, and *Asters* are just now very showy. *Aster Thompsoni*, a plant about 3 feet high, and as much through, densely covered with pale lilac flowers. *Anthemis tinctoria*, growing by a hedge in a thick mass, is very bright. Growing in the shade of a Spruce, we saw some bright flowers of the hardy *Cyclamen*, they seem to flourish in the dead pine-needles; they have no competitors, for very few things can grow in such a situation.

Besides the *Michaelmas Daisies*, blue tints are furnished by *Eryngium*, *Echinops*, *Catananche corulea*, and *Gentiana acaulepis*, not bright certainly, but with a charm peculiarly their own.

Potentilla nepalensis is a pretty plant not often seen, flowers rich pink with darker centre. *Hypericum Kalmianum* is a distinct St. John's Wort, with abundant clusters of bright yellow flowers. *Hypericum reptans*, a creeping St. John's Wort, and *Sedum trifidum*, with pink leaves, both from the Himalayas, are now in flower. *Omphalodes Lucilise*, a dwarf rare plant with pale metallic-blue flowers, and *Salvia hians*, a sage with peculiar purple flowers, are both pretty plants. *Boltonia asteroides* is graceful, with Aster-like lilac flowers. The familiar *Anemone japonica alba* has here assumed a curious aspect, the leaves being curled like coarse Parsley; but these mis-shapen leaves are not accompanied by flowers. *Heliopsis scabra* is a rich yellow Composite. *Tunica saxifraga* forms a nice tuft of pink feather-flowers. Growing in a large pan is a mass of *Parnassia palustris*, very full of its interesting white flowers. All these together with many other interesting plants, seem to fill the available space, and make one wonder where the spring and summer blooming plants find room. In this garden, the plants' needs are considered first, the effect is only a secondary consideration.

NEW OR NOTEWORTHY PLANTS.

CALANTHE SANDERIANA, Rolfe, n. sp.*

This handsome *Calanthe* is a native of East Tropical Africa, whence it was introduced by Messrs. F. Sander & Co., of St. Albans, a short time ago. A plant was exhibited at a meeting of

* *Calanthe Sanderiana*, n. sp.—Terrestrial. Leaves tufted, petioles 6 to 8 inches long, blade elliptical-lanceolate, acuminate, 12 to 15 inches long, 4 to 5 inches broad. Scapes equalling or a little exceeding the leaves; racemes many-flowered. Bracts ovate-lanceolate, acuminate, 4 to 8 lines long. Sepals elliptical-lanceolate, acute, 10 to 12 lines long, 4 to 4½ lines broad. Petals obovate-lanceolate, acute, a little shorter and broader than the sepals, and, like them, pale lilac, shading off to lilac-purple at the margin. Lip as long as

the Royal Horticultural Society on August 9 last, and received an Award of Merit. It is allied to *C. natalensis*, Rehb. f., but has larger flowers, and a much deeper-coloured lip. The scape is a little taller than the leaves, and bears a raceme of numerous flowers. The sepals and petals are pale lilac, shading off to lilac-purple at the margin, and the lip rich deep purple, with some brown on the crest. The somewhat flattened spur is usually about 1½ inch long. Dried specimens were collected by Sir John Kirk, but the species does not appear to have been previously described, and the above name is therefore proposed for it, in honour of its introducer, Mr. Sander. It is a very attractive species, the dark purple lip forming an elegant contrast with the paler segments, and will doubtless prove as easy of cultivation as its allies. *R. A. Rolfe*.

CUSPARIA UNDULATA, Hemsl., n. sp.*

This shrub, or small tree, is a native of Brazil, and belongs to a small group of the *Rutaceæ* peculiar to tropical America. They are mostly small trees, of Palm-like habit, with unbranched stems, a crown of handsome foliage, and axillary racemes of usually showy flowers. The petals are more or less completely combined, in some quite fused, forming a vase-like corolla, characteristic of a totally different natural order. *Erythronchiton braziliense* is a very striking member of this group. *Cusparia undulata* is a plant worth growing for its ornamental foliage, although one of the least showy of its congeners. It is not unlike an *Aralia*, having palmately compound leaves with five leathery leaflets; and the white flowers, about three-quarters of an inch long, are borne in racemes from the axils of the leaves, which overtop them.

The history of this plant is unknown, though there is no doubt it is from Brazil, where several closely-allied species are at home. It flowered at Kew in 1886, and again this year. I may add, that *Cusparia* is united with *Galipea* in *Bentham and Hooker's Genera Plantarum*, but the discovery of several additional species since the publication of the part of the work dealing with the *Rutaceæ*, afford evidence that the differences are sufficient for generic separation. *W. B. H.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA BRYMERIANA ×.

PRESUMED to be a hybrid between *C. superba* and *C. Eldorado*, found in the Rio Negro district of Brazil. It was described by Reichenbach in our columns of 1883, pt. ii., p. 492, and is now figured in *Lindenia*, t. 343.

CYRTOPODIUM PUNCTATUM.

The very curious and beautiful *C. Saintlegerianum* of Reichenbach is now considered to be identical with the above-named species, which was known

the sepals, three-lobed; side lobes falcate-linear, 3 lines long; front lobe obovate-bilobed, 9 lines broad; disc with three prominent verrucose keels, of which the central one is the longest; spur somewhat flattened, 1 to 1½ inch long; colour of lip rich purple, with the basal part of the crest brown, and the spur lilac. Column short and stout, white. Native of East Tropical Africa. *R. A. R.*

* *Cusparia undulata*, Hemsl., nova species.—*C. tozifera* affinis differt foliis 5-foliolatis foliolis insigniter undulatis, floribus fasciculatis. Arbuscula simplicicaulis vel demum pauciramosa, apice tantum foliosa. Folia longe petiolata, digitatim 5-foliolata, cum petiolo usque ad 2 ped. longa; foliola distincte petiolulata, subcoriacea, minute punctata, lanceolata, inaequalia (ejusdem folii 5–12 poll. longa), vix acuta, basi cuneata, marginata, subtus pallidiora, primum obscurissime strigillosa, demum glabrescentia, nitida, petiolulis validis basi incrassatis primum lanatis; petiolulus 8–12 poll. longus, teres. Flores albi, subbilabiati, fasciculato-racemosi, circiter 9 lineas longi, brevissime pedicellati, racemis pedunculatis quam folia brevioribus; sepalis ovata, acuta, sesquilineam longa; petalis lineariblonga, obtusissima, intus extusque pubescentia, conniventia vel conglutinata nec connata; staminibus 3 superiora fertilia, filamentis extus ubique pilosis intus juxta antheras longius pilosis vel barbatis basi glutinosis et cum petalis agglutinatis; ovarium pilosum, in disco cupulato fere omnino immersum, 5-loculare. Fructus ignotus.

EPIDENDRUM WALLISII.

The racemes of this plant are terminal as well as lateral, the individual flowers fragrant, with golden yellow segments spotted with crimson, and a broad four-lobed white lip with radiating purple lines, and a yellow disc; native of New Granada; described by Reichenbach in these pages, 1875, pt. ii., p. 66, and now figured in *Lindenia*, t. 341.

CORYANTHES MACROCORYS.

A new species described by Mr. Rolfe, with Stanhopea-like flowers of a greenish-yellow spotted with reddish-brown. "The usual shape of the helmet in this strange genus is that of a rounded hollow pouch, rather broader than long. In the present species, this organ is elongated considerably longer than broad, placed close to and parallel with the ovary, and very fleshy." It is also quite destitute of hairs. The mesochil is much longer than usual, separating the helmet from the bucket by a distance of 1½ inch. It is figured in the *Lindenia*, t. 342.

THE CULTURE OF COCHINEAL IN TENERIFFE.

A VERY interesting account of cochineal cultivation in Teneriffe has recently appeared in a Foreign Office "Report on the Social and Economical Condition of the Canary Islands," from which we call the following:—The position of cochineal as a commercial product is stated to be next in importance to the Vine. The plant was originally brought to the Canaries in 1826, and met with great opposition from those who were afraid that this new and loathsome form of blight would spoil their Prickly Pears; in fact, in the previous century it was forbidden to land cochineal at all. Prejudice was overcome, and it was found that the Cactus, which grows freely in the islands, was best adapted to the insects' wants; also that the cheapness and the abundance of labour, and the climatic conditions, allowed it to be produced more plentifully and of better quality than in Mexico, Honduras, and Guatemala, the countries which had hitherto furnished the markets. As an indication of the progress cochineal made in the English market in the early part of the present century, it is stated that in 1814, 176,259 lb. were sold in London, at about £1 16s. per lb.; in 1820, 158,840 lb., at about £1 5s. 6d. per lb.; and in 1830, 297,985 lb. at about 10s. 6d. per lb. The first shipment from the Canaries was in 1831, and consisted of 8 lb., which in ten years had increased to 100,566 lb.; in 1850, to 782,670 lb.; in 1860, when fuchsine was first chemically known, to 2,500,000 lb.; and in 1869, to the highest total of 6,076,869 lb., with a value of £789,993. The population at that period, it is said, was 270,000, so that cochineal alone produced a revenue of about £3 5s. to every man, woman, and child in the place. All the aniline dyes were discovered by this time, but were not commercially manufactured to such an extent as to seriously interfere with cochineal. The islanders, however, became somewhat alarmed at the price, and began to talk about over-production, and the means of preventing it. In 1874, the crisis had reached a more acute stage, and the price in the London market went down to an extremely low point, and the cochineal industry suffered a collapse.

The manufacture of aniline dyes received a sudden impulse in 1879, owing to the tropical rains, which gave rise to rumours of a short cochineal crop, and caused the price to jump from 2.45 pesetas to 3.62 pesetas, and even more. The damage was exaggerated, but the evil was done. The merchants, who congratulated themselves upon the ready sale of their old stock at enhanced prices, were astounded,

and in most cases ultimately ruined by the fall which ensued, the best qualities of dried cochineal going as low as 10*d.* and 11*d.* per lb. Some recovery has taken place now that it is known that cochineal is, after all, the only red dye which satisfactorily resists hard wear and heavy rain, but the output for 1890 was only valued at £60,940. Though the value of the exports have fallen from £845,390 in 1869, yet

was able to gain as much as two pesetas a day, and his wife and children to find constant employment at equally remunerative rates. The merchant and shipper benefited, and the expenditure of all classes rose by leaps and bounds. Land was unpurchasable, and everyone wanted to buy. Crowds of dealers were only too glad to buy the cochineal, and to employ their capital or credit by storing it. The

The English have been reproached as being the only gainers by cochineal in the end. How this can be is not apparent. It is true that the dye was chiefly sold in London, but such is no longer the case. On the other hand, some of the furniture and saddlery still exists, though a little out of repair; the fields which were largely constructed on English capital have not vanished, and after all, it was not the fault of Great Britain, if extravagance and waste left nothing but a memory of better things, instead of a number of fat kine to tide over the somewhat dismal period to follow. Below a certain altitude Cactus was planted in every corner, so that grain and most necessaries were constantly imported, and the bewildered farmer found he must either root the Cactus up or starve. The cochineal growing as it did near the coast, caused a great area to be brought under cultivation which was formerly worthless; for instance, the slopes above Santa Cruz, in Teneriffe. The land so reclaimed, however, was not paid for when the collapse came, and left a load of debt, which greatly impeded development for years to come.

The land which owes its existence to cochineal is now largely planted with Tomatos, &c., and if ever it rises to the value of its original cost, it will be because of the fruit and vegetable trade, started and fostered by Englishmen, and maintained entirely by the English demand.

PTYCHORAPHIS AUGUSTA.

THIS is an elegant little stove Palm, which has been introduced to Kew this year from the Nicobar Islands. It is as graceful as *Cocos Weddelliana* or *Geonoma gracilis*, and it grows as freely under cultivation as either of these popular Palms. Nurserymen and others interested in Palms would, I believe, find it worth while to introduce this *Ptychoraphis* in quantity, and the following information may serve to put them on the scent.

Kurz, writing in the *Journal of Botany* in 1875, of some plants of the Nicobar Islands, says of this Palm:—"One of the most conspicuous features of the Nicobarese vegetation is *Areca Augusta*. It pushes its head above the highest forest trees, and forms, so to say, a Palm forest above the true forest, rendering thus the aspect of the landscape more Brazilian than Indian. It is frequent all over the so-called northern group, while it becomes scarce in the southern group." He also states that it seeds abundantly, each tree yielding about a maund of fruits yearly. It forms a slender tree 80 to 100 feet high, the smooth annulated trunk only a foot in diameter. The leaves ultimately become 8 to 12 feet long; the pinnae, 2 to 3 feet, narrow-linear, acuminate, bright green. The fruits and seeds, of which figures are given in the accompanying picture, are elliptical oblong, red when ripe, a groove, similar to that of the Date-stone running along one side of the seed, the albumen of which is ruminated as in a Nutmeg. A quantity of the seeds have recently been distributed from Kew.

The genus *Ptychoraphis* was created by Beccari, and comprises only three species, all Malayan. It is allied to *Ptychosperma* and *Pinanga*.

A second species of *Ptychoraphis*, viz., *P. singaporensis*, also called *Ptychosperma*, is also in cultivation at Kew, and the third one is the plant which has lately been distributed as *Rhopaloblaste hexandra*.

Palms appear to have been exceptionally unfortunate in regard to nomenclature. Horticulturists will, no doubt, regret that Kurz's simple name for the plant here figured, viz., *Areca Augusta*, proved a wrong shot. What are termed "crack-jaw" names by the laity are abundant among Palm names. The unoffending little brother of the plant here figured has been well (or ill) treated in this respect by the botanists. One called it *Ptychosperma singaporensis*; another followed with *Rhopaloblaste*, and now we are to call it *Ptychoraphis*. Would plant sponsors be offended if cultivators appealed to them for simpler names? The new generic names are much more "crack-jaw," as a rule, than the old. *W. W.*



FIG. 63.—PTYCHORAPHIS AUGUSTA.

cochineal still remains one of the principal articles of export, because it is easy to cultivate, and because the Cactus grows in situations unsuitable for other plants. The economical results of the cochineal culture are yet widely felt in the islands.

Immediately after the collapse of the wine trade, the owners of land found themselves face to face with an unsuspected mine of wealth, which enriched them almost without an effort on their own part. Every one shared in the golden shower. The peasant

landed gentry ordered expensive furniture, silver-mounted saddlery, and other costly goods from Europe, or spent their time in general dissipation.

Retribution was sudden, swift, and universal. Aniline dyes took the public taste, and left merchants loaded with stock which never ceased to fall. Money-lenders with heavy mortgages on comparatively worthless property, resident landowners insolvent, and a peasant population temporarily demoralised by high wages and easy living.

ENGLISH GARDENS.

MR. F. L. OLMSTED, the distinguished American landscape gardener, has been staying in England during the summer. The following extracts from a letter to the *Garden*, will, no doubt, interest our readers:—

"I enjoyed the park at Chatsworth, did not like the terrace, but found, notwithstanding some bad anomalies, the results of Paxton's work in the pleasure grounds more agreeably interesting than I had in some way been led to suppose, or than I remembered them. I suppose this is the result of growth. Justice can often not be done to a landscape gardener's design in less than fifty years after the work has been initiated. Nor then or ever, unless it has been in the hands of one in sympathy with nature.

"Reviewing all that I have seen in England, it appears to me that the selection and disposition of trees and plants, the modelling of surfaces and the arrangement of roads and walks and architectural conveniences, with a view to pleasing general effects of scenery, have been of late much confused and often lost sight of in efforts to provide brilliant local spectacles, to display rarities, curiosities and luxuries of vegetation, and to exhibit master-pieces of horticultural craft and costly garden *bric-à-brac*. Vast numbers of trees have been planted without knowledge or soundly-formed anticipations of what they will become. Many of them are failing, and many that are not failing are conspicuously offensive, because of their unfitness to combine with the native elements of English scenery. Since my earlier visits the country has lost something of picturesque interest, mainly I think through agricultural and economical improvements; but a little, I am inclined to think, because of some slight and probably temporary turn of public sentiment toward prosaic neatness and formality.

"Since my last visit there has been a decided abatement of the bedding-out nuisance, and of all the garish and childish fashions that came in with it. The gardeners and others with whom I have talked have been generally conceding—some with evident regret—that it was going out of fashion. Any who think that with it their occupation will be gone had better come quickly to America, where all the beauty that I have been aiming to provide on various grounds is wholly put out of countenance by it. There has never been a square yard of bedding out on any ground under my direction."

CLEISTOGAMY.*

In the admirable *Forms of Flowers*, by Charles Darwin, the term Cleistogamic, proposed by Kuhn ten years before, in 1867, for a certain class of fertile flowers, is adopted. "They are remarkable for their small size, and from never opening, so that they resemble buds; their petals are rudimentary, or quite aborted; their stamens are often reduced in number, with the anthers of very small size, containing few pollen-grains, which have remarkably thin transparent coats, and generally emit their tubes whilst still enclosed within the anther-cells; and, lastly, the pistil is much reduced in size, with the stigma in some cases hardly at all developed."

In regard to this, Mr. Darwin well says: "It is by no means easy to decide in all cases whether flowers ought to be ranked as cleistogamic. For instance, Mr. Bentham informs me that in the South of France some of the flowers on the Vine do not fully open, and yet set fruit; and I hear from two experienced gardeners that this is the case with the Vine in our hot-houses; but as the flowers do not appear to be completely closed, it would be imprudent to consider them as cleistogamic." Commenting on what has preceded, he adds,— "The flowers

of some plants which are produced very early or very late in the season do not properly expand; and these might, perhaps, be considered as incipiently cleistogamic." A cleistogamic flower is to be considered in its broadest sense as one which is capable of self-fertilisation, but never fairly opens. In a restricted sense, it might be considered only as one which not only does not open, but which has had some of its floral parts modified or aborted.

When Mr. Darwin wrote, some fifteen years ago, little attention had been given to this class of flowers. Cleistogamy had been noted in but fifty-five genera, and the treatment of the subject by this acute observer and profound reasoner, is very much as if all the facts that could be gathered had been collected, and were before him. For instance, stress is laid on the fact that a considerable proportion of the genera noted as cleistogamous have irregular flowers; but since Mr. Darwin's time, the list of genera in which cleistogamy has been observed has been considerably extended. I have myself placed on record instances in *Jasminaceæ*, *Hydrophyllaceæ*, *Caryophyllaceæ*, with other genera, in regular flowered orders, which have been already noted, and now add a notable instance in another regular-flowered order—*Rosaceæ*—*Dalibarda repens*. In the latter part of July, confined to the sea-side inn at Seal Harbour, Maine, by temporary illness, botanical friends, and especially Mr. John H. Redfield, Conservator of the Academy of Natural Sciences of Philadelphia, brought me daily portions of their collections; *Dalibarda repens* was among them. There was a profusion of its pure white flowers, on scapes several inches long. I was surprised to find them purely staminate. Supposing the plant monoecious, search for the pistillate was made, and the fruiting calyces on very short pedicels around the root-stocks supposed to be them. Further examination showed minute buds, and others in various stages of fruitfulness down to the mature fruit. The buds proved to be perfect in their sexual organs, the stamens, however, being reduced from the indefinite number in the male flower to five—the uniform number in all the buds. These details are mentioned because heretofore my observations have been made on a large number of individuals in their place of growth. In this case, Mr. Redfield returned to the locality, and confirmed my observations. It may be well to note here, that although this appears to be the first instance of cleistogamy recorded in *Rosaceæ*, sexual irregularity has been observed in the dioecious *Rubus chamæmorus*, and purely pistillate forms in *Fragaria virginiana*.

I desire particularly to refer to observations made by me during the past three or four years, and published in the *Proceedings of the Academy of Natural Sciences of Philadelphia*, in regard to the flowering conditions of many species of *Polygonum*. In the most limited sense, cleistogamy exists in *Polygonum* acre. In many cases, the secret flowers can be found under the ochrea in the lowest node, the only external evidence of their existence often being a gland-like swelling as the seeds mature. But in a general sense, every seed that matures in most of the species of *Polygonum* I have had an opportunity of examining in a living state, is the product of a flower that never opens, and has its pistil fertilised by its own stamen very early in the bud. Every flower so fertilised is fertile. But besides these absolutely fertile closed flowers, there are numerous others, which expand, and seemingly have the stamens and pistils perfect—have honeyed secretions freely availed of by bees and other insects, which I have never found produce a seed.

There are also other facts in connection with cleistogamy worth noting. I have seen *Nemophila insignis* very frequently under cultivation for nearly half a century, but with no indication of cleistogamy; but in some of its wild habitats in California I have seen immense quantities flowering all the summer as our Violets do, in a purely cleistogene condition—so abundantly seeding that there seemed more fruit

than foliage, and the wonder was, how the plant supported all.

Numerous flowers (and in this I would include most of the *Compositæ*—a tenth of the whole vegetable kingdom), as I have shown in various papers, fertilise in the bud before the corollas open, and, so far as results are concerned, might be classed as cleistogene. But for the purposes of this paper, only those strictly in accordance with the definition are employed.

With these before us, we will now ask what is the significance of cleistogamy? Mr. Darwin's only conclusion is given in these words:—"Cleistogamic flowers afford, as just stated, an abundant supply of seeds with little expenditure; and we can hardly doubt that they have had their structure modified and degraded for this special purpose, perfect flowers being still almost always produced, so as to allow of occasional cross-fertilisation."

Do the facts warrant this inference? There is a vastly greater "expenditure" in plants which self-fertilise than in those dependent on insect aid. Nearly all our common weeds are self-fertilisers, and—take the common Chickweed as an illustration—every flower produces seeds. Plants which are dependent on insect aid—take many Orchids for this example—have comparatively few flower seeds, because insects so often fail to do the work. In plants undoubtedly dependent on insect fertilisation, the majority never seed; in self-fertilisers, all—or, we may safely say, nearly all. There is a great expenditure of effort, not a less. The trifling gain in the production of pollen is immeasurably counterbalanced in the immense production of seed. In purely cleistogene flowers, as illustrated in *Nemophila*, this contrast is still more striking.

It is surprising that so acute a logician as Mr. Darwin did not himself see the fallacy of his own reasoning. He shows that in many instances, especially Violets, the perfect flowers rarely produce seeds, the whole function of seed-bearing being left to the cleistogamous class—a fact which those familiar with American Violets can fully endorse. Surely the production of millions of seedless flowers must be a waste of expenditure, for which no amount of cleistogene seed production can compensate.

What, then, is the significance of cleistogamy? Absolutely none from any standpoint connected with the welfare of the race. In the life of plants there are two forces interdependent and yet antagonistic—the vegetative and the reproductive. There can be no reproduction till the vegetative force has in some measure received a check. The reproductive energy is then proportionate to the check vital force receives. The practical horticulturist understands so well that when a plant or tree is growing with great vigour, it will not flower—or, if it flower, seed-production is a failure—that it would be a waste of time to bring in illustrations here. All floral parts are but the organs of vegetation transformed, and are formed only after the nutritive forces which give such energy to vegetative growth have been considerably checked. Waves of vegetative strength, however, often flow into the inflorescence. Parts which under ordinary pressure would be sepals, petals, or stamens, will still continue in a measure leaves, or not perfectly transformed from leaves to the destined organs. Barrenness then ensues, and this barren influence, the result of undue vegetative energy, will often permeate a whole flower. On the other hand, the reproductive energy is powerful just in proportion to the subjection of the vegetative force. To use the language of Mr. Darwin, "we may confidently believe" that a cleistogamic flower is one in which the vegetative force has become so much more than usually subservient to the reproductive, that it has not been able to produce petals or the usual series of stamens; and that this condition, being favourable to reproduction, has resulted in the very fruitful cleistogamic class. The fruitful cleistogamic condition is but an exemplification of a common saying, but an undeniable proposition, that Nature makes an effort for preservation of life proportionately to the chances of destruction.

* "On the Significance of Cleistogamy," by Thomas Meehan, State Botanist of Pennsylvania; Vice-President, Academy of Natural Sciences of Philadelphia; a paper read at the Rochester meeting of the American Association for the Advancement of Science, and communicated by the Author.

NEW ALPINE PLANTS.

M. LE CHEVALIER SOMMIER, of Florence, who has botanised and travelled, chiefly in mountainous and cold countries of the northern hemisphere, has kindly given to our alpine garden a number of alpine and mountain plants which are of considerable decorative value, and not yet familiar in cultivation. From the cold districts of Russian Lapland he has brought us seeds of the two following species, which are worthy of a detailed description. *Primula Finnmarkica*, Jarg. (*P. norwegica*, Retz.), an elegant and graceful form of *P. sibirica*, Jarg.; not the sibirica of gardens, which is only the common *P. farinosa*, but the true sibirica, that is to say a *Primula* not unlike *P. involucrata*. *P. Finnmarkica* differs from the Siberian species by having smaller flowers, borne on shorter, erect stems, and by the length of the corolla-tube which scarcely extends beyond the calyx. From a horticulturist's point of view the blossom is quite different to that of sibirica, owing to the dark lilac colour of the corolla and its clusters of smaller, less abundant and more crowded blossoms. It flowers once in summer and again later on in autumn. It is cultivated as are the Himalayan species in light, porous earth and in full sunshine; it is increased by division and seed.

Polemonium campanulatum is a dwarf close plant of delicate habit, with pendent flowers like well-opened bells, lilacy-blue and with golden-yellow stamens. It blooms in April and May, and likes the coolness of partial shade. The plant does not flower freely in the Geneva climate, but does admirably in our botanic garden of the Linnaea. In the summer of 1890, M. Sommer, accompanied by Dr. Levier, of Florence, made a botanical excursion in the Caucasus, and sent us thence 160 packets of various seeds, among which were found a certain number of undescribed species. Many of these plants have already flowered with us, and are valued acquisitions for the rockery and alpine garden. The following are those which most attracted me:—*Androsace alba*, Stev., from the alpine regions of central and eastern Caucasus, at an elevation of from 8000 to 10,000 feet. The plant is biennial or perennial, the foliage is in pretty little rosettes, the edges daintily toothed, bright green, the flowers very shortly stalked, growing in dense compact umbels, the corollas pinkish-white. It blooms from April to July, requires sunshine, a light soil, and is easily reproduced from seed.

Androsace caucasica, Sommer and Levier.—A pretty new species found by these explorers on the Elbruz, at an elevation of between 10,000 and 11,000 feet, among stony and sterile rubbish. It is apparently biennial, but here, in the garden, it remained after flowering, and seems as if it would bloom again next year. It is a dwarf plant, forming on the ground a cluster of beautiful clear pink flowers, almost stemless, closely packed one against another, and recalling our *Androsace glacialis* of the Alps by the abundance of densely-erred blooms and their bright pink colour. But it is really quite another plant, and resembles far more closely *Androsace nana*, of Sicily. The leaves are narrow, the edges toothed, arranged in a rosette, from the centre of which the flowers spring. It blooms here all the summer, and, in fact, is now still in bloom in the Linnaea.

Cerastium purpurascens, from the alpine regions of the Caucasus, is the best species of the genus, and quite different from other species grown in our gardens. I nowhere find this plant mentioned as "in cultivation," and I believe that, thanks to M. Sommer, our garden is its introducer. It is a curious, not stoloniferous species, with a thick, almost bulbous root, with a central thick rhizome, into which the plant entirely retires after fructification. This central stock bears floriferous branches from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches long, with oblong linear-lanceolate leaves, and on the summit an umbel of large, or indeed very large, flowers of a beautiful blue colour, which contrast well with the purplish hue of the sepals. When the plant is in bloom it is most effective, and forms

a splendid ornament for the rockery. It is a new plant, and very valuable, which I cannot sufficiently warmly recommend for introduction into gardens. It can only be increased by seed, as the stock gives forth neither stolons nor side-shoots.

Coronilla cappadocica, Willd., from the mountainous regions of the Caucasus and Taurus, at a height of between 4500 to 7000 feet. A pretty herbaceous species, with stems trailing on the ground, the leaves glaucous, the flowers bright golden-yellow, borne on a pendent stem throughout the summer. It requires full sunshine, and is increased from seed. This is an excellent species for rockeries in full sun, and has the great advantage that during the warm summer months it bears an abundance of flowers, which contrast charmingly with the very bright colour of the foliage. H. Correvon, Directeur du Jardin Alpin d'Acclimatation, Geneva.

ABIES VEITCHII.

We are glad to have the opportunity of publishing an illustration of the first cone of this species that has, so far as we know, been produced in Britain.



FIG. 64.—ABIES VEITCHII: BRITISH-GROWN CONE.

It was obligingly forwarded to us by Mr. Croucher, of the gardens, Ochtertyre, Crieff. The cones that we figured some years ago, were native specimens, and in them the bracts were shorter than the scales, and in consequence concealed. But even in the Japanese specimens brought home by Mr. Maries, and in those figured by Dr. Mayr in his recent work on the *Abietineae* of Japan, there is considerable variation in the relative length of bracts and scales. In the specimen from Col. Murray's garden, now published, the cone is of a rich olive-brown colour, and the acuminate bracts not only project, but are bent downwards, and are of a lighter colour than the scales.

Mr. Croucher notes in his letter the peculiar growth of the tree, which is very slender in outline, with the lateral branches relatively short and somewhat irregularly disposed, so that between the regular tiers of longer branches, several much shorter branches occur at irregular intervals; and this mode of growth characterises the specimen in our own garden—indeed, all we have seen. Various other Firs have received, by misadventure, the name *Veitchii*; but the one now referred to is the only one properly entitled to the name. The confusion was rectified in our article at p. 275 of our volume

Feb. 28, 1880, and in the *Journal of the Linnean Society*, vol. xviii., tab. 20, to which we have nothing further to add as to the history of the tree.

A TRAVELLER'S NOTES.

(Continued from p. 350.)

THE BOTANICAL GARDEN OF CALCUTTA—an hour out of the town at the village of Seebpore—is a wonderful place. It is 272 acres in extent, possesses numerous fine avenues, the most noticeable being one of *Grevillea robusta*, two of *Oreodoxa regia*, their stems rising straight and tall, like great gun-barrels; another along the river-bank, three-quarters of a mile in length, of *Terminalia Catappa*, 60 to 70 feet high, with great ovate red-tinted foliage as large as a *Magnolia*, a splendid grove of Bamboos in great variety, a clump of Brownes, triangular in shape, 50 feet at the broadest end, and 200 feet long; an avenue of the same genus over 100 yards long, forming a perfect tunnel; Palms such as I have never seen, fine trees of Mahogany, a noble avenue of Casuarinas, a grass-covered house, octagonal in shape, each side of which octagon is 30 yards long, one of the finest I have seen in or out of Europe; a Banyan, 106 years old, the main stem of which is 16 feet in diameter (see page 409); a splendid avenue of the Toddy Palm, miles of roads, numerous ponds winding in and out in every direction, on which the *Victoria regia* lives in cold weather, and turtles sit and eat its leaves; and a frontage 1 mile in length along the bank of one of the world's finest water-courses, the great Hougli river. It, as a garden, is like the Taj as a building, hear what you may, or picture to yourself what you will, when you see both you will yet be surprised.

The luxuriance of the vegetation tells a tale of what the hot season must be like; in England we cultivate to grow, but at Seebpore the difficulty is to keep within bounds. Mr. Proudlock, an old Kew man, accompanied me round the garden.

The shape of the Botanic Gardens is peculiar. Standing on the bridge, the view is very pretty. In the tank were some *Victoria regia*—one just bursting a flower. A few live through the cold season, but not all, and turtle are very destructive to their leaves. For three-quarters of a mile along the river bank runs the magnificent *Terminalia Catappa* avenue—a most fine sight; the stems are tall and straight, the heads pyramidal, and the large handsome foliage prettily tinted with red; most of the specimens are from 60 to 70 feet high.

Turning from the pond, and looking at the river still from the same bridge, one is struck by the great breadth of this stream; in the rains it often rises 12 feet; its force at that time must be irresistible. A little to the left of the road, along the river bank, towards the east, is a great grove of Bamboos, opposite a clump of *Pinus longifolia*. Some of these Bamboos are very fine, and very many species are here represented. Those I chiefly noticed were *Dendrocalamus obovatus*, 35 feet high and some 12 feet through—so thick as to be perfectly impregnable, like a bundle of lead pencils; *Melocanna bambusoides*, of straggling habit, but producing stiff strong canes, used for pig-sticking; the big-caned *Gigantochloa macrostachya*; a fine specimen of *Bambusa nutans*, somewhat straggling in habit; a quite yellow-stemmed variety of *Bambusa vulgaris*; a very pretty clump of *Bambusa nana*, with thin stems and overhanging foliage—remarkably graceful; and a very peculiar species, *Dinorchloa Macleanii*, with twisted curled stems, some 20 feet high.

Dendrocalamus giganteus is represented [figured at p. 335 of this volume] by a fine specimen, but not so large as those in Ceylon—a very fine piece at Seebpore is 70 feet high, but at Peradenya I think the clumps are bigger in circumference. I measured some bracts fallen off, they were exactly 2 feet across; a peculiarity is noticeable on the young stems—for almost their entire length they are covered with a whitish, thick, wax excretion; in the older canes this is absent.

At the north end of this clump of Bamboos, one looks down one of the avenues of *Oreodoxa regia*, with a white stone vase at the end, from which the other avenue of the same Palm runs down to the river bank. These two avenues are wonderfully fine; their regularity, evenness of stems, &c., would lead one almost to think they were the work of man and not of Nature. Near the end of the *Oreodoxa* avenue first referred to is a young avenue not long planted, though the specimens are already of considerable size, of *Swietenia Mahagoni macrophylla*, a large-leaved variety of Mahogany, which originated

in this wise: some seed was got out from Kew of what was supposed to be the typical Mahogany; but a very short time after germination, Dr. King noticed they were different from the type, having larger foliage, hence the name *macrophylla*, which he gave it. Adjoining this is an avenue of the Rain Tree.

If one continues along the river bank after having been through the clump of Bamboos, and passing in returning a fine piece of *Dendrocalamus Hamiltonianus*, so common in the valley of Sikkim, and one of *Bambusa siamensis*, exceptionally graceful and pretty, one still passes beneath the great *Terminalia* avenue. On the river bank, Mr. Proudlock pointed out to me the remains of a stem of *Corypha elata*, the principal portion of which had been shipped to Kew on New Year's Day. The stump of this Palm was exactly 2½ feet in diameter, and the peculiarity lies in its great spiral stem—sometimes the twist is in one direction, sometimes in another; why some specimens twist to the right and others to the left is unknown. When the one referred to arrives at Kew, they will have both instances of this peculiarity. A little further on, the bank is being raised—in some places as much as 5 feet; this is partly done to keep the Houghli within bounds in the rainy season, and partly to improve this portion of the garden.

I may here mention, much has been done all over the garden in raising the ground in certain parts, and causing it to undulate. The whole place, Dr. King tells me, was perfectly flat, much artificially must indeed have been done to make it the pretty spot it now is. The roads are very solid, made of broken bricks, with a fine sand on the top; they are perfectly level, that is to say, do not slope away on either side, on account of the heavy wash in the rains; for the same reason, the grass, which in places is very good, is 2 inches below the level of the roads.

Before reaching the great clump of Brownias, I have already mentioned, on which were a few isolated heads of bloom (for it is yet too early for these magnificent plants to be in full bloom), a fine clump of *Calamus* some 20 feet through is passed.

The Mahogany avenue touches the Brownia group at this point, on the left of which is a pond with undulating banks, on one of which, amongst the luxuriant vegetation is a tall *Poinciana regia*, some 40 feet high, its large graceful foliage reaching to the water's edge; it is covered with the thick long brown pods peculiar to these plants. Masses of Palms on the other banks rise in the distance.

The eastern boundary is now reached, with the Howrah Gate, the principal entrance at one end. This entrance is reached from Calcutta, through the dirty native village of Seebpore, so a road is being constructed along the river bank to obviate passing through this village. Before reaching the Howrah Gate, another pretty view of the same lake is obtained with the Island in the centre; a group of Bamboos, with dwarf *Pandanus* beneath, and some great Sissoo trees (*Dalbergia Sissoo*) a most English-like looking tree beyond. On the right of the road leading to the Howrah Gate, is a row of *Jonesia Asoca*. I am told its pea-shaped flowers are very handsome, reddish in colour; and near by are some specimens of *Blighia sapida*, an African fruit known as the Akee, said to be very good; as well as four nice trees of *Adansonia digitata*, the Baobab, a deciduous tree, with big Malvaceous flowers. A great bush, spreading 20 yards through, of *Ficus Roxburghii*, is very striking, with its great leaves usually 1 foot long by 10 inches broad. Near the gate some more alterations in the ground-level are being made. I was much struck with the type of people employed, so different to the cringing, lazy, Bengalee. Mr. Proudlock informed me they were Daughters from some 150 miles up country, and spoke in very high terms of their working capabilities and general character. They receive from—at the present rate of the rupee—5s. 8d. to 8s. 6d. per month. Standing at the Howrah Gate, one notices three main roads leading into the gardens; one skirts along the north side, shaded by a fine avenue of *Borassus flabelliformis*, the Toddy Palm; one along the east running into the *Terminalia* avenue on the river bank, and one towards the centre of this part of the gardens. The one on the east side is the one I came along from the river bank, and it will be most interesting to follow the one which winds gently through grass, on which are fine single specimens, clumps, &c., towards the centre of the grounds, and towards the celebrated Palmetum.

Near the gate is a large Peepul Tree (*Ficus religiosa*), over which, on the great stem and branches are many creepers, chiefly *Philodendrons*, a fine

Tectona grandis, and a tall *Grevillea robusta*, with its rich dark foliage; it is strange to me how this plant lives, and grows on the hills in Ceylon, at several thousand feet elevation in the Nilgiris, as well as in the reeking oven-like temperature of the hot season of Calcutta. On the left, and not far down the road winding towards the centre of the garden, is a fine clump of Palms—great *Licualas*, handsome *Phoenix*, and a tall *Caryota urens*; whilst on either side are some tall, even specimens of *Aracaria Cunninghamii*. A big bush of *Bougainvillea glabra*, the shy-flowering form, is here in bloom.

A fine avenue of *Casuarina equisetifolia* lines a portion of the road—great trees, dwarfing all beneath; near to which are two fine specimens of *Eucalyptus resinifera*. Over one of the *Casuarinas* is a *Ficus repens*, many of its leaves being just 4 inches long. Tall, graceful pieces of *Cupressus torulosa* are on the left of the road, with some fine pyramidal specimens, 15 feet high, of *Juniperus virginiana*; on the right rises a tall *Aracaria Cookii*, and a fine group of *Livistona mauritiana*.

A moderate-sized *Bignonia*, from Columbia, called *magnifica*, was in flower; it has a pink tint. It is close to a fine *Bauhinia diphylla*—not remarkable, I am told, on account of its flower, but possessing very pretty foliage; so light and graceful is it, that in the distance it is not unlike *Adiantum Farleyense*.

On the right of this road is another lake, with pretty banks, sloping to the water's edge, winding in and out. A great *Albizia procera*, not less than 100 feet high, with foliage to the water's edge, overhangs it at one point. Beneath it, on one side, is an *Amherstia nobilis*; whilst a fine specimen of a *Pterocarpus*, from Java, is close by.

Still following the same road, and passing on the left a fine clump of *Aracarias*—the specimens ranging from 30 to 35 feet high, chiefly composed of *A. Bidwillii*, *Cunninghamii*, and *Cookii*—as well as a dwarf shrub, *Quassia amara*, from which our *Quassia* chips are derived, and which has a very curious pinnate foliage with winged petioles—the avenue of *Casuarina* referred to is reached. Over one of these creeps *Porana paniculata*, the Bridal Creeper, with long inflorescences of white flowers.

Beyond this short avenue, Mr. Proudlock pointed me out a shrub, *Strophanthus dichotomus*, with shoots several yards long, turning and twisting over the grass on all sides. He tells me it is a most gorgeous, brilliant red, five-petalled flower, with thin, wavy, thread-like petals, 6 to 7 inches long. Close by is a Nutmeg, which has to be protected during the hot season, and two groves of Palms. Here the road again divides into three, and the Palmetum proper is reached. At this portion of the grounds the garden is only a few hundred yards wide. At the commencement of the Palmetum, the *Borassus* avenue, named as lining the road on the north side from the Howrah Gate, is clearly seen.

The roads are beautifully smooth, carefully rolled, the motive-power being small, plump little bullocks in splendid condition, and wonderfully pretty creatures, so different from those one sees in the villages—some with great open sores, and many with tails twisted out of shape. The average Hindoo practises great cruelty on the animal, which from religious belief he dare not kill.

At the commencement of the Palmetum, near a small pond on the left, is a fine *Livistona* group, in the centre of which is the best specimen of the Egyptian Doom Palm, *Hyphæne thebaica*, I have yet seen. It is most distinctly branched, and is not far short of 30 feet high. From the base rise three shoots, two of which are three times dichotomously branched, the branches being several feet long.

Masses of Palms are dotted about. *Phoenix*, *Livistonas*, *Oreodoxas*, and on one side is a most effective mass of *Latania glaucophylla*, with broad grey foliage, stiff, upright, grey stems—a most distinct feature in this part of the garden. In a thick bed of *Rhapis*—much like, in fact Mr. Proudlock thinks it is, *humilis*, so thick as to be impregnable, just like standing in front of a Yew hedge—is a tall graceful specimen of *Caryota urens*.

Continuing toward the centre of the garden, a short avenue of tall *Oreodoxa* (not one of those already referred to) is reached, on the right of which is a large winding lake, and in the centre is an island, every inch covered with a small forest of Palms, great *Caryotas*, tall *Elais guineensis*, and the tall stiff foliage of *Arenga saccharifera* rise many yards. The growth is wonderfully luxuriant, and, being left principally to Nature, the effect is most impressive. The Palm-house at Kew is but a toy after all. Near here, on the left of the road, creeping

masses of various *Pandanus* cover many, many square yards, and some fine *Arengas* and *Oreodoxas* are behind a pretty circular avenue of *Polyalthia longifolia*.

There are some fine single specimens of Palms, most noticeable being *Corypha Gebanga*, with large broad palmate leaves; and *Corypha elata*, with a stem 3 to 4 feet through, with great, stiff spiny petioles, and broad palmate leaves several yards through. The specimen in question is not very high (as Palms go at Seebpore), but is an immense thing.

A group of hybrid *Phoenix* is very pretty, and *Phoenix rupicola* does well here, but does not grow much above 8 to 10 feet. *Ravenalia madagascariensis*—the first I have seen since leaving Ceylon—is fine. There are two fine pieces near the Palmetum. At the end of the Palmetum is a bridge over the largest lake, somewhat narrowed at this point. From here one looks straight to the Houghli river, and to the bridge from which I started.

Standing for a few minutes on this bridge I noticed some fine *Elais guineensis*, *Phoenix rupicola*, a pretty variety of *Areca madagascariensis*, a large *Dendrocalamus giganteus*, an *Attalea cohun*, with tall stiff *Phoenix*-like leaves some 20 feet long, a great bush covering many yards of *Sanchezia*, green from the luxuriance of its growth; tall *Cocos flexuosa*, and some *Ipomœa vitifolia*. This concluded my walk in the smaller and most interesting portion of the garden. *James H. Veitch*.

(To be continued.)

FRUIT CULTURE AT GLEWSTONE COURT.

DURING late years, the cultivation of hardy fruit has received increased attention, while its extension from a profitable point of view has been both recommended and discouraged by practitioners and theorists alike, and members of each class have arrived at such diverse conclusions, that would-be planters may well be in a dilemma and state of hesitation about entering upon this enterprise. In touching upon this subject, I do not pretend to be able to improve these matters. There are so many pros and cons—vital questions to be considered in connection with fruit culture for profit—that it is as advisable to be cautious in recommending its adoption as in condemning it. That a good profit may be realised by it I am, however, convinced, but to accomplish this, favourable conditions must be linked together, and for this reason it cannot become to any extent of general benefit to ordinary tenant-farmers, as some enthusiasts imagine it might. This, I think, is beside the question; capital, skill, suitable soil, favourable situation, security of tenure, &c., are indispensable to insure thorough success, and even when these are concentrated, the elements may blight bright prospects.

Nowhere have I seen the above necessary factors to success so happily united as at Glewstone Court, Herefordshire. Here, upon a favourably-placed fruit plantation of 12 acres in extent, the effects of Mr. Lee Campbell's capital, combined with his gardener's (Mr. Wright) intelligence and skill, are to be conspicuously seen; and although I cannot conjecture what the actual profits may be, there can be no doubt about there being a fair surplus after expenses, which must be considerable, are paid.

The situation is an open one upon the banks of the Wye, and is sufficiently elevated to escape very destructive frosts; while the soil is a light sandy loam, somewhat shallow, and having a natural drainage of red sandstone—conditions conducive to the formation of fruit-buds rather than of sappy wood. The fruits cultivated are Apples, Plums, Pears, Raspberries, and Black Currants. The former occupy the largest space, and are most profitable; Plums following next in both respects, and only 3 acres are devoted to Raspberries and Currants. The trees of Apples, Pears, and Plums are pyramidal and bush in form, are planted 9 feet asunder, and are 7 feet in height; and this kind of tree answers admirably upon soils of the above description, as their growth is moderate, requiring little pruning, and they are abundantly fruitful when quite young. Moreover, their dressing, pruning, and fruit-picking can be cheaply done, an advantage over large trees worth

consideration. As an instance of early fruitfulness, I may mention that a plot of Apples (Lane's Prince Albert), which when planted were two years' grafted, and cost 2s. each, bore fruit after being two years planted which realised the sum of 3s. 6d. each. All the trees are models of good cultivation, and exhibit Mr. Wright's skill in a marked manner; they are clean, healthy, and, when I saw them, those not relieved of their burdens were carrying heavy crops of fine clean fruit, many having their branches supported to prevent breakage from the weight. I do not remember the age of the oldest trees, but they are probably nine years planted, and the youngest are—600 Apples, Ecklinville Seedling—three years planted.

For market purposes, a few reliable varieties are preferred to growing numerous kinds, and the sorts of Apples chiefly depended upon are Lane's Prince Albert, Ecklinville Seedling, Worcester Pearmain, King of the Pippins, Duchess of Oldenburg, Peasgood's Nonsuch, Warner's King, and Frogmore Prolific; these were selected from many varieties that were given a trial. Of Plums, Victoria and Pond's Seedling are most remunerative, the former being most valued. The trees, like those of Apples, are well grown and in perfect health. My experience with Plum trees is, that when young they bear good crops of fruit sooner upon light soils than they do upon that which is heavy, but that they are not so long lasting; and I shall be much interested if Mr. Lee Campbell's plantation is an exception to this rule. However, at present there is no indication of the trees giving out. Pears are not wholly satisfactory, their fruits not being without blemish, as is the case with the Apples. The heaviest croppers are Louise Bonne of Jersey, Beurré Goubault, Beurré Clairgeau, Marie Louise d'Uccle, and Souvenir du Congrès. As fertilisers, chemical manures, containing a large percentage of potash, are chiefly relied upon, and these are easily applied.

In going with Mr. Campbell through his plantation when fruit-picking was being attended to, I noticed now carefully the fruits were separated, two lots being made, and each packed in different sets of baskets, under the appellation of firsts and seconds; and herein lies one of the necessary precautions to prevent a bad sale. By attention to matters of this kind, Mr. Lee Campbell never fails to secure good prices, and foreign competition is of little concern to him, as may be imagined, when I say that last year his Peasgoods' commanded in Manchester 30s. per cwt. at a time when first-rate American Apples realised only 19s. 3d. per cwt., the salesman saying at the time that he could take 100 tons per week of fruit of a similar description. *Thomas Coomber.*

THE CULTIVATION OF HENEQUEN FIBRE IN YUCATAN.

ONE of the most interesting and practical Foreign Office Reports is that which has recently been published on the Henequen Hemp industry in Yucatan. Though there seem to be several varieties of the *Agave rigida* known in Mexico, it is stated that only two are cultivated, which are easily distinguished, and bear the names of "Sacqui" or White Hemp, in which the leaves are of a light green colour with a silvery appearance in sunlight, and the "Yaxqui," with dark green leaves. The first-named is the kind almost entirely cultivated in Yucatan, a small portion only of the second being grown, and that principally in the eastern part of the State. Regarding the area of land under Henequen culture, though there is a good deal of difficulty in arriving at anything like an accurate estimate, it is calculated that it occupies about 350 square miles, and it is further estimated that for the present year, 1892, from January to December, the exports of Yucatan Hemp would amount to about 350,000 bales, each bale weighing about 375 lb. A Hemp plantation lasts for some fifteen years, as a general calculation, on the basis of production for each mecate of 100 lb. From the time of planting-out of suckers until they produce, five years as a rule, are required. In good

land the crop commences in four years or earlier, whilst on rocky ground six years or more. These calculations are based on the planting-out of suckers under the same conditions in both kinds of ground with plants of from 18 to 20 inches long. Hemp planted on fertile land produces less weight of fibre, although it is longer and finer, because on rocky soil the roots run along the surface instead of penetrating into the ground.

Although new plants are being continually placed with the old ones, it is considered that no more than the 350 square miles will be cultivated, as old plants are always dying out. The only chance of a larger area coming under cultivation is from immigration, and this is extremely difficult, owing to the great heat of the climate. The plants can be produced from seeds, but the system is never used in Yucatan, in consequence of the length of time before the plants come to maturity, suckers are, therefore, always planted. The system of cultivation is very simple, the young plants already referred to, from 18 to 20 inches high, are planted in straight lines, leaving lanes between usually from east to west, more from custom than any known reason or cause; eighty-four plants to the mecate is considered the most convenient, both for the working and the growth of the plants. Rocky ground is the most favourable, and the only preparation made for sowing the Hemp is to clear the ground of trees and plants, the former serving to make charcoal. The first crop sown on the ground so cleared, is Maize, this being the quickest crop. This gives time for farmers to rail-in their ground until Hemp is ready to take the place of Corn. The farms are divided by stone walls, as there is a good supply of stone on the land. Then the plantations are laid out in straight lines with the usual number of plants per mecate, according to the extent of land disposable, and in the most convenient manner for taking the leaves when cut to the cleaning-machine; on the majority of the farms portable railways have been laid. On most farms the ground is cleared of weeds twice a year, and on others three times, according to the class of ground, the means of the farmer, &c. There is no fixed rule as to the right time of cutting the leaves, and on this point no certain reason can be given. Opinions differ as to the proper time, and the Indian servants only seem to know when the leaves are ripe for cutting. In cutting the leaves, the usual custom is to take from each plant, commencing from below, some few leaves in the first year of production, and afterwards some twenty-four leaves from each plant. If from want of labour the farmer is obliged to cut more leaves from each plant at one time, he tries not to cut more than twelve. Too much cutting kills the plant very soon; on the other hand, plants cannot be left without cutting the leaves when ripe, as by cutting the plant continues producing. As soon as the plant begins to flower it ceases to produce leaves, and should be destroyed, as the seeds are of no use in established plantations.

In order to go on replacing plantations without special expense, and in order not to change the form or work on same, it is the custom to place at the foot of each plant when about three-fourths of its life are spent, a small plant, which latter, when the old one gives out, is ready for production. There are several opinions as to the best means of planting the suckers, although in general, they are taken from the old plantations, and at once placed in new plantations. Trials have been made, and with satisfactory results apparently, of leaving the suckers before placing them in fresh plantations in heaps in the open for some two months or more, placed so as to receive the full heat of the sun on the base of the plant (in form like an Onion), from which the roots are taken off. On being taken to new plantations, the base is peeled, and any dry roots removed, and all dry leaves thrown away. Although the suckers are apparently ruined by this exposure, and for the first two years present a very poor appearance, looking completely dried up, yet in the third year they regain such strength in growing that they then

are superior to plants placed out fresh—that is, planted out direct from the old plantation to the new one; and this advantage is seen by their producing more leaves, and those stronger and larger than the other plants. When farms have no old plantations from which to gather the necessary suckers of 18 to 20 inches high, they are produced by providing space for small plants or seedlings; these are placed in the ground, as if they were vegetables, with from 4 to 5 inches of leaf, and planted in rows about 3 or 4 inches apart, and some 10 or 12 inches between each row, the distance being regulated by the size of the plants. On planting-out seedlings, the roots are taken off. In making new plantations it is better to leave these seedlings exposed for a period of from eight to fifteen days before planting them. They have to be watered now and again, but only sufficiently to keep the ground from becoming too dry.

The machinery mostly used for extracting the fibre is the rasping-wheel made by Messrs. Deane & Ellwood, of Leicester, who also furnish other machinery, but for some time past the farmers only buy the principal piece, the wheel, which is 40 inches in diameter. The great increase in the cultivation of the plant has caused farmers to look for quicker means of extracting the fibre, as many have oversown and are unable to attend properly to what they have sown, and the scarcity of labour tends to increase this need; but although much study has been given to the matter, only amongst the larger farmers who can stand the expense, can new machines be employed, such as will compensate for the want of labour. The wheel above-mentioned, with two men for direct management, can clean some 9000 leaves per day. The pressing of the fibre into bales is done on the farms by means of lever or screw-presses by hand or by hydraulic pressure. The screw-presses are of American manufacture, and the hydraulic are English.

The principal markets to which the Hemp is now sent, are as follows:—United States, principally through New York and Boston; New Orleans is also taking considerable quantities, and there is a probability of Philadelphia becoming a direct importer. The imports to England come chiefly through Liverpool, those to France through Havre, Germany through Hamburg, Cuba by Havana, and Spain by Seville, Alicante, and Barcelona.

THE ROSERY.

NEW ROSES AT THE NATIONAL ROSE SOCIETY'S EXHIBITIONS OF 1892.

It is always interesting to lovers of the Rose to have a few notes upon the various good or bad qualities and characteristics of the newer introductions among the queen of flowers. Probably there are no better opportunities of making reliable notes so far as the newer productions are concerned, than that afforded by a careful look round among those exhibited in the classes for new Roses at such large and representative gatherings as are held by the National Rose Society, both in the metropolis and at various places throughout the country.

This year the two annual shows were held at the Crystal Palace and at Chester, and new Roses were well represented at both meetings. It will perhaps be well to deal with them in the same order as they appear on my notes, irrespective of the class or section they represent.

I will, therefore, commence with the class for twelve new Roses at Chester on July 16. The lot gaining the first prize, and shown by Mr. H. Merryweather, Southwell, Notts, was a really pretty lot for "new Roses." Gustave Piganeau was, of course, the best in the box, and I will dismiss this sort as soon as possible by merely saying it is in every way a grand Rose. Out of the four Silver Medals offered for the finest hybrid perpetual Rose at these two meetings, Gustave Piganeau took two. When I remind my readers that this was against the competition of all the leading varieties, many of which

are grown in tens of thousands over the country, I trust they will see how much extra honour attaches to a new Rose through winning in such company. This Rose has also not had the chance to do itself justice from strong and established plants, as it was only introduced to general commerce in 1889, and, like other good new Roses, has been strained somewhat through over-propagation.

Jeannie Dickson is another splendid new Rose of great promise. Grand in growth and habit, perfect shape, and a sweet colour, but not quite so full as our first-class varieties should be to keep up the general standard of excellence.

Bruce Findlay was also worthy of note. This is a very bright crimson, flowers large and well-shaped, but not over full. It will rank among our best autumnal Roses, being very free, and possessing much of the characteristics belonging to the China Roses.

Mrs. Watson has grand shell-shaped petals, is a very large flower, pale pink in colour, and of vigorous growth.

Medea has a soft lemon colour for its ground, with a deep canary-yellow centre. It is clear, large, full, and globular. The growth is vigorous, and the Rose has much promise.

Marchioness of Dufferin is a very large flower, that possesses a particularly soft rosy-pink shade. I have noticed this Rose several times during the present summer, and each time it has advanced in my favour.

Denmark gives one an idea of being too much like one often sees as La France to be considered so thoroughly distinct as one could wish. It is a very promising Rose in all other respects.

Margaret Dickson is undoubtedly one of the finest white Roses we have. It is of very similar habit to Merveille de Lyon, and is said to be an improvement upon this grand white hybrid perpetual. At Chester the raisers, Messrs. A. Dickson & Sons, of Newtownards, Ireland, showed forty-eight superb blooms not for competition. I can speak of this Rose from personal experience, and may say it is in every way first-class.

Salamander, as its name would imply, is a very deep and vivid scarlet; this is brighter in the summer, but more deep coloured and glowing towards the autumn. The flowers are large and full, with an upstanding centre, surrounded with large petals that are finely reflexed. It is free-flowering, has very pretty foliage, and seems to enjoy a good constitution.

J. B. Varonne is a very pretty Tea-scented variety, and of a most peculiar and pleasing colour. With much of the metallic hue to be found in L'Idéale, and with some of the pretty tints upon the outsides of the petals in the way of Madame de Watteville, this new Rose is certain to become a favourite among the ladies.

Caroline Testout is a hybrid Tea that I have seen very good more than once this season. At the Temple Show, in the spring, this was shown well upon pot plants, and is evidently a grand Rose for forcing. In colour and habit it partakes of the old favourite La France, but is a trifle deeper in colour than that Rose generally comes with me.

Princess May is a wonderfully pretty Rose. I am doubtful if it is a Tea-scented or hybrid Tea variety. This was also seen at the Temple Show, and from its habit of growth, and handsome foliage, combined with a combination of delicate peach, flesh, and salmon colours in the bloom, I have no hesitation in saying is a grand acquisition.

Duchess of Marlborough is a very sweet-scented variety, deep rose in colour, flowers large and globular. Very distinct.

Marchioness of Lorne has come particularly well with me upon maidens this season, and is a good all-round Rose. Colour red, with a slightly carmine centre; it is very free-growing, and a profuse bloomer.

Mrs. Paul is the grandest Bourbon Rose we have after Souvenir de la Malmaison. This is a large open flower, with the outer petals slightly reflexed, in the style of a Camellia. It is a fine exhibition

Rose of its class, as the petals are stout, and perfectly arranged. Colour blush-white, with a slight rosy-peach shading.

Triomphe de Pernet Père is a grand hybrid Tea, of much stronger, and more satisfactory growth than the majority of this class; it has a long bud, vivid red in colour, and is very free blooming.

Waban is another American sport from Catherine Mermet; it is said to be larger than its parent, but it has failed to come so with me, nor have I seen one near that size. The flowers are a good shape, and very much resemble Catherine Mermet, except in being a deeper red. I expect it to turn out much better than I have seen it as yet.

Henry Gow is a cross between Star of Waltham and President Léon de St. Jean. From the grand plant exhibited at the Crystal Palace, it is evidently a good grower and free bloomer. The blooms are of fairly good shape, but the colour is not distinct enough from Star of Waltham to recommend itself to me as a good new Rose.

Spenser is a good flesh-coloured Rose, of great substance, and when young it possesses the same shape as Baroness Rothschild. It opens into a flat flower, of the Malmaison type, too quickly to become a popular exhibition Rose; but for pot work, or as a garden variety, it is evidently one of the best. At all of the principal shows, this new Rose has been shown fairly well.

Gustave Regis is classed by the raiser as a hybrid Tea, but it gives me the impression of being as pure a Tea-scented variety as Sunset, a Rose that it resembles in colour. It is not heavy enough for exhibition, but is undoubtedly a good Rose for forcing and general cut flowers.

Corianna is not so globular as Grace Darling, is of much the same style and colour, and a very pleasing little Rose.

May Rivers has the same grand habit and bold flowers as The Bride and Edith Gifford; in colour it partakes a little of both, and is a grand new Rose.

Lady H. Grosvenor is a hybrid Tea of similar growth and habit. This bloom, however, has a deep tinge of salmon-pink in the centre, somewhat like a very fresh flower of Souvenir de Paul Neyron. Like the last-named, it goes flat very early, but it is a good Rose for garden cultivation and cut flowers.

Mrs. W. J. Grant was shown in competition for the Gold Medal of the National Rose Society, both at the Crystal Palace and at Chester. In the former case it was unsuccessful, but easily carried off the honour at the latter show. It is a grand Rose, and as shown at these two meetings, evidently varies a little in its character. Those exhibited at Chester were far superior to the blooms staged at the metropolitan show. Jeannie Dickson, Mdle. Eugénie Verdier, and La France combined may perhaps be as true a description of this Rose as any. I was much struck with the grand shape and substance of the best bloom of this at Chester.

There are a few new Roses that are not yet in commerce which are certain to be heard of in the near future. Three of the best of these, and which have already been exhibited in competition for the Gold Medal, were—

Mrs. Arthur Wilson, a pretty Rose of a deep, and yet bright pink colour, a shade between Mrs. G. Dickson and Mrs. John Laing. It is not very full, and I will dismiss it with the few words written on the card by the judges: "Think well of it, and would like to see it again."

Merrie England is a sport from Heinrich Schultheiss, and is one of the prettiest and most unique Roses grown. It is irregularly striped or flaked with deep rosy-red upon a salmon-flesh ground, very much in the same way as a Carnation.

Mrs. Harkness is another sport from the same variety. This is a self colour of a pale and very delicate satiny-flesh shade, quite distinct from any other shade among Roses. Both this and the former sport are of equally good habit and sweet scent as the parent variety.

Messrs. A. Dickson & Son, of Ireland, have been sending out a good strain of Roses during the last few years, and I noticed four unnamed seedlings in

one of their competition boxes at Chester that were of similar type to Mrs. J. Laing and Gabrielle Luizet, and if they are equal to these Roses in other respects, they are sure to be acceptable to the Rose-loving public. A. P.

PLANT NOTES.

PLUMIERA RUBRA.

ALTHOUGH this is a very old Apocynaceous plant, having been figured in the *Botanical Magazine*, 8th vol., t. 279, yet it is not often seen in flower. It is a native of the West Indies and South America, and the genus was named after Plumier, a French botanist and traveller. The stems are tall and thick, and together with the leaves contain a quantity of milky sap. The plants are deciduous through the greater part of the winter, and at such time require to be kept somewhat dry. Water should be given plentifully when the plants are growing. Propagation may be effected either from seeds or by cuttings, the latter being allowed to dry before insertion. The flowers are produced at the apex of the stems in clusters; the corolla is funnel-shaped with a long tube, dull red shaded with rose, curiously sweet-scented. Its common name in the West Indies is "The Red Jessamine." This plant is generally grown in a stove temperature, but a plant, 4 feet high, is at present flowering in the Cactus-house at the Royal Gardens, Kew. *Lodoicea*.

THE WEEK'S WORK.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

HARDY PERENNIAL FLOWERS.—Now that the beauty of the summer bedders is over, the charm and freshness of the different kinds and varieties of herbaceous perennial plants still continue to please, if those exist in any quantity in the garden proper, and more especially when they are contiguous to the dwelling. I will indicate by name a few of these—*Aster formosissimus*, rosy purple; *A. lævis*, lilac, with yellow centre; *A. novæ-angliæ*, bluish-purple; *A. Robert Parker*, grey; *A. albus*, white; *A. versicolor*, white, shaded with pink and lilac; *A. Amellus besarabicus*, bright purple with orange centre; *A. pulchella*, light purple; *A. dumosus*, rosy-purple; *Helianthus multiflorus maximus*, numerous yellow flowers about 4 inches in diameter; *H. giganteus*, growing to a height of 7 feet, with yellow flowers; *Rudbeckia Newmanii*, large golden-coloured Marguerite-like flowers, a most useful plant for cutting from. *Betonica grandiflora*, producing a profusion of small white flowers; *Senecio Doronicum*, yellow; *Solidago* (Golden Rod), *Gaillardia*, *Achillea*, and *Montbretia crocosmæflora*, with erect spikes of deep orange and scarlet flowers, a bulbous plant, which should find a place in most gardens. Some other capital plants are *Anemone japonica* in its two forms; *Aconitum autumnale*, *Lobelia cardinalis*, *Phloxes*, and *Pentstemons*.

RHODODENDRONS, KALMIAS, AND AZALEAS.

The present is a good time of the year to make or prepare for the planting of beds of American plants, and to fill up vacant spaces, or plant new beds, &c. In planting the choicer Rhododendrons, it is necessary that the soil should be of a suitable nature, either peat, very light loam of a fibrous nature, i.e., a soil full of the roots of Ferns, grasses, &c., dug out to a depth of 2½ feet. The staple should be replaced with a compost which may consist of three parts of good peat or fibrous loam, and if peat be used, one-fourth may be added of sound loam, the ingredients being chopped up roughly and well mixed together before being wheeled into the hole. The plants, if from a nursery, are usually small, and may be provisionally planted about 2 feet apart, the soil being trodden firmly about them, and a heavy watering afforded them, repeating the watering at short intervals in the absence of heavy rain till the roots have pushed into the new soil. Among the many fine varieties of Rhododendrons in cultivation, mention may be made of the following:—*R. Alarm*, white centre, edged with crimson; *R. Barclayanum*, rosy-crimson; *R. candidissimum*, blush; *R. coriaceum*, pure white; *R. Nobleanum*, crimson; *R.*

Marchioness of Lansdowne, pale rose, with black spots; R. Lady Olive Guinness, white, spotted chocolate; R. Lady Skelmersdale, pure white, trumpet-shaped flowers; and R. Lady Eleanor Cathcart, having pale rose flowers, spotted with chocolate.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

MELONS.—At this season the plants do not exhibit the same tendency to grow away, as is the case at midsummer; nevertheless, it is equally important now, as then, to check exuberant growth, in order that the fruits may have as much of the declining sunshine as possible, as an aid to ripening and for imparting flavour. Afford the plants sufficient water at their roots to enable them to carry their fruits to the finish, but avoid supplying it on damp days, it being essential that a dryish atmosphere be maintained in the Melon-house or pit, and especially necessary to prevent the splitting of the fruits. The colder nights now will require a larger amount of fire-heat to be employed, and this, combined with the other altered conditions, as compared with those of the summer, will favour the increase of such insects as infest the Melon; keep, therefore, a sharp outlook for the enemy. Apply the usual nostrums to dispel them, if present, syringing with soapy water for red-spider, on some bright morning, when, with the ventilators open, the circulating air will carry off the excess of moisture before nightfall. In dull weather sponge the foliage rather than delay the job. Maintain, in average weather, a minimum temperature of 75°, and on very cold nights allow the warmth to fall 5° by the morning, which is better for them than much artificial heat.

TOMATOS.—Melon-houses that are cleared of their plants may be utilised for any Tomato plants which may have been grown in pots out-of-doors, previously washing the woodwork and glass with soft soap and hot water, using a hand brush. Remove also all the exhausted hot-bed soil, if it interfere with the position of the pots or plants. In most cases it will serve the purpose of a stage to stand the pots upon. Tie the Tomato plants loosely to the bottom wire, by way of making allowance for the bed settling. Keep a dry buoyant air in the structure. Well attend to stimulating the plants with phosphatic manures if the soil in the pots has become rather exhausted, and frequently shake the clusters of bloom to assist their fertilisation. These various details of Tomato culture are of importance at this season if a good set of fruit is to be obtained before winter is much advanced.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

THE CONSERVATORY AND GREENHOUSE.—At this season of the year these structures should be put in a thoroughly clean state inside and out, and any repairs that may be required finished forthwith. Climbing plants on walls, pillars, and rafters, should be looked to, and strong growers, like *Cobaea scandens*, *Passifloras*, *Tacsonia Van Volxemii*, &c., should have the shoots thinned out, so that the plants beneath or near them may not be robbed of much light during the winter. In the case of *Lapageria rosea*, which at the present time will be in flower, care should be taken not to damage the latter, but should insects infest the plants some means must be taken to clean them by sponging or otherwise, but leaving the thorough overhauling of the plants till the flowering season is past. Shading material which is removable, may now be taken down, and when it is dry, put into store for the season. Large Camellias and Orange plants which may have been standing outside, and which form part of the furnishing of the conservatory, should have their leaves and shoots cleaned of scale and dirt, and the pots and tubs washed or repainted before removing them inside. Should the buds have set too thickly on the Camellias, thin to about three on each shoot.

Supposing the directions given in previous Calendars have been carried out, there will be an abundance of flowering plants for the supply from now onwards. Early-flowering Chrysanthemums will make a good show till the late-flowering varieties come into bloom. Zonal Pelargoniums struck early in the season will be showing a quantity of bloom, and the plants should be assisted occasionally with some well-tried fertilisers. The late-flowering fibrous-rooted Begonias will now be found of much use, and by placing them at the warmer end of the house they will enhance the general display for some time to come. The late-flowering Fuchsias, if they

have been assisted with manure water, should be in full bloom, also *Celosias*, *Mignonette*, *Heliotrope*, *Nicotiana affinis*, *Cassia corymbosa*, and the early-flowering *Primulas*, and these, with the addition of *Coleus*, *Ferns*, *Palms*, &c., will give a gay appearance to the houses for some time longer.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

WINTER CAULIFLOWERS.—These will be ready to plant out under hand-glasses on a south border or in frames, and though the first is sometimes objected to because early plants can be raised in heat by sowing in January, I have a preference for it. The plants that are raised early in heat require a lot of hardening off, and careful protection at a busy time; moreover, the autumn-raised ones are the earlier if not cosseted in any way, as they certainly are firmer and heavier. The selected spot should have been heavily manured and trenched, a good surface-dressing of soot or lime being afforded before the planting is begun; wood ashes are good fertilisers, and may be plentifully used. Rake the border after treading all over, and put the hand-lights on beds about 3½ feet wide, with 2-feet alleys between; put nine plants under a glass. If possible, let the border be on a south aspect, more plants being lost from cold and damp soil than from actual frost. The tops need not be put on the glasses unless heavy rains occur, as if placed crossways over the top, the protection will be sufficient. Even in winter the top should be removed early on fine days. When nine plants are planted, five may be removed early in March, leaving the four corner ones to bring heads in May, those lifted forming a succession. To make sure, I put up a few hundred plants, and, should no losses occur, these are of use, as it is seldom one gets too many early Cauliflowers. Those who have not frame convenience for plants in pots may place them at the foot of a south wall, and with a slight protection these plants will give a supply in advance of those raised in heat.

BETROOTS AND CARROTS.—Though a few degrees of frost may do no harm, it is best to store these roots before winter sets in. For late spring use, and to furnish usable roots till the Egyptian Beet comes into use, there is none better than Dell's Crimson, a small-rooted kind, that keeps till very late in the spring; but plenty of earth, clean sand, or coal-ashes, should be used in the stacking of the roots. I like stacking the roots best, providing an outhouse or store just sheltered from rains is used; the cooler the better. When stored in the open, the roots should be laid in trenches, upright, soil a few inches deep being put above them, and over all a layer of litter in severe weather.

Carrots, when stored as advised for Beetroots, are comestable at any time; but if stored in trenches in wet soil, they do not keep well. Parsnips are much better left in the ground and dug up as required, merely strewing the ground with litter to keep out very severe frost. Turnips sown for late autumn and winter consumption should be stored in the open air in ridges covered with mould, or the roots may be placed against a wall with their tops pointing outwards, 4 inches of soil being put between the different layers, and some litter in hard weather laid over all. Medium-sized roots should be selected in preference to larger ones, the latter being bad to keep. Salsify and Scorzonera, and Chicory, should be treated like Parsnips.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

WATERING THE PLANTS.—The time is now coming when the application of water to the roots of Orchids will be a matter requiring careful thought and consideration. I have sometimes seen plants so shrivelled by drought as to be beyond recovery, and, on the other hand, I have seen them suffering from the effects of too much wet. Remarks have previously been made in reference to those species that desire exceptional treatment during their resting period; we will now take those which flower freely under an ordinary amount of care in this respect, as, for instance, the *Cattleyas*, *Anguloas*, *Cologynas*, *Laelias*, some of the *Oncidiums* and *Odontoglossums*, or, any other Orchid which has a definite resting season. When the new pseudobulbs of those are matured, a less amount of water is needed to consolidate; but to lay down a rule hard and fast is by no means my intention, because it is not practicable. What are required are discretion, judgment, and observation as to the state of the weather, the size of the plant, and whether in delicate or

robust health; in bright weather, or when a good deal of fire-heat is used, a plant might want water once a week, whereas, if the conditions were in an opposite direction the same plant might go for a month without water. Again, a plant in a large pot, having a huge mass of material round the roots, will not require water nearly so often as one in a small pot; or one portion of the house may be naturally dry, whilst another part may have reverse tendencies. It is well for most Orchids to be kept in a dry state whilst inactive, but it must not be overdone. These are a few matters which must be duly considered in the treatment of Orchids during their resting season.

GENERAL REMARKS.—The roller blinds will now rarely be used, and where not required again they should be taken down and stored in a dry place. *Cattleya aurea*, the most lovely of all *Cattleyas*, should after flowering be placed in a dry part of the house, and the sheaths opened down, as it is very apt to rot. *Odontoglossum grande* is just beginning to make a show. These generally used to be grown with the *O. Alexandræ*, but they appreciate more warmth. *Vanda cœrulea* should not be allowed to carry its flowers too long, but the spikes should be cut off, and placed in water. They will last a long time thus, and the plant will be greatly relieved. After flowering, this *Vanda* should have an airy place in the *Cattleya*-house for the winter, and if afforded a good rest, by being kept somewhat dry, it will keep healthy, and grow well another year. *Cattleya citrina* should be grown in an intermediate temperature during winter, as it is during this season that growth is made, and too much cold will cause a black spot to appear on the leaves.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

GATHERING AND STORING APPLES.—Such of these as are not good keepers will now require to be gathered from the trees; but varieties which keep a length of time should for some time longer remain on the trees, or they will shrivel in store, and be of poor flavour. All of the *Codlin* type are amongst the first-named, and are fit for early use only. Even these should be carefully dealt with. When gathering and storing them, it is always better to assort the fruit into two samples, the smaller and deformed ones to be consumed first, and the finer specimens, and these should be kept apart. No fruit should be gathered of which the seeds are becoming of a brown colour. Lord Suffield, Lord Derby, Ecklinville, Yorkshire Beauty, Worcester Pearmain, are among those that should be gathered forthwith—at least, in the warmer parts of the country. Before putting a fruit into the fruit-room, thoroughly sweeten and clean it in every part. If space is inadequate, the fruits may be put in layers of three or four deep; but the late keepers, and especially the choicer varieties, should not be piled one on the top of the other. Remember to gather fruit when it is quite dry. Apples will keep best, and retain their plumpness longest, in a cool, rather moist place, so long as the frost is kept out of it; but Pears, on the contrary, should be kept somewhat warmer—at least, those about to ripen should be, as they then acquire their fullest flavour.

PEARS.—As these become fit gather them, beginning with Marie Louise, Doyenné du Comice, Comte de Lamy, Pitmaston Duchess, Emile d'Heyst, Thomson's, Beurré Superfin, Darondeau, which are all of them Pears of the first rank. The season of these may be prolonged if the fruit is gathered at intervals. Glou Morceau, Passe Colmar, Winter Nelis, Josephine de Malines, Olivier de Serres, Easter Beurré, and other late ripening and late keeping varieties should be left on the trees as long as it is safe, say to the middle and end of the month. Keep all the sorts of fruits correctly named when in store, giving also the dates when they were gathered, began to come into use, and the length of time that each variety keeps in a usable condition.

LATE PEACHES.—Where these are still unripe, they will not be of the best quality; but it is possible to make them of passable flavour by placing them in a dry warm but airy glass-house to ripen, if the weather is cold and sunless. They may also be forwarded in ripening by putting some frame-lights in the front of the trees, leaning them against the wall—a method of protection that helps only the lower half of a tree.

GRAPE VINES.—Shorten back all side-shoots of any length; remove a few of the leaves, and more especially of white varieties of Grapes, and afford the Vines protection on cold nights.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

- TUESDAY Oct. 4 { Meeting of the Fruit and Floral Committees of the Royal Horticultural Society, at the Drill Hall, Westminster.
- FRIDAY, Oct. 7—Dundee Horticultural Association.

SHOWS.

- TUESDAY, Oct. 4 { Show of Michaelmas Daisies and Hardy Herbaceous Flowers, at the Drill Hall, James Street, Westminster.
- WEDNESDAY, Oct. 5 { Great Show of Hardy Fruits, Potatoes, &c., at Earl's Court Exhibition (three days).
Mayfair's Fruit Drying Apparatus will be exhibited at work in the Royal Horticultural Society's Garden, Chiswick, from 10 A.M. to 4.30 P.M.

SALES

- MONDAY, Oct. 3 { Clearance Sale of Nursery Stock and Greenhouses, at the Heaton Norris Nurseries, near Stockport, by Protheroe & Morris (four days).
Great Sale of Dutch Bulbs at Protheroe & Morris' Rooms.
Sale of Plants from Belgium, Carnations, &c., at Protheroe & Morris' Rooms.
Dutch Bulbs, Lilies, &c., at Stevens' Rooms.
- TUESDAY Oct. 4 { Sale of Dutch Bulbs at Protheroe & Morris' Rooms.
Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
Extensive Sale of Orchids, at Messrs. Seeger & Tropp's Nurseries, East Dulwich, by Protheroe & Morris.
- WEDNESDAY, Oct. 5 { Dutch Bulbs, Lilies, &c., at Stevens' Rooms.
- THURSDAY, Oct. 6 { Dutch Bulbs and Plants, at Protheroe & Morris' Rooms.
Important Sale of Nursery Stock, at the Chilwell Nurseries, Notts, by Protheroe & Morris.
Dutch Bulbs, Lilies, Orchids, &c., at Stevens' Rooms.
- FRIDAY, Oct. 7 { Nursery Stock, at Ponsford's Nursery, Brixton, by Protheroe & Morris.
Orchids, from Mr. F. Sander, at Protheroe & Morris' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.
- SATURDAY, Oct. 8 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Dutch Bulbs, Lilies, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—53°.6.

Those who are fortunate enough to have visited this unique seaside resort will recognise the "invalid's walk," shown in our illustration (fig. 65). It forms part of a valley which runs direct from the sea-margin inland for a distance of $1\frac{1}{2}$ mile or more, till it loses itself in the moorland characteristic of Dorsetshire. This valley justifies the use of the term unique, for where else can there be found such a valley, running, as this does, right through a populous town? where else can such a transition be seen from the barren sea-shore to the Pine woods, the ornamental shrubberies, the well-kept lawns and flower-beds in the very centre of the town, and thence gradually merging into the vegetation of the wild moorland, so attractive to the plant-lover? The transitions are really remarkable, and remind us, on a small scale, of the gradual change in the vegetation which the traveller meets with as he gradually ascends some alpine valley from the warm plains to the regions of snow and ice. Nor can we but admire the ingenuity with which a little trickle of water is made to look like a flowing river—a very tiny one—suggestive of Chinese gardening.

In spite of its diminutive proportions, it is pleasing to the eye, and the source of infinite gratification to the children who take as much delight in the sailing of their toy-boats in the brown streamlet as their seniors in the performances of their yachts in the green-waved Solent. This stream is confined within bounds in the dressed garden, stiff and formal in outline as if it were on its good behaviour; but gradually, as it nears its source, the canal gives place to a rivulet with its irregular margin bedecked with Forget-me-Nots and other wild flowers. The whole stream is so tiny, that one can hardly resist smiling at it; but it is so pretty, and so much pains have evidently been taken to make it look well, that we can but congratulate the authorities on difficulties overcome, and trust that in due time an abundant reservoir may be at their disposition, and enable them to do even better.

The prominent feature of Bournemouth is, of course, the Pines—they are everywhere, young and middle-aged trees, principally Pinasters and Scotch—who could have planted such a vast area? All honour be to him. He planted for posterity, but posterity is at least appreciative. The Pines, as is their nature, are getting scraggy, and it behoves the authorities to plant others to take the places of those which are prematurely old, and to infuse a little variety of form and colour. *Pinus insignis*, *P. densiflora*, *P. laricio*, *P. austriaca*, *P. contorta*, *P. montana*, *Cupressus macrocarpa*, *C. sempervirens*, *C. lusitanica*, *C. Benthami*, *Cedrus atlantica*, the Douglas Fir, are a few that occur to us as we write which would in all probability bear the sea breezes and thrive on the sandy soil of Bournemouth. Whether the silver firs and spruces would do equally well we do not know.

Rhododendrons form the chief under growth, and a magnificent appearance they present in June, even within a stone's throw of the sea, and "just across the street." The quantities in the valley and in the neighbouring chimes are prodigious, but here, again, a little more variety of colour would be acceptable, and some of the finer-coloured sorts might be mixed in with the too prevalent Lilacs.

The lawns in the central part of the garden nearest to the streets are gay with flower beds appropriately enough, but elsewhere it is a pity to break up the sweep of the lawn with such impertinences. In the shrubberies, *Escallonia macrantha*, as generally by the sea, forms a splendid evergreen, with its deep rich foliage, and spikes of bright pink flowers. In June, too, the single *Viburnum opulus* made a great display. In the mass, it is less effective than the common Gueldres Rose, but the individual flower-heads are more attractive. The common Bird Cherry was also particularly beautiful. Laburnums, Lilacs, *Buddleia globosa*, *Weigela*, *Leycesterias*—these were among the most showy of deciduous plants; whilst amongst evergreens, in addition to the ever-present Pines, there were Portugal Laurels, Darwin's *Berberis*, resplendent with orange and bronze flowers; *Daphne pontica*, *Hollies*, *Bays*, *Aucubas*, and the usual occupants of the shrubbery. In front are herbaceous plants and annuals of the most miscellaneous nature, but all presenting in their flowers a richness and brilliancy of tint conferred by proximity to the sea, and never rivalled inland.

Much has been done at Bournemouth, and the chimes and moors in the vicinity are charming, each in its way. It is evident, moreover, that such situations would form excellent experimental gardens for the introduction of the more beautiful New Zealand and Californian shrubs. Perhaps also some of the Mediterranean, Cau-

casian, and even Himalayan plants, might succeed. In any case, the Bournemouth people have only a few miles' distance to go to see what may be done in the way of "acclimating" plants in the gardens of Dr. ALLMAN and Dr. WALLACE, at Parkstone, and other examples may be found in the neighbourhood of Poole.

We have ventured to make some suggestions, and we add one more, plant the East Cliffe. Gorse seeds might be sown broadcast in the sand, and a plantation of double Gorse, double-flowered Brambles, Tamarisks, Elders, Privets, *Atriplex*, *Halimus*, *Pittosporum*, *Euonymus*, scarlet-barked *Cornel*. Most of these would succeed well on the cliff, and take off that barren appearance which the coast-line now presents.

ROYAL HORTICULTURAL SOCIETY.—On Tuesday, October 4, a show will be held in the Drill Hall, and prizes will be offered to amateurs for hardy herbaceous perennials. Mr. D. DEWAR will read a paper on "Michaelmas Daisies," at 3 P.M.

"KEW BULLETIN."—The September number comprises an article on "Caraguata" fibre, which is now ascertained to be the product of *Bromelia argentea*, a native of Paraguay, and which is botanically described by Mr. BAKER. The fibre is excellent, but there are difficulties in the way of cleaning it from gum. In an article on Lagos Palm oil, the preparation of the oil from the seeds is described and illustrated. Large as is the quantity exported, it appears that very much more is available were the resources properly utilised. Vanilla is the subject of another article. "Decads" of new plants and similar "decads" of Orchids are published, and enable the botanist to be made acquainted with the newly-discovered treasures in the herbarium.

MR. CHARLES EDMONDS.—We are sorry to hear of the death of Mr. CHARLES EDMONDS, late of Hillingdon Nurseries, in his sixty-third year, and to learn that he has unfortunately left his widow and family very indifferently provided for. Any contributions by kind friends on their behalf will be thankfully received by Mr. H. D. BEREKLY, No. 4, Gray's Inn Square, his executor.

MISS JAMESON FUND.—In addition to the sums previously acknowledged, we have received the following:—

A. B.	£5 0 0
Dr. CLEGHORN	1 0 0

THE LIME TREE MITE.—If we may judge from the specimens sent to us, this little *Acarus* is very abundant this season. The bark of the tree has a glazed appearance, as if covered with a thin layer of milk and water; on examination this appearance is found to be due to a dense web of silky fibres of extreme thinness. The mite is extremely abundant, of a pale orange colour, and about the size of the common red-spider; they suck the juices of the leaves, causing them to shrivel. Mr. MICHAEL obligingly adds the following particulars:—"The destructive *Tetranychus tiliarum* of MÜLLER (*Trombidium tiliarum* of HERMANN, *Flexipalpus tiliarum* of SCHEUTEN) is a close ally of the red-spider of our greenhouses. Some authors have considered it only a small variety of that species, which is probably an error. See ANDREW MURRAY, *Economic Entomology*, p. 107; HERMANN, *Mémoire aptérologique*, p. 42; DONNADIEU, *Recherches sur les Tetranyques*, p. 123; SCHEUTEN, *Einiges über Milben*, *Archiv. für Naturgesch.*, 1857, p. 104, &c.; ORMERON, *Injurious Insects*, p. 140. Sulphur is the best remedy."

PODACHÆNIUM ANDINUM.—M. ANDRÉ describes and figures in the last number of the *Revue Horticole* an example of what it was once the fashion to call a subtropical plant. What was meant was a plant of bold foliage and striking appearance, suitable for the decoration of the lawn, or as a component of flower beds during the summer. Of plants of this character, none was more sought after than *Ferdinanda eminens*.

M. ANDRÉ tells us this was a misnomer, and that the plant was really a *Podachænum*. Now he adds another species, which he himself collected on the Andes of New Granada, and which he describes and figures as *Podachænum andinum*. The plant is of bushy habit, with broad-lobed leaves and prominent nerves. The heads of flowers are in panicles, the ray florets white, those of the disc yellow.

ROSE OF JERICHO.—In the *Gartenflora* for September 15 is published a figure of a Composite (*Odontospermum pygmaeum*), which shrivels when dry, to expand again if soaked in water. Our contemporary calls this the "Echte Rose von Jericho"—the genuine Rose of Jericho. Other plants having similar properties are the Crucifer,

Hunter's Hill, on August 15. Mr. FITZGERALD, who had been in the colony for thirty-six years, was sixty-one years old at the time of his decease. He was a native of Tralee, county Kerry, Ireland. Mr. FITZGERALD took a great interest in botanical questions, and was the author of an admirable illustrated work on Australian Orchids, which is a substantial contribution to our knowledge of the structure and life-history of Australian Orchids.

ORCHIDS AT HOME.—"Eria, Cœlogyne (Wallichii, maculata, and elata), Cymbidium, Dendrobium, Sunipia, some of them flowering profusely; and though freely exposed to the sun and wind, dews and frosts, rains and droughts, they were all fresh, bright, green, and strong, under very different

sepulchre as the furniture of the last resting-place of their beloved ones. Many of these floral remains are so well preserved that, after being treated with warm water, they can be handled like modern herbarium specimens. The colours, too, are preserved in a remarkable way. The most important matter in connection with these plants is their age. The remains of funeral-food are found in the tombs as far back as 3000 years before Christ. Five hundred years later grains of Mustard-seed, capsules of Flax-seed, Gourds, Lentils, Beans, Figs, Juniper-berries, and other edibles, also Pine-needles are found. The richest acquisitions in leaves and flowers to the herbarium were made from the tombs constructed between the eighteenth and eleventh centuries B.C. Among the flowers chiefly employed in floral



FIG. 65.—VIEW IN THE INVALID'S WALK, BOURNEMOUTH. (SEE P. 404.)

Anastatica hierochuntica, and the *Selaginella lepidophylla*. The soil of Jericho must be peculiar to produce such "Roses," and the topography of Jericho—or perhaps we shall do well to take the term Rose in a very broad sense indeed.

IRISH AGRICULTURE.—A Government return before us shows that the total area in Ireland under crops in 1892 is 4 888,784 acres, being a net increase over 1891 of 66,403 acres. The area under Wheat culture had diminished, but that under Oats had increased by no less than 10,911 acres. Potatoes showed a decrease of 13,390 acres—a continuous and steady fall each year since 1888. There has been an increase in live-stock generally, but a decrease in pigs.

MR. R. D. FITZGERALD.—We greatly regret to learn, from the *Sydney Daily Telegraph* of August 16, of the death of Mr. R. D. FITZGERALD, late Deputy Surveyor-General, which took place at his residence,

treatment to that to which they are exposed in the damp, unhealthy, steamy Orchid-houses of our English gardens." Sir J. D. Hooker, "*Himalayan Journals*," new edition, p. 500.

A DOUBLED ORANGE.—Mr. STURZ, of Porto Alegre, sends us a photograph showing complete union of two Oranges with, as usual, a partial obliteration of some of the cells or carpels along the line of junction. Such cases of synanthry or syncarpy are by no means uncommon.

THE OLDEST HERBARIUM IN THE WORLD is in the Egyptologist Museum at Cairo, and consists of a collection of dried portions of plants. These portions of plants and flowers were taken from wreaths and garlands in the coffins with mummies, where they were placed by the ancient Egyptians as death-offerings, and from edible plants which were set in earthen vessels on the floor of the

decorations for the dead were the blue and white Lotus, the red Poppy, the Oriental Hollyhock, Crown Chrysanthemum, Safflower, Pomegranate-flowers, Willow-leaves, grasses, and Peppermint. Celery-leaves came into requisition later, and Onions, Leeks, and Garlic played an important part in the offerings to the dead. One of the general conclusions drawn from this herbarium is, that Egypt has sustained no appreciable climatic changes during the last 4000 years. *Garden and Forest*.

PRUNES IN CALIFORNIA.—Some interesting particulars are given by Consul DONOHUE, of San Francisco, on the subject of the cultivation of the Prune in California. It is to France that California is indebted for this healthful and profitable fruit. LOUIS PELLIER, a French sailor, arrived in San Francisco in 1849, and went to work in the mines in Trinity county. He did not succeed well there, and

finally removed to San José early in the fifties. Here he established a nursery. He soon after induced his brother PIERRE to join him in California, and the two brothers worked the nursery together until the spring of 1856, when PIERRE returned to France in order to marry a girl to whom he was engaged. Combining business with pleasure, he secured a large number of cuttings of Prunes, Grapes, and other fruits, which he brought back with him on his return. The Prune cuttings were procured in the Villa Neuve d'Agen, from whence the Common Californian Prune derives its name of "Petite Prune d'Agen." They were carefully packed in a box about 16 inches square by 4 feet in length, which was lined with cloth, and every precaution was taken to insure the safe arrival of what has since proved the germ of one of the most important industries of California. The importance of PIERRE's experiment was not appreciated for about a quarter of a century after he began it, but at length the superiority of California as a fruit-growing State forced itself upon public attention, and the Prune was given a trial. From that time the growth of the industry has been phenomenal. It is estimated that in California, in Santa Clara county alone, when the trees now growing shall have matured, the annual product will be over 40,000,000 lb. of dried fruit. The most extensive single Prune orchard in the State is now in the Salinas Valley, in San Luis Obispo county, on the eastern slope of the coast range, near the town of Templeton. In this orchard there are nearly 300 acres of Prunes in one body, containing 324,000 trees. The first Prunes were grafted on Plum stock, but this has grown into dis-favour on account of the tendency of Plums to throw out suckers and other stocks, the Peach, the Apricot, and, lastly, the Myrobalan Plum, have come into use. The principal markets for Californian Prunes are Chicago and New York. The quantity now consumed in the United States is enormous. It will be years before the demand on the other side of the Atlantic can be supplied, and when that shall have occurred, there will be the markets of Europe and the rest of the world to supply, for the California Prune is said to be superior to the French Prune in flavour, while it will keep better and longer, without sugaring, than the latter.

CYPRIPEDIUM SANDERSIANUM X.—This, one of the rarest and most distinct hybrid Cypripediums, is now in flower at Mr. William Bull's establishment. It is the plant purchased of Mr. LEE of Leatherhead for 300 guineas, the price conveying in some measure an idea of its choice and remarkable character.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual dinner of this Society will be held on Wednesday, the 5th inst., at the Cannon Street Hotel, at 6 P.M. The chair will be taken by J. FRASER, Esq., of Lea Bridge. We trust there will be a good attendance.

LOTTERY.—Our attention has been called to the circular and ticket, of which we append a copy, and we have been asked if the matter has our sanction. To this we can only reply that we know nothing whatever of the matter, that no name is appended to the documents, and that, as a matter of opinion, we doubt the morality and the legality of such lotteries.

A GRAND DRAWING.

To raise Funds for the erection of a Boys Orphanage, under the care of the Sisters of Charity, St. Elizabeth's House, Bullingham, Hereford. Tickets, 3d. each. Several valuable and useful prizes. To be drawn November 15, 1892. Winning numbers will be published in the *Gardeners' Chronicle*, November 26, 1892.

"Dear Sir,

This little Lottery is exclusively amongst the Gardeners of England and Wales, we trust therefore to your Charity, that no one will refuse to take or dispose of the enclosed tickets; though the sum of 2s. 6d. may appear small, the help to us will be great. We pray God to bless all Benefactors. Anyone taking or disposing of four books of Tickets (10s. worth) will be entitled to a Ticket for the All Prize Drawing."

QUEENSLAND FERNS.—Mr. F. M. BAILEY, the Colonial Botanist of Queensland, has published a series of lithographic illustrations of the Ferns of that colony. The work is published under the auspices of the Department of Agriculture, and is intended for the Fern-lover rather than for the student. The plates number 190, and are sufficient for the purpose. The name of each Fern is given, together with an indication where the plant is described in full. An alphabetical index supplies the synonymous and vernacular names, so that the work, though unpretending, is calculated to be very serviceable.

TREATMENT FOR SMUT IN OATS AND WHEAT.

—The September *Bulletin* of the Michigan Agricultural College contains an account of the heavy losses caused to farmers by smut in Oats and Wheat, and describes the Jensen, or hot-water method of treatment for the same. For Wheat, the following treatment should be adopted:—"Have two kettles of water, not more than 2 feet apart. Kettle No. 1 should contain warm water (from 110° to 130° F.). The water in kettle No. 2 should be heated to 135° F. The first is for the purpose of warming the seed preparatory to dipping it into the second. Unless this precaution is taken, it will be difficult to keep the water in the second vessel at the proper temperature. The seed to be treated should be placed in a sack that will allow the water to pass through readily (a coarse gunny sack is good). According to the size of the kettle, the sack may contain from one-half to 1 bushel. A less amount will make the process slow, and a larger amount will be unwieldy, and some of the kernels may escape treatment. Dip the Wheat into kettle No. 1, lifting it out, and plunging it in two or three times. This process will take but a minute or so. Now dip it into the second kettle with water at 134° or 135°; keep the Wheat well stirred. Perhaps there is no better way than to lift it out and plunge it in several times. This should be continued ten or fifteen minutes, according to the temperature of the water, and then spread out to dry. A second person should regulate the temperature of the water and do nothing else. Probably it will be found best to have a fire under kettle No. 2, sufficient to raise the water to 145° or 150° Fahr., and then add cold water to reduce it to 134° or 135° Fahr., when the seed is put in. If at the end of ten minutes the temperature of the water has not been reduced below 133°, the seed should be removed, and dipped into cold water. If below 133° F. it should be left in fifteen minutes, or even longer if the temperature should fall below 130° Fahr. The treatment is essentially the same for Oats, except that the temperature of the water in kettle No. 2 should be 139° or 140° Fahr. when the Oats are put in." The importance of taking some such precautions as the above against the spread of smut will be realised by reading the following summary relative to it, and to its effects in Michigan:—

1. The loss to Michigan this year in the Oat crop alone, caused by smut, will exceed 1,000,000 dols., and this is a low estimate.
2. The smut of Oats, and the stinking smut of Wheat, are parasitic plants.
3. The spores of these smuts attach themselves to the kernels of Oats or Wheat, and are sown with them.
4. The spores germinate at about the same time the seed germinates, and in some way enter the young plant and live upon it until, finally, the head of smut appears.
5. Both of these smuts can be entirely treated at a slight expense by the Jensen or hot-water treatment.
6. For Wheat, the temperature of the water in kettle No. 2 should be 134° or 135° when the seed is put in. The seed should be taken out in ten minutes if the temperature does not fall below 133° F.; and if below 133°, it should be left in fifteen minutes, or even a little longer if the temperature should fall below 130°.
7. For Oats, the temperature of the water should be 139° or 140° when the Oats are put in, and they should be taken out in ten minutes if the temperature

is not below 135°. If below 135° F. at the end of ten minutes, they should be left in fifteen minutes, unless the temperature falls below 130° F., when they should be left a little longer. During treatment, see that the temperature of the water in kettle No. 2 does not rise above 135° for Wheat, and 140° for Oats.

8. Professors JENSEN, SWINGLE, KELLERMAN, ARTHUR and others have found that this treatment not only removes the smut from the crop, but improves the growth and increases the yield.

9. The increased yield is sufficient to pay for the labour and trouble of treatment several times over.

10. Do not conclude that you have no smut because you did not see it. In the case of Oats, the smut is mostly blown off before harvest, and the smutted stalks, being shorter than the healthy ones, are not observed.

WILLIAM R. SMITH.—The *American Florist* gives an excellent portrait of President-elect W. R. SMITH, of the Society of American Florists:—"Mr. SMITH was born in Scotland in 1828, and served as an apprentice at Lord ELCHO's. He then served as journeyman and foreman for three years in famous gardens of sundry noblemen, serving one year in each place. He was then admitted to Kew, where he served the usual two years. While there he met Professor ASA GRAY, and formed a friendship with that grandest of botanists, which lasted until the Professor's death. He landed in Philadelphia, served for a few weeks at Mr. DUNDAS', then a famous place, and was then sent by Mr. ROBERT BUIST to a swamp in the city of Washington, with three small greenhouses, which was there, and had been called the Botanic Garden on the map only. It contained the rare plants collected by the Wilkes exploring expedition; but that was about all, and it was certainly in a very crude condition. Mr. W. D. BRECKENRIDGE then had it in charge. The death of Mr. DOWNING promoted Mr. BRECKENRIDGE to the position of landscape gardener of the public grounds. Mr. SMITH was placed in charge of the greenhouse, under Mr. BRECKENRIDGE for the first year. Mr. BRECKENRIDGE, who still lives, had been around the world with Captain WILKES, and had collected many rare and valuable plants. He is the author of a valuable book on Ferns. The following year a special appropriation was made for the garden, and Mr. SMITH was appointed its superintendent in 1854, which position he has held ever since. The growth of the Botanic Garden, its importance to the country in furnishing rare trees and plants to every section, in determining by practical experiment the species most suited to different climates, and in making known those that are most desirable for shade trees in the cities, are strong testimonials to his industry and devotion to his work."

PLANT PORTRAITS.

DIEFFENBACHIA MELEAGRIS.—An Aroid from equatorial South America, with green leaf-stalks, spotted with white; lanceolate leaf-blades, deep green, with a few spots. *Illustration Horticole*, t. 159.

LABISIA SMARAGDINA.—A stemless Myrsinad. Leaves oblong, obovate, dark green. Flowers small, pink, numerous in much-branched panicles. It was exhibited at the Temple Show in May last. *Illustration Horticole*, t. 160.

BELGIAN NOTES.

WE learn with pleasure, which many horticulturalists will share, that M. Fréd. Burvenich père, Professeur de l'Ecole d'Horticulture de l'Etat, of Ghent, and author of several horticultural books, has been made "Chevalier du Mérite Agricole de France," at the same time with MM. Rodigas and Ad. Vandenbeede, of Lille.

Polygonum orientale fol. var., commonly called Persicaire du Levant, is not only an excellent bee plant, but very ornamental in habit and in foliage, which is green and yellow. It is exceedingly effective grown singly on lawns, and is increased by seed.

Magnolia grandiflora Gallisoniensis.—This noteworthy variety of *M. grandiflora* is largely grown at Angers for the Paris markets, where it is sold as a decorative plant for halls, court-yards, &c. At Angers there are boulevards planted with this *Magnolia*, which does especially well in the maritime climate of Nantes. In the squares of Angers, the plant is alternated with *Eriobotrya*, *Laurustinus*, *Elæagnus argentea*, &c. In Belgium it is almost unknown, except in greenhouses, where it blooms well. The flower is very large, cream-coloured, and suggests that of a white Water Lily. In the centre of this pure, cold-looking blossom, the stamens and pistil rise in a cone. The scent is peculiar, and agreeable; the foliage is bright, shining green, and very ornamental—altogether an excellent plant for greenhouse or conservatory.

New Sonerilas.—La Société Horticole, Louis Van Houtte père, has lately obtained through the skill of one of its foremen, M. Marchand, three excellent hybrid *Sonerilas*, remarkable for the unusual size of the foliage. These three hybrids are:—

1. *Sonerila Souvenir de Madame Van Houtte*.—Foliage like that of a *Bertolonia*; the adult leaves are about 6 inches long by 3 broad; they are deep blackish-green, spotted with greenish-white, with a polished appearance. From each little spot springs a hair, and the general effect is thus very peculiar; the edges of the leaves bear short hairs at regular distances. The petiole and mid-rib are claret-coloured, the veins very distinct. The female parent of this hybrid is *S. Hiba*, the male a newly-introduced species. It appears to be easier to cultivate than other known *Sonerilas*, and is sturdy in growth.

2. *S. Léopold II*.—Leaves narrower, but a quarter of an inch longer than those of the last-described species. The foliage also is darker than that of the above, the spots about the same colour, but larger. A hybrid from the same parents.

3. *S. Marchandix*.—Foliage nearly black, leaves smaller than those of the two preceding varieties, the spots less numerous, but with pinkish tint on the edges and tips of the leaves.

*Some new hybrid Bertolonia*s.—At the above-named establishment there are some new *Bertolonia*s from *B. Van Houttei* × *B. roseo-punctatissima*. M. F. Marchand has produced the greater part of the varieties sent out by M. A. Bleu, so that no doubt the two hybridisers operated in the same manner on the same species, and we have chosen for notice about a dozen of the best among the many new varieties. The hybrids are not yet named, so we will distinguish each by a number.

1. A variety resembling *B. Madame la Baronne A. de Rothschild*, but will be of greater height, the colour brighter, a peculiar shade of pink, well set off by the bronze-green background; these handsome leaves are longer and broader than those of *M. Bleu's* variety.

3. An excellent variety of the habit of *B. Van Houttei*, and the same markings, but in pink; the foliage large, the veins bright silvery-white at base, shading into pink; the tip of the leaf is quite pink.

4. A hybrid with pink veins deeper than those of the other varieties, the leaves longer.

5. Is quite similar in every respect to *B. Madame Alp. Bleu*.

6. A dwarf variety, with leaves 7 by 4 inches, of a bright green colour, speckled with pink, resembling *B. albo-punctatissima*; the habit is that of *B. Van Houttei*. The young leaves are coppery-red, the older ones retain a border of the same colour, and the adult leaves have but a tinge of it, which is accentuated on the margin.

8. Foliage dull green, nerves white, spots pink, in the large leaves the green predominates; habit good.

9. Another good variety, with large foliage so shaded as to appear "shot;" ground-colour velvety black-green, mid-rib bright silver, veins pinkish-white or pink, spots bright pink.

16. A plant of capital habit, leaves very large, elliptical; mid-rib wide and undulating, bright pink. The very large spots are of the same colour.

17. J. C. Stogdon, dwarf, large-leaved variety; in

each part of the leaf, which is bounded by the principal veins, there are innumerable specks of bright pink, which are very effective against the bronze-green background.

18. Belongs to the category of *B. roseo-punctatissima*; leaves large, deep green, with clear green veins, and a pretty metallic lustre over them, the spots less numerous, but of a very delicate pink.

20. A more uniformly-coloured hybrid than are the others. Bright carmine, as is No. 1.

24. A variety with leaves $6\frac{1}{2}$ by 4 inches; the base and half the blade pink against a green ground; the top green, with veins and spots of white. *Ch. de B.*

THE APIARY.

FEEDING UP.

THERE should not be any further delay in giving stocks their full complement of food for the winter. All hives short of 20 lb. of stores should have sufficient syrup given them to make up this weight, which will last them well into next April. The syrup should be made by boiling for a few minutes 5 lb. of the best granulated or lump sugar to one quart of water, and given to the bees warm. A rapid feeder that will hold 20 lb. of syrup if necessary, is the right kind to use, although a glass pickle-bottle covered with muslin and inverted over a piece of perforated zinc, answers the purpose.

Winter Passages.—Winter passages of some kind or other are a necessity for successful wintering, and should on no account be overlooked. Two pieces of stick, each about half an inch thick, laid at right angles over the frames, and then covered with the quilt, is a rough-and-ready way of providing them. A piece of thick bamboo cut in halves, answers much better. If the latter is not procurable, it does not take long to make passage-ways by taking a piece of deal 2 inches wide, and three-quarters of an inch thick, and scooping out the under-side with a half-round chisel. If the top edges are nicely rounded off, the quilt fits down close, and makes it a better job. They should be about a foot in length.

Antiseptic Quilts.—Attention has lately been drawn to the use of antiseptic quilts as a prevention to the diseases to which bees are subject, and in districts where foul brood is known to exist it certainly would be worth the while of beekeepers to try them. The material used is a kind of tar-felt, commercially known as "Latus" felt, and it can be obtained from some of the dealers in appliances.

Entrances.—Entrances that have been narrowed to prevent the inroads of wasps and robber-bees, should soon be opened to about 6 inches where American-cloth is used next the frames, for unless sufficient ventilation is provided, the moisture condenses inside, often causing dysentery, and the combs to become mildewed and rotten. An eke, or raiser, put under hives, is a good plan, so as to make the bottoms of the frames stand 3 inches or so above the floor-board, as this insures perfect ventilation, and prevents any possibility of the entrances getting blocked in the winter with dead bees. *Expert.*

THE HERBACEOUS BORDER.

RUDBECKIA SPECIOSA.

IN the herbaceous border, this Composite is making a brilliant show. We find that the cut blooms are excellent for filling vases and flower-glasses, being both pleasing to the eye, and lasting. As is well-known, the disc is of a blackish-purple shade of colour, and the florets of a deep orange. The plant, which grows to a height of 2 feet, is easily increased by divisions, and being very hardy, good clumps may be obtained in a short time by planting in good well-drained soil. Where there is much flower-bedding, this species might be used for the middle part of large beds; and besides remaining from year to year, its use would render the propagation of tender plants unnecessary in some measure. *H. M.*

HOME CORRESPONDENCE.

CALADIUMS.—To winter these Aroids well, and without experiencing any loss through rot, great care should be taken that the plants are not left too long in the cooler houses, where they may have for sometime been used as decorative objects, this being a fertile cause of the tubers wintering badly. If these are not exposed in a moist state to a low temperature, but gradually dried off in a warm one, and stored in sand in a warm dry place, 55° to 60°, almost every tuber will keep sound. *H. Markham.*

WEIGELA ROSEA AS A WALL PLANT.—It may not be generally known that this shrub makes a capital wall plant. I saw it growing at the foot of a cottage wall with a western exposure, and a great success it was, literally smothered with its rosy-pink flowers. This *Caprifoliad* is by the cottagers in the neighbourhood known as the Apple-blossom plant. In this case great pains had been taken with the plant in question in neatly keeping the shoots tied in pretty close, therefore, it was truly a neat wall plant. No doubt the warmth derived from the wall assisted in its flowering so finely. *E.*

HELIOTROPE SWANLEY GIANT.—This is unquestionably the best of the *Heliotrope* genus for bedding use, and is not nearly enough employed in the flower garden. Under good cultivation the plants grow 2 feet 6 inches high, even when they are but small when planted. The flower trusses often measure 10 inches across, while the colour and perfume leave little to be desired. Now is a good time to take cuttings of the short side-growths which have not flowered, wherewith to provide stock for next year's display. If these are inserted to the number of six in a $3\frac{1}{2}$ -inch pot, and afforded a slight bottom-heat, they quickly make root; they are best wintered in the same pots without disturbing them. *Heliotropes* to be effective out-of-doors need to be planted in bold masses, this is a point not to be lost sight of in taking the cuttings. *E. M.*

TWO FINE MULBERRY TREES.—A few days ago, when looking through Trafalgar Park Gardens, Earl Nelson's beautiful place near Salisbury, my attention was drawn to a remarkably fine specimen of the black Mulberry growing in one of the kitchen gardens, and within 15 feet north of a high wall. The trunk is straight for about 5 feet from the ground, and has a circumference of 5½ feet; the head of branches is of good size, healthy, and well cropped with good-sized fruit. The situation of the gardens at Trafalgar is very high—I should say, as high as the spire of Salisbury Cathedral. The soil is a light loam, of an average depth of about 18 inches. Another Mulberry tree, which is more remarkable for its healthy, vigorous, and fruitful condition and symmetrical outline than for its great size, is growing in Dr. W. D. Wilkes' bijou garden, The Canal, Salisbury. This tree stands in the centre of a well-kept lawn, which towards the end of August is strewn with fruit of the Mulberry, which, for size, colour, and flavour, excel any hitherto seen or tasted by the writer. *H. W. W.*

HARRISON'S MUSK.—This is one of the best of summer bedding plants it is possible to employ. The growth is free, yet neat, and always covered with bloom, while the perfume is delightful, especially when associated with *Heliotrope*, as it is here; planted in a large mass as a carpet to this, dotted here and there in the same bed are plants of a dark-coloured *Ricinus cambridgensis*, and some well-coloured examples of *Zea gracillima*. The best way to preserve a stock of this Musk through the winter is to dig it up from the beds in flakes, plant it in boxes of sandy soil, and winter in a cool house or frame free from frost, and keep the Musk neither in too wet nor too dry a state, but just in a happy medium. By dividing the roots in the spring, a quantity of plants can easily be raised for another season. *M.*

TUBEROUS BEGONIAS AND SUB-TROPICAL PLANTS.—With a view to relieve the somewhat flat and formal appearance of some beds planted with tuberous Begonias, some subtropical plants were introduced, such as *Ricinus Gibsoni*, *Abutilon Thomsonianum variegatum*, variegated Japanese Maize, the blue Gum Tree, and *Melanthus major*, with satisfactory results. These plants were put out at a distance apart, which prevented their spoiling the effect of the Begonias by crowding; each being

a specimen in itself, all harmonised with the Begonias below them. Independently of the good effect brought out by subtropicals, the shade which they afford the Begonias acts beneficially in bright weather, and when the flowers of Begonias become smaller, if the beds are not kept moist, which in many gardens is not possible. In connection with tuberous Begonias as bedding plants, the employment of hardy plants of low growth has again been a success. This season I planted *Sedum lydium*, the deep green colour of this plant making quite an agreeable contrast to the varied colours of the flowers above, as well as with the subtropical subjects. As a conservator of moisture in the soil, the *Sedum* has been very useful this dry season. E. M.

EUCALYPTUS GLOBULUS, 110 FT. HIGH.—The large tree here shown in the photograph is *Eucalyptus globulus*. It was somewhat difficult to get a good plate of it, owing to the large size of the plants near it. The plants showing in the front at the bottom of the picture are scarlet *Rhododendrons*, varying from 20 to 40 feet in height, and directly underneath the *Eucalyptus* is a nice plant of *Phyllocladus rhomboidea*, about 15 feet in height. The Conifer showing on the left-hand side of the *Eucalyptus* on the top of a large boulder of rock is *Cupressus macrocarpa*, a tree about 30 feet high, and to the left of that is a tree of *Eucalyptus resinifera*, 35 feet in height. The tree, showing on a rising ground to the right-hand side of the *Eucalyptus* is *Acacia decurrens*, about 20 feet high. These facts are mentioned so as to give a correct idea of the size of the specimen tree *Eucalyptus globulus* here shown. The tree was planted by the present proprietor in the spring of the year 1862, so that it is about thirty years old; the height of the tree is about 110 feet, and it has a girth at the base of the trunk of 10 feet 3 inches. It is growing in a warm but very dry situation on a solid foundation of conglomerate rock, and with very little soil, consequently it does not grow so fast as it would do on a very rich soil of great depth. This, no doubt, has enabled the tree to withstand the effects of severe frosts, making slow growth, but thoroughly well-ripened wood. It has steadily increased in size and firmness up to its present dimensions. It flowers very freely, and bears a great quantity of seed which germinates very well, plants having been raised from it several times. The photograph is by Mr. G. M. Jeune. T. Sharman, Rozel Bay, Jersey. [With this came an excellent photograph, which, considering that similar trees have been figured previously, though none so large as this, we do not reproduce. We thank our correspondent for its transmission. Ed.]

WATERING WALL FRUIT TREES IN AUTUMN.—Very few gardeners give their wall fruit trees sufficient water at the roots in the autumn months, for after the crop is gathered, Peaches, Plums, or Cherries are considered to want nothing for a time. Take, for instance, the present season here in South Hants, we have had this year but 12.50 rain up to the present time (September 14), which is much below the average rainfall. During the last month 3 inches of rain fell, but the greater part came from one direction only—south-west—which, of course, prevented fruit trees growing against an east wall receiving either their share or sufficient to thoroughly saturate the soil near the wall, and it is surprising what a quantity of moisture a brick-wall alone will absorb. The overhanging coping on the tops of walls, so useful in the spring when the trees are in bloom, prevent to some extent rain falling close to the wall when it comes from the opposite side, and so do the leaves. Now, if the soil about the roots of one part of a tree is not in a sufficiently moist state, how can the tree be expected to produce stout fruit-buds? It gets really prematurely ripened, and wood and buds are therefore in an immature state. If the weather be very dry after the fruit is gathered from our Peach trees, we give the soil near to the wall at least two thorough drenchings with water before the leaf falls, and Plums one good soaking of water, and this immediately the fruit is all gathered off the tree. Peach trees growing in different aspects out-of-doors seldom get enough rain or snow, or we should see better examples of Peach growing oftener than we do. I look upon the Peach crop as the most certain of all hardy fruit. If the trees are in the right condition there appears to be no reason why we should miss a crop of fruit at all in any year; and now that the number of varieties has so increased,

ripe fruit can be had for nearly three months out-of-doors, which is a considerable advance on former conditions. For such a return as this, it is but little to devote some spare hours to supplying moisture to the roots at a time when some persons suppose that it is not wanted. S.

ROSES IN BRITISH GUIANA.—May I ask some of your readers to help me to get information on the following point? For some years past, I have tried to grow Roses in my garden in tropical America—in British Guiana; and though I have succeeded with certain kinds, I have never succeeded in finding any dark red Roses which will succeed in those parts. Probably some of your readers, with considerable experience of forcing Roses, might be able and willing to give me a hint, especially if guided by information as to the kinds which succeed in Guiana. And as there must be many of your readers who are interested in tropical gardening, any information which you may be able to give on this point will be of interest to others besides myself. Tea Roses naturally do best with us—the more double ones, such as *President*, better than the more single kinds, such as *Madame Falcot*. Some of the descendants of *Gloire de Dijon* do admirably—notably the comparatively new *Roses Kaiser Friedrich* and *Kaiserin Friederich*. But the best of all Roses with us is the old favourite *Maréchal Niel*. The next best to that is *La France*, which is an almost perfect Rose for the tropics, there retaining not only its colour and form, but also, as very few do, its perfume. I shall be greatly obliged if any one will give me any hints which will lead me to any good red Roses, especially dark red Roses, which will stand heat. I think, too, that both to me and others any hints as to the exact best time and method to be observed in transporting Roses long distances to the tropics might be valuable. *Everard F. im Thurn*.

DELPHINIUMS.—These have been so improved or late years that they are now about the finest and most showy plants one can have in the garden, the most suitable place for the tallest varieties being in the foreground of shrubs, or at the back of wide borders, where their fine spikes of flowers are very effective. Some of these tower up to a height of 12 feet, and branch freely out, giving flowers of great size, and of various hues, as they run through nearly all the shades of blue; some are double, but the single ones are the best. Among the older kinds my favourites are: *D. formosum*, which has been out many years, and will take a good deal of beating; and another, named *Bella Donna*, is a very fine thing. This latter is a lovely pale blue, and is a very shy-seeding variety; but most others are only too free in that respect, and should, if not wanted for sowing, be relieved of them, as they weaken the plant, and prevent late flowering. The seeds being ripe now, anyone who would have Delphiniums should get a packet from those who make a specialty of the plants, and sow at once, as by doing so the plants will be strong enough to blossom next year. A good way of treating them is to prepare a spot on a warm sunny border, by putting an inch or two of fresh fine rich soil, and sow on that, just covering the seed, and pressing the soil down firm and smooth, when, if a handlight is placed over, and kept closed, the seed will quickly germinate. They should be planted out in the spring to the positions where they are to flower. The ground should be prepared for them by being deeply dug, and having a good dressing of rotted manure worked in. I generally plant in threes, and afterwards pull out or destroy the two that are inferior, and leave the best to stand permanently, if deserving of space. Those who would have named kinds may get them now, or wait till spring; but if obtained at once in pots, they will be all the stronger. Delphiniums increase readily by division of the crowns, and the best time for doing this is just when the plants start to grow, when they may be safely taken up, cut through, or pulled apart, into as many pieces as the crown buds will allow. J. S.

LAPAGERIAS.—The *Lapagerias* here (Nash Court, Faversham), are now, though a little past their best, worth travelling many miles to see, it being a sight I venture to say, is seldom met with. *Geo. Humphrey*. [The Nash Court variety of *Lapageria rosea* is one of the finest, and it has been noticed in these pages, January 14, 1888. It has larger leaves and flowers than the ordinary form of *L. rosea*. Ed.]

THE NATIONAL ROSE SOCIETY.—Was it not Canning who said that nothing was so fallacious as facts, except figures; and when we find rival Chan-

cellors of the Exchequer taking an entirely different view of the same figures, it is hopeless for meaner mortals to do better. However, let me say this, in answer to Mr. Grahame, that the tables were neither made by me, or for me; they were drawn up by a gentleman who has never exhibited a Rose in his life, and who had no personal interest in the matter whatever. Understanding that he had done so, and knowing from long experience how accurate he was, I asked him to let me have it; this he courteously did, and *pace*, Mr. Grahame, I have so much confidence in his accuracy, that I decline to alter my statements. Mr. Grahame is satisfied, and so am I, "which makes it very nice for all parties." *Wild Rose*.

A KNOTTY QUESTION.—The letter I give below from the *Scotsman* touches a point which must have occurred to many of your readers. In many gentlemen's gardens, it is a well-known fact that they can only be kept up by the selling of the produce. But many gentlemen only sell their surplus fruit, and thus bring down the price of the grower for the market. But how these latter individuals, and those who are well off who sell their fruit, could be taxed in any way would be difficult to determine. It is a great blessing, again, that the price of good fruit, like Grapes and Peaches, is oftentimes within the reach of people of moderate means. *Vagabond*.

September 17, 1892.
Sir,—Your issue of yesterday contained a report of a recent Haddingtonshire Court of Appeals against over-assessments. One of the cases has more than a local and passing interest. The appellant, a market gardener, stated that he had laid out above £2000 on his glasshouses, and that he was taxed on their value. Although the Court remitted in full the amount of this tax, the nature of his complaint was not that it was in itself either exorbitant or illegal. He simply stated that erections of a similar, but more extensive character, were owned and worked by many of the leading proprietors in the county, and that, while the fruit, &c., raised in them was regularly sold, thereby lowering the price of his own produce, these erections were totally untaxed. This, he justly remarked, placed him at an unfair disadvantage in the open fruit market.

East Lothian may not be the only county in Britain where a similar system prevails. It is to be hoped that the moral courage shown by Mr. Robert Macfarlane of East Linton in exposing its unfairness, and also the consequent loss of revenue, may tend to an equality of assessments against all fruit-ers being shown in future rolls.—I am, &c.,

TAXPAYER.

"SUCCESS" PEA—Referring to the discussion going on in the *Gardeners' Chronicle* in reference to this Pea, I shall be glad to be informed wherein it differs from *Holmes' St. Duthus*, which was certificated by the Royal Horticultural Society in August, 1887, and sent out by Messrs. Hurst & Sons in the autumn of that year. The *Gardeners' Chronicle* of September 4, 1886, describes it as follows:—"St. Duthus Pea—of which a plant was sent bearing forty-five pods, with about 360 Peas in all, an average which can scarcely be excelled. Seed large, colour deep green, sweet in flavour." Messrs. Hurst & Son described it as a "late wrinkled variety, of a robust habit, and should be sown very thin. Height, 3½ feet." Success was first catalogued by Messrs. Veitch & Sons in 1889-90, and their description of it tallies generally with that of Messrs. Hurst & Sons and the *Gardeners' Chronicle*, but they make it to be 4 feet in height. They did not issue it with a raiser's name attached to it, nor did they claim it as their own production. I think there can be no doubt the Peas are one and the same, and if so, then it would appear that the Royal Horticultural Society has given two certificates to the same variety under different names. *Enquirer*.

ORCHID GROWING MADE EASY.—No one who has had the good fortune to have seen Mr. Crispin's Orchids at Fishponds, near Bristol, could fail to have been struck with the easy, effectual, manner in which a collection of nearly one thousand plants is grown. There are fine Orchid-houses, and all culture-worthy species and varieties are represented. Good *Odontoglossums*, fine specimen *Cattleyas*, large masses of *Oncidiums*, new and rare hybrid *Cypripediums*, of which there is a good collection; *Dendrobies* in variety new and old, such as *fimbriatum*, *Phalænopsis*, *Statterianum*, and *superbiens*; several fine specimens of *Cattleya Warocqueana*, full of sheaths. All of these afford evidence of the excellence of the system of cultivation in vogue at Fishponds. It may sound perhaps rather strange to some that a lad of fifteen only is kept on this place, and his work is mainly to attend to the fires and to do a little occasional sponging of the foliage of the Orchids. Watering is attended to about once or twice a week by Mr. Crispin himself, and all goes merrily. Mr. Crispin's methods must be admitted to

be economic and effective, and very simple. By some engineering contrivance the atmosphere can be charged with vapour to any degree as far as dew-point, but it is usually kept at about 5° above the dewpoint, this affording a comfortable atmosphere, especially for plants which are growing; and the volume of vapour can be reduced or increased by merely turning a valve, so that a houseful of plants may be dried off or ripened, or started into growth, as may be desired. I have an idea that Orchid growers, if they tried Mr. Crispin's plan, would soon take a great fancy to the contrivance, as for instance there is no throwing water about the stages or floors, and the syringe is not required, therefore a great deal of the dirt deposit which remains on the foliage after the water has evaporated is avoided, and the plants are thus kept clean, a point always sought after by good gardeners. In winter, I think this automatic system of damping down is a great boon. When say, in cold weather, there are from 10° to 20° of frost urging us to put on more coal, and then there is a difficulty in keeping pace with the dryness of the air in the house, due to the heat of the hotwater

was the position of the respective committees in relation to subjects grown at Chiswick for trial, and to which they are occasionally called upon to make awards of merit. Until the present year, the granting of three marks to any subject was followed, so I understood, by the giving of certificates to the persons sending subjects there, so honoured. This year's schedule, however, shows a newly-introduced condition made by the council, which renders it needful, when practicable, that examples of the subjects honoured should be presented at a regular meeting of the committee at the Drill Hall for confirmation of the award, and the granting of certificates. The present position of things was first brought to the notice of the fruit committee at the meeting held at the Drill Hall on September 6, when Mr. Wythes presented for a certificate a dish of Veitch's Success Pea. It was at once stated that this Pea had been certificated at a special meeting held at Chiswick a few weeks earlier. Of course, Mr. Wythes was absent from the table when this matter cropped up, and it gave rise to a long discussion as to who, under the new regulations, was entitled to

be some rule made as to the numbers of the committee forming a quorum, and when a full quorum failed to attend at Chiswick, then the awards should be subject to the sanction of a full meeting. I entirely fail to see what bearing the question of the certificate granted to Figs grown at Chiswick has upon the one under discussion. If these Figs were purchased by the council, and grown at Chiswick for purposes of profit, as presumably they are, who were better entitled to the certificates than the growers? If they were sent by the continental raisers for trial, they were entirely satisfied that certificates were awarded. The case is not at all analogous to the one under discussion. The suggestion that gardeners find it more difficult to obtain certificates than do members of the trade, is absolute baseless. Take the case of Mr. Myles' new Grapes, and Mr. Allan's new Strawberries, for instance; but these were really meritorious subjects, whilst some which came to the table from presumably eminent gardeners, elicit only surprise, and not admiration. Then there is a suggestion that no person interested in any subject grown at Chiswick should be on



FIG. 66.—GREAT BANYAN TREE IN THE BOTANIC GARDEN, CALCUTTA. (SEE P. 399.)

pipes, when moisture is quickly dried up, and the work of damping down is never finished. At night it is even worse; a careful man looks round at ten or eleven o'clock, and damps the benches and tables and floors, and often very cold water comes into contact with warm pots which is not beneficial to the plants, and doubtless causes a check in some cases. The gardener then goes to bed, and seven or eight hours intervene ere the plants are again looked at. In this interval the house has become thoroughly dry, with the consequence that young growths are little by little weakened, and plants are lost. This is not all, for drought is highly favourable to the increase of insects, such as woodlice, cockroaches, and thrips, and Mr. Crispin's contrivance renders this kind of plague of the Orchid grower less irksome. *P. W.*

CURIOUS FREAK OF A CLEMATIS.—In the dining-room of a house I was staying in lately, a Clematis Jackmanni branch had come in through the ventilator, produced four flowers, and, under the influence of heliotropism, made vigorous growth for the window. It would be interesting to hear other instances of this. *Vagabond.*

CERTIFICATES OF THE ROYAL HORTICULTURAL SOCIETY.—Setting aside personal matters with which I have nothing to do, what I did discuss

the certificate to the Pea, which every member of the committee was anxious to grant. Of course, had not the Pea been previously grown at Chiswick, and there received three marks, it would not have had a certificate granted, consequently it was held by most of the committee that as the Pea derived its honours from its good qualities shown at Chiswick, the person sending it to Chiswick for trial on the invitation of the council, as made yearly, was the proper person to receive the certificate. When it was said by the estimable chairman, "We grant the certificate to the Pea," it was unanimously agreed that such certificate should be granted; but, after all, this incident, trifling as it may be, forms an admirable basis on which to raise a discussion, were it needed, as to what shall ultimately be the position or power of the committees in relation to awards at Chiswick. Whilst most desirous of working in complete harmony with the council, the members think that, with even greater facilities before them at Chiswick, to discern the merits or otherwise of subjects than they can have at the Drill Hall—the same power to grant certificates should exist in one place as in the other. [Only after comparative observation throughout the whole season. *Ed.*] That, of course, would ensure that the person sending the subject for trial at Chiswick received the certificate. I think, however, there should

any sub-committee. Well, no sub-committee has yet been appointed, and if any is, it will be time enough to raise that question. If anyone has taken notes at Chiswick, or even at the Drill Hall, of subjects in which they were directly interested, it would be as well to specify cases, and mention names. How does the matter stand, for instance, when, say the Duke of Northumberland sends from Albury subjects for award to the fruit committee, and his gardener at Syon sits and adjudicates, or *vice versa*, at the floral committee table. That, of course, opens up a very interesting matter, and shows that there are always two sides to a question. However, there can be no doubt but that some good will come out of this discussion, which I have raised in a very temperate way. The matter has, of course, attracted the attention of the council, and we may look for a solution in due time. *P.S.*—The fruit committee consists of gardeners 19, seedsmen and nurserymen 11; others, chiefly amateur or unattached 10; total, 40. *Correspondent.* [It is clear that the Chiswick Certificate is a much more valuable testimonial than the ordinary First-class Certificate, and means should be taken to emphasise the fact. *Ed.*]

VICTORIA REGIA.—The Victoria has been very fine, and flowering freely. The first flower opened

in May. This is the second year on the same plant. Our *Nymphæas* have also flowered freely, producing very large flowers. *J. P., Cherkley Court.*

LILIES REMAINING DORMANT.—This year an unusually large proportion of the Lilies in my garden, I think certainly more than half, have failed to make any growth above ground. I find them apparently quite healthy and sound, when digging and transplanting herbaceous plants. The kinds which most often remain without coming up are *L. colchicum*, *L. testaceum*, *L. candidum*; but they appear to grow larger during their stay underground. Another peculiarity of Lilies is the great irregularity with which they make their first appearance above-ground after germination from seed. I scatter seed of some kinds, especially *L. colchicum*, freely about the flower beds. In some places the young plants appear in a year; in others, sown at the same time, the bulbs grow underground for two years or more before making any show above ground, and I am almost certain that flowering stalks of *L. colchicum* are in some cases the first indication that a bulb has matured on the spot from seed. *C. Wolley Dod, Edge Hall.*

SCOTLAND.

NORTH OF SCOTLAND HORTICULTURAL AND ARBORICULTURAL ASSOCIATION.

THE members of this association held their annual meeting in Aberdeen on Wednesday evening, September 22, Mr. C. S. France, President, in the chair. The secretary's and treasurer's reports were read and adopted. From the accounts, it appeared that there was a balance to the credit of the association of £17 16s. 10½d. The following gentlemen were appointed office-bearers for the ensuing year: President, Mr. C. S. France; Vice-president, Mr. G. Ross, Cranford; Joint-secretaries, Mr. W. Reid, Hadden Street, and Mr. J. Minty, Canal Road, Aberdeen; Treasurer, Mr. Wyllie. A motion anent alterations of rules 1, 3, and 5 of the constitution of the association was then brought forward. Regarding rule 1, the name of the association was altered to the "North of Scotland Horticultural and Arboricultural Association." To rule 3 the following addendum was made: "Amongst means for extending the objects of the association we are to grant awards for essays on, and for collections of native herbaria and woods." Rule 5 was altered to admit apprentices at a subscription of 1s. per annum. Three silver medals were offered as awards for the subjects mentioned above, a maximum sum of £3 3s. being voted for the purpose. The usual votes of thanks terminated the proceedings.

FROST IN SCOTLAND.

Writing under date of Saturday, September 24, our Aberdeen correspondent states, that on the morning of Tuesday, September 20, and three following days, sharp frost prevailed in the North of Scotland. Reports from various districts are to the effect that much damage has been done to vegetation. The Potato tops over a wide area have been blackened, and it is to be feared the crop has been seriously injured. Away in the uplands about Braemar, the weather experienced during the past few days has been more like midwinter rather than in the month of September. At Castleton Observatory (Braemar), 10° of frost were experienced in the shade; and the self-registering thermometer on the grass indicated 17° of frost. On Wednesday and Thursday the night-frosts were followed by splendid sunshine, the heat being almost oppressive. The barometer is both high and steady.

TAYSIDE, PERTH.

Among the numerous suburban residences along the banks of the River Tay, the seat of R. Pullar, Esq., holds a conspicuous position, nestling snugly among trees on a beautifully-kept lawn, running close to the river, and, like most of such suburban homes belonging to proprietors like Mr. Pullar, who are imbued with refined taste, and are in affluent circumstances, horticulture in due time is well represented in such favourable positions. We had only a

very short time to pass quickly through this place, after a special effort we made, to see the fine conservatory at Tayside, which is attached to the spacious mansion. It is a very elaborate structure, in which one can have bodily exercise and enjoyment in fresh air, among flowers, to one's heart's content. The length is about 132 feet, and over 30 feet wide. The roof being lofty and well clothed with climbing plants, healthy enjoyment can be at all times obtainable, and when the stages or floors of such houses, as the one indicated, are not crowded with plants—leaving free open space—the pleasure in them is greatly increased, when a promenade from the drawing-room to the conservatory, thence to the other plant and fruit structures. As at Tayside, convenience and economy are combined. The vegetable garden and other less ornamental parts are well obscured from the general view when one is in the ornamental grounds. The plants in the conservatory are mostly of the usual decorative species—gay to be sure, but among great numbers of Begonias, Pelargoniums, Achimenes, Carnations, Lilliums, white Petunias, baskets of white Lobelias, &c., plenty of Palms, Ferns, Dracænas, and other greenery modified the whole to give a very pleasing effect; fine Camellias in the centre (if not of a class so popular as they once were), give a pleasing effect to this gay structure which may well meet the desires of the most fastidious. The stages all round the sides of the house are low, giving full facility to workmen while manipulating; and when one looks down upon plants instead of up to them, their beauty is much enhanced.

Passing from this conservatory, a small house is entered, in which are a good selection of Gloxinias; interspersed among them are Ferns, Cycads, and Palms. Two vineries are filled with excellent Grapes of their classes—Madresfield Court, Alicante, Lady Downes (among the finest examples we have seen for some years), Gros Colmar, Muscat, and others, all well done. In a corridor is a pleasing arrangement of white and scarlet Lapagerias, Habrothamnus splendens, Abutilons, and other plants drooping from the roof. A house of remarkably fine Begonias is worthy of note.

In a small structure are capitally grown *Calanthe Veitchii*, growing along with Poinsettias, Dracænas, &c. A piece of rockery is passed, almost covered with Ivy, in which is a pleasing arrangement of Ferns, growing among ornamental stones, with water trickling past them. The Melon-house is passed through, in which were growing plenty of fruit large in size of Monroe's Little Heath, a variety which is very hardy, resists disease well, sets freely, and the fruit can be had of serviceable size by allowing, say, half-a-dozen, to each plant. In a Peach-house about 80 feet long, Rivers' Early Silver Peach was a fine crop; Stirling Castle is another which is valued for hardiness and free cropping. Lord Napier Nectarine is much valued, and fruits freely at Tayside; so also does Pine-apple Nectarine. In the house indicated, 13° of frost were registered while the trees were in flower. In such structures it is of great moment to have at all times heating power to resist frost, and to help late-fruited sorts. Warmth from hotwater pipes, when late fruits are ripening, with air and other requirement skilfully applied, do much to render Peaches, Nectarines, and other stone fruits worthy of cultivation; while others that may colour and appear pleasing to the eye (when ripened during dull weather), are only of service in the culinary department, and we have seen some kinds of little value even there. We left this charming seat after a pleasant half-hour spent with Mr. Pullar's intelligent and very kind gardener, Mr. McDonald. *M. T.*

SOCIETIES.

CHELTENHAM HORTICULTURAL.

SEPTEMBER 21, 22.—The annual autumn show of the above Society was held in the Winter Gardens, Cheltenham, on the above dates, and may be described

as one of the best exhibitions the Society has held, having regard to the number of the entries and the good quality of the exhibits. Rain fell heavily on the opening day, and somewhat lessened the attendance of the public.

For six stove and greenhouse plants in bloom, Mr. J. Cypher, Queen's Road, Cheltenham, was 1st, with very fine specimens of *Erica Marnockiana*, *Bougainvillea glabra*, *Clerodendron Balfourianum*, *Allamanda nobilis*, *A. Hendersoniana*, and *Statice profusa*, all of them finely-bloomed; 2nd, Messrs. Heath & Son, Cheltenham, with *Allamandas*, *Ixora Duffii*, and *Statice imbricata Gilbertii*, as their best examples.

The competition for thirty plants, in or out of bloom, is a prominent feature at these shows, and some very large specimens were shown in this competition. Mr. Cypher exhibited some of his large Palms and Crotons, and was much ahead of all his rivals with beautifully-coloured Crotons, with *Kentias*, *Latanas*, *Cycas revoluta*, and *C. undulata*; a grand plant of *Cordyline indivisa*, also *Allamandas*, *Anthuriums*, and other plants in flower; 2nd, Messrs. Heath, with plants which were smaller, and the best of which were the *Kentias*, *Croton Weissmanii*, *C. Youngii*, *C. Victoria*, and *Phœnocomia prolifera Barnesii*.

For collections of Exotic Ferns, Mr. Cypher was 1st, with very fine specimens, such as are rarely seen. These consisted of *Adiantum Farleyense*, *A. cuneatum*, *A. gracillimum*, *Neottopteris nidus avis*, a grand piece of *Cibotium princeps*, and *C. medullaris*; 2nd, Mrs. Heath, with nice plants of *Cibotium Schiedeii* and *C. princeps*; *Dicksonia antarctica*, and *Gymnogramma peruviana*.

Collections of British Ferns.—Messrs. Heath & Son were 1st, and Mr. C. Lockyer 2nd.

The competition in the classes for Roses, annual Asters, Gladioli, Hollyhocks, was in some cases severe, the flowers generally being of fine quality, and as regards the Roses, they were very good for the season.

Zonal Pelargoniums, tuberous-rooted Begonias and Fuchsias were fresh and well-flowered, but there was nothing of special merit amongst them to call for notice.

The class for blooms of hardy herbaceous was a very fine one, Mr. Cypher being 1st, Messrs. Heath, 2nd, and Mr. Marsh, Arle Court, 3rd.

FRUIT.

The fruit classes were well filled, and the various exhibits meritorious. Rev. G. Coventry (gr., Mr. James), was 1st for two dishes of black Grapes, six bunches; Mr. Armstrong, Winchcombe, 2nd; Mr. Lee Campbell, 3rd. For a single dish of three bunches, 1st, Lord Sudeley, Toddington (gr., Mr. J. Clear); 2nd, Major Palairat, Ledbury. Two dishes of white Grapes, six bunches, 1st, Mr. J. Clear; 2nd, Mr. L. Campbell; for a single dish of white Grapes, Mr. Marsh, 1st; and the Rev. Canon Coventry, Worcester, 2nd.

Collections of fruit, to consist of eight dishes, the Earl of Coventry, Crome Court (gr., Mr. Child), was 1st, having very fine black Grapes, Figs, Melons, Peaches, and well-finished examples of Muscat of Alexandria Grapes. The 2nd prize collection—that shown by H. C. Moffatt, Esq., Goodrich Court (gr., Mr. Spencer)—ran this one very close, and contained several very fine dishes. Lord Sudeley's gardener had to be content with the 3rd place.

The Rev. G. Coventry, Colonel Rogers, and Major Palairat took the prizes in the order of their names for the best of the collections of four dishes of fruits, distinct kinds.

Nectarines, Melons, and Morello Cherries were all good. Dessert Apples were well shown by Messrs. Cook, Smith, and Heath; and cooking varieties by Messrs. Garraway (Bristol), Cypher, and Hall. Plums were abundantly shown, the best coming from Mr. Lee Campbell, Earl Coventry, and Lord Sudeley.

Collections of Apples in the amateur's classes made a large display, Earl Coventry being 1st with large well-coloured fruit; 2nd, Mr. Hall.

Pears were abundant, and Mr. Smith and Mr. Howell were the exhibitors who showed best.

Vegetables showing much good culture occupied a large amount of space, Mr. Garraway being 1st; and Mr. Cook 2nd for nine kinds; and Gen. Little (gr., W. Davis), 1st; and J. R. Greatorex, Shrewsbury, 2nd, for six kinds.

Tomatoes were fine and numerous, as were the exhibits of Potatoes.

NATIONAL CHRYSANTHEMUM SOCIETY.

SEPT. 28.—A meeting of the Floral Committee of the above took place at the Royal Aquarium, Westminster, on the above date, and though, as is usual this month, but few flowers were exhibited, these were of an interesting character. From Mr. S. Dibbens, florist, Brockley, came Japanese Amy Chantler, golden centre, with pale lilac and creamy petals, a reflexed variety. Mr. Adams, Fortis Green, Finchley, sent Japanese Mary Adams, a small reflexed yellow Japanese, which the Committee desired to see again. A First-class Certificate of Merit was awarded to Mr. R. Owen, nur-

bore testimony to the fact that it is a peculiarity of the flower to come in this character. Mr. Davis also had a bunch of the early white-flowered Mrs. Cullingford, to show its fine character; and stated that this and La Vierge, were the two best white early-flowering Chrysanthemums in cultivation, an opinion that appeared to be endorsed by the floral committee.

LOCAL SHOWS.

THE BILDESTON DISTRICT HORTICULTURAL AND INDUSTRIAL ASSOCIATION held their twenty-seventh annual show on Friday, September 16. The exhibition was favoured by charming weather, and was

before a large audience. The lecturer spoke for more than an hour upon the various insect pests which during the present season have been so prevalent in Leicestershire, carefully pointing out the best means of exterminating the same. At the close many questions were asked, and were readily answered by Mr. Walker.

THE TORQUAY DISTRICT GARDENERS' ASSOCIATION is now an accomplished fact. It is a new movement, designed to promote the welfare and improvement of gardeners by occasional meetings to discuss matters of special interest. Mr. F. C. Smale, the energetic Hon. Treasurer and Secretary, has arranged a varied and interesting programme, which is to be opened the first Friday in October by a paper by the President, Mr. W. Lavers, on "Gardens, Glass-houses, and Flowers, especially Orchids," of which he has a rare collection. Mr. Jones, of The Cedars, follows the next meeting with an essay on "The Bouvardia: its history, culture, and usefulness;" and Mr. W. B. Smale concludes the month with an account of "A Visit to the Dutch Bulb Farms." In November, Mr. French, of Rooklands, and Mr. Searle, of Graton, speak on Roses and Chrysanthemums, and the next month Mr. Stacey, of the Elms, is to say something about the Peach. A social gathering is to be held early in the New Year, after which Major Grahame has promised to describe "How we Garden in India." In February, Mr. Hodder, of Ponsonby, will introduce a discussion on natural and artificial fertilisation; and Mr. Neate, of Rocheard, on the cultivation of the Grape. Mr. Satterley, of Braddon Villa, opens March with a talk about the Begonia; and Mr. Hebbs, of Henapyn, follows with some information about hardy flowers; the programme concluding with an interesting debate on that increasingly popular vegetable, the Tomato, led off by Mr. Hodges, of Watcombe Lodge. With such a syllabus, the Association deserves every success.

SCOTSWOOD FLOWER SHOW.—On Saturday, the members of the Scotswood Floral and Horticultural Society held their ninth annual show near the railway station at Scotswood. As good a prize list was issued as in previous years, and a large number of entries were secured in many of the classes. The hardiest and more easily-grown flowers were forward in large numbers. The Roses exhibited were not only numerous but also fine in quality, the best being those of M. Wheatley, of Greenside. Asters, Pansies, and Dahlias covered a large amount of space, and fine specimens of each were shown. The premier awards were secured by J. Gardener, Whickham; G. Davison, Eachwick; and J. Spoor, Scotswood, respectively. G. Rayner won 1st prize for bouquets.

HARDY SHRUBS.

Olearia Haasti.—Few of the *Olearias* can be termed hardy, some requiring the protection of a greenhouse, while others may be planted against a wall with partial success; but the one now under notice is perfectly hardy, having withstood the rigours of past winters unprotected. It is a native of New Zealand, and was introduced into English gardens by Messrs. Veitch, of Exeter, thirty-four years ago. It belongs to the great Composite family, and flowers during August and September, a time when there is a dearth of flowers on trees and shrubs, a point much in its favour. It forms a compact evergreen bush of about 5 feet in height, plentifully supplied with strong shoots, thickly set with Myrtle-like foliage, light green above and silvery-white beneath. Its Daisy-like flowers are carried in dense clusters so freely as to almost cover it, and these appear when the plant is quiet young. All the pruning which it needs is to thin out the growths, which would otherwise unduly crowd the centre of the bush. It should have plenty of space to grow in, and a fair amount of sunshine, and it may then be trusted to afford a good floral display. A good effect is obtained if *Gladiolus*, or the short-growing *Lilium tigrinum splendens*, and others, are placed near or between the plants. The plant is not fastidious as to soil, but that in which it thrives best is an open loam, the growth being then much stronger than when it is grown in peat soil. It is a serviceable plant for the sea-coast. Propagation is best effected by means of cuttings taken off in the early autumn, and dibbled into prepared sandy soil on a warm border, and covered with hand-



FIG. 67.—HYMENANTHERA CRASSIFOLIA. (SEE P. 412.)

seryman, Maidenhead, for General Hawkes, a fine October-flowering Japanese, colour rich amaranth, with silvery reverse, very fine and striking. Mr. Owen also had Galaxy, a white and pink-flowered Japanese, very free; and Madame Zephyr Lionnet, rich golden yellow, the young blooms tipped with brown—very free, and a fine decorative variety, commended for its colour. A First-class Certificate of Merit was awarded to Mr. Davis for Gloire de Mezin, a reflexed Japanese, deep buff, with orange-salmon centre, fine and bright, the flowers deep and full. Mr. Davis also had George Woodgate, a reflexed mauvey-pink Japanese, but somewhat flat as shown; which the Committee wished to see again.

Mr. Davis brought flowers of Bouquet de Dame, a white Japanese, and said that as it had a tendency to throw hairy florets, it might be produced in the latter character as a new variety. Other growers

quite equal to any of its predecessors. The prizelist, which was large, included classes for growers for sale, private growers, amateurs, and tradesmen, labourers, and cottagers, and a separate department for industrial exhibits.

NEWCASTLE-ON-TYNE.—The first exhibition of a Society that has been formed in the east end of Newcastle, was opened on Saturday, September 17, and remained open until Monday evening. The exhibition was considered highly satisfactory, and earnest hope was expressed that the Society should meet with continued success.

HUGGLESCOTE, LEICESTER.—Lecture on Horticulture. —On Thursday evening, Mr. J. H. Walker, who is engaged to lecture on Horticulture by the County Council, delivered the third of a course of four lectures on that subject in the National School

lights. They must be watered overhead with a fine-rose can occasionally, and shaded from the direct rays of the sun. By the following May the cuttings will have made roots, and can then be planted out in nursery rows.

HYMENANTHERA CRASSIFOLIA (SEE FIG. 67, P. 411).

Although known to English gardens since 1875, it is seldom met with. It forms a low, freely-branched evergreen shrub, rarely exceeding 3 to 4 feet in height, with stout branches clothed with small leathery leaves, arranged alternately along the shoots, and measuring from half to three-quarters of an inch long. Its flowers are small, and of a yellowish tint, followed by snow-white berries, about the size of those of the *Pernettyas*. In the South and South-west of England it is hardy, but farther north it requires some little protection during the winter. To grow this New Zealand shrub well, it should be planted in well-drained peaty soil, and the situation should be sunny. Being low-growing, it makes an admirable plant for the rock-garden, or as a front line in shrubberies. It is a member of the Violet family. The stock is readily increased by pieces of the half-ripened wood, cut below a joint and placed round the sides of 5-inch pots in light sandy soil, and the pots plunged in close propagating cases, and in a few weeks' time, roots will be emitted. *H.*

THE BULB GARDEN.

HARDINESS OF GLADIOLI.

SOME time ago, Mr. Chinnery in a note on this subject, omitted to say at what depth he plants his Gladioli. The whole question of hardiness so far as *G. Brechleyensis* is concerned depends upon their being out of reach of the frost; whether they will bear planting at such a depth and thrive as well as if nearer the surface, is the point to be considered. I always prefer keeping them in the ground during the winter to storing them on dry shelves; and in order to make them safe, we lift them from the Rose-beds and place them close together in a sheltered place about 6 inches below the surface, and then put about a foot of long litter over them; but if they will succeed when planted deeply, we might save the labour of lifting and replanting at least once in two years. *W. H. Divers, Ketton Hall Gardens, Stamford.*

ROUND LIVERPOOL.

THE LIVERPOOL HORTICULTURAL CO. (LIMITED).—Under the management of Mr. John Cowan, the nurseries at Garston, Liverpool, are widely known, the weekly special offers of Orchids, &c., which are so persistently sent to all growers, and which are so varied in the assortments of plants enumerated, and so moderate in price that few there are (among Orchid growers at least) who have not had dealings with the firm. The large nursery, originally devoted to the culture of Vines, a culture which is still largely maintained, added to its specialty, the culture of Tea Roses in pots, and especially of *Maréchal Niel* and other climbing varieties, thousands of which are now to be found in the large and lofty houses set apart for them, then took up the importation of Orchids on an extensive scale, and at present that branch of the business takes the lead, the whole of it being under the supervision of that well-known and able plant-grower, Mr. John Baguley, for some years with Mr. Wm. Bull at Chelsea. In quantity the stock of Orchids at Garston is so extensive as to preclude the possibility of touching only on some of the more important batches. It will be noticed that the quick sale, which is the object of the company, forbids the presence of any great number of old-established plants, and consequently the bulk is made up of either fresh-imported or semi-established plants, and none could be more convenient for the amateur of limited means or the trader who wishes for sound plants to grow on.

Let us take a look through the houses and note the more striking batches. In the first large span-roofed house was a splendid lot of specimens of *Ceologyne cristata*, and *C. c. Lemoniana*; a few fine exhibition Orchids, among which were a very large and healthy *Sobralia macrantha*, a fine *Angræcum eburneum* with three spikes; the true *Cypripedium longifolium grandifolium*, *Dendrobium Parishii*, and *D. Loddigesii*. In the large Cattleya-house were some splendid *Lælia crispata*, a noble variety of *Lælia elegans* *Turneri*, a few great masses of *Cattleya Walkeriana nobilior*, a grand lot of the true old autumn-flowering *C. labiata*, both imported direct, and acquired from all the other firms who have got it over; *Cattleya Leopoldi*, and a large quantity of *C. Trianae* in sheath.

Passing through a cool lean-to house full of *Odontoglossums* and *Masdevallias*, we go to another lean-to on higher ground, running at right angles to it, and being in a sunny aspect. Here the *Lælia majalis* and *Cattleya citrina* are in grand condition, and have been flowering profusely. It is said that upwards of 400 flowers have been produced by the plants of *Lælia majalis* alone. They and the *C. citrina* are suspended over the entire roof, and during the summer, they have never been dipped, but have been kept moist by being frequently syringed—a method which has suited them perfectly well. Many other Mexican Orchids in this and in the other houses are treated in a similar manner, with equally good results. Next, we come to a block of four houses, in the first of which were a quantity of *Sophranitis cernua*, *Colax jugosus*, and *Odontoglossum maculatum*, which have yielded fine forms of the *O. m. anceps* class.

In the second, among other things, are good *Odontoglossum Harryanum*, *O. citrosum*, *Oncidium varicosum*, and *O. sarcodes*. The third, a showy lot of *Odontoglossum grande*, with many in bloom; and the fourth, a reputedly new *Aërides*, with white flowers, a new *Sobralia*, a good lot of *Cypripedium exul*, and a large quantity of *Vanda Denisonii* attract the eye.

Another large span-roofed hot-house has the roof covered with *Rodriguesia pubescens*, *Dendrobium Brymerianum*, *Oncidium papilio*, *Houlletia Brocklehurstiana*, and *Angræcums*; here one specimen of *Saccolabium Blumei* has borne twelve spikes. In a sheltered corner are a very flourishing set of *Phalænopsis*, and a good part of the rest of the house is occupied by seedling *Cypripediums*. Other noteworthy specimens are a very large *Vanda tricolor insignis*, a strong specimen of *Renanthera Storyii*, some large *Aërides*, *Dendrobium Devonianum album*, *D. Cassiope* X, &c.

The large block of five houses, each about 180 feet long and 20 feet wide, has hanging from the roof of the first of them an almost uncountable host of Mexican *Lælias*, some of the specimens of *L. anceps* (both white and coloured) and of *L. albidata* being 3 or 4 feet across. The whole of the coloured forms are of the *L. anceps Morada* or *grandiflora* type, which the Liverpool Horticultural Company were fortunate enough to introduce, and which has yielded the largest and richest-coloured forms of the species in cultivation. In this house the *Barkerias* flourish; *Chysis lævis* is in quantity; *Mormodes citrina* and *M. pardina* plentiful, and *Lælia superbiens*, and other light-loving species in fair quantities. The roof of the next bears thousands of *Cattleya citrina* and *Odontoglossum Rossei majus*; and among fresh arrivals a fine importation of a supposed new *Zygopetalum*, *Cattleya Alexandræ*, and *C. Acklandiæ*; *Oncidium ampliatum majus*, and large healthy masses of an unknown *Sobralia*, which have come over in remarkably good condition. Another house is nearly filled with *Cattleya Mendelii*; then we come to a large lot of *Lycaste Skinneri*, the true *Oncidium falcipetalum*, *O. macranthum*, *O. Gravesianum*, and others of the *O. crispum* section; a few of the rare *Odontoglossum Galeottianum*, and a large quantity of *O. Cervantesii* and *O. C. mosada*, or *lilacina*; then come *Cattleya gigas Sanderiana*, *Vanda cœrulea*, *Ceologyne*

pandurata, and other showy Orchids, in bewildering variety.

In the large and lofty houses in which the Vines in pots are grown, and which necessarily require a good space between the pots, the room on the staging between them is utilised for growing the stronger *Dendrobes*. Probably the practice was commenced at first from the necessity of accommodating fresh arrivals, but the plan is found to answer very well and so grown are the whole of the showy *Dendrobes* to be found at Garston. Among them that general favourite, *D. Phalænopsis Schroderianum*, is one of the freest, and other of the rare varieties of *D. nobile*, *D. Ainsworthii*, &c., are here propagated from cuttings by Mr. Baguley with great success.

In the many other houses are grown *Eucharis*, *Pancratiums*, Ferns, and other plants suitable for cutting, for there is a shop in town and stand in the market to keep supplied, a fact which accounts for the scarcity of flowers to be seen in proportion to the great number of plants.

The old vineries have their roofs covered by the canes of the original *Madresfield Court Vine*, which was planted many years ago, and which this year, as in former years, has had its crop restricted to 500 bunches, a quantity which it carried and finished well.

(To be continued.)

NURSERY NOTES.

BEGONIAS AT SWANLEY.

THE nurseries of Messrs. H. Cannell & Sons are looking gay, both inside and out, with both single and double Begonias, of all shades of colour. Of the doubles, for pot culture, *Octavie*, a pretty dwarf-growing variety, with pure white flowers, seems to be a favourite. Outside, numbers of seedlings are planted out, a portion of which are especially good. The seed was sown late last autumn, and not allowed to flower, but lifted, stored, and planted again. This spring they were good healthy plants, carrying a quantity of very fine blooms, chiefly double. There is also a good show of *Dahlias*, of the best sorts, including amongst others, *Maid of Kent*, cherry red, crimson ground, with white tips; *Cannell's Favourite*, old gold; *Annie Harvey*, rich crimson-maroon; *H. Cannell*, dark velvety crimson; *Panthea*, good, salmon-red: all very showy varieties. *E. Hewitt, Fulham Palace, S.W.*

CULTURAL NOTES.

LILIUM AURATUM.

I HAVE flowered here this season a single bulb of the above Lily with one shoot only, carrying in all twenty-two fully-developed flowers. As beautiful as Mr. Kempshall's display must have been, what a glorious sight would his Lily with forty shoots have been if each had shown twenty-two blooms!

My practice is simple. In early spring, I divest the bulb of every particle of soil, and pot it in good loam and leaf-mould, with a fair sprinkling of silver-sand. When the plant is about 3 feet high, I repot into a size-larger pot, and when that is full of roots, a considerable quantity of manure-water is afforded. *R. Nelson, Hwith House, Ravenstonedale, Westmoreland.*

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

THE SALMON BERRY.—The ranchers in Oregon always speak of the Salmon Berry, which I suppose is *Rubus spectabilis*, as being a most delicious juicy fruit—too juicy to preserve, in fact. There are two varieties, one bearing a yellow and another a pinkish berry. Has it ever been cultivated with success in England? *Vagabond.*

MARKETS.

COVENT GARDEN, September 29.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

MARKET well supplied, with trade still dull. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 1 0-3 6	Melons, each ... 0 6-1 3
Grapes, per lb. ... 0 6-1 6	Peaches, per doz. ... 2 0-6 0
Kent Filberts, per 100 lb. ... 90-...	Pine-apples, St. Michael ... 4 0-6 0
Lemons, per case ... 15 0-35 0	Plums, p. half-sieve 2 0-4 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Ferns, per 100 ... 5 0-8 0
Aspidistra, per doz. 15 0-30 0	Ficus elastica, each 1 6-7 6
specimen, each 7 6-21 0	Fuchsia, per doz. ... 3 0-6 0
Asters, per doz. ... 6 0-12 0	Heliotrope, per doz. 3 0-6 0
Begonia, per doz. ... 6 0-12 0	Hydrangea, per doz. 9 0-18 0
Campanula, per doz. 6 0-9 0	Lilium, various, doz. 18 0-30 0
Chrysanthemums, p. doz. ... 4 0-12 0	Marguerite, per doz. 6 0-12 0
— large plants, ea. 1 6-2 6	Mignonette, doz. pots 6 0-12 0
Coleus, per doz. ... 3 0-6 0	Palms, various, each 2 0-10 0
Cyperus, per dozen 4 0-10 0	— specimens, each 10 6-84 0
Dracena, each ... 1 0-5 0	Pelargonium, p. doz. 6 0-12 0
Ferns, various, doz. 4 0-9 0	— scarlet, p. doz. 2 0-4 0
	Solanums, per doz. 9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0-4 0	Orchids:—
Asters, p. doz. bun. 4 0-9 0	Cattleya, 12 blms. 6 0-12 0
Carnations, 12 blms. 1 0-2 0	Odontoglossum
— 12 bunches ... 4 0-6 0	crispum, 12 blms. 2 0-6 0
Chrysanthemums, p. doz. blooms 0 6-2 6	Mignonette, 12 bun. 2 0-4 0
— p. doz. bunches 3 0-9 0	Pansies ... 1 0-2 0
Cornflower, 12 bun. 1 6-3 0	Pelargonium, scarlet, per 12 bun. 2 6-4 0
Eucharis, per dozen 2 0-4 0	— 12 sprays ... 0 6-1 0
Gardenia, per dozen 1 6-3 0	Primula, double ... 4 0-6 0
Glaucolus, per dozen spikes ... 1 0-2 0	Pyrethrum ... 2 0-4 0
Heliotrope, per doz. sprays ... 0 3-0 6	Roses, Tea, per dozen 1 0-2 0
Lilium Harrisii, doz. 3 0-6 0	— coloured, dozen 1 0-1 6
— various, doz. 1 0-3 0	— yellow (Maréchal), per doz. 2 0-5 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— red, per dozen ... 1 0-2 0
Marguerite, per doz. bunches ... 3 0-4 0	— outdoor, 12 bun. 4 0-8 0
	Stephanotis, 12 sprays 2 0-4 0
	Stocks, doz. bunches 3 0-4 0
	Sunflower, doz. bun. 2 0-6 0
	Sweet Peas, doz. bun. 1 0-3 0
	Tuberose, 12 blms. 0 3-0 6

ORCHID-BLOOM IN VARIETY.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-
Beans, French, lb. ... 2 6-3 0	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 2 0-3 0	Parsley per bunch ... 0 3-0 6
Carrots, per bunch ... 0 4-0 6	Shallots, per lb. ... 0 6-...
Cauliflowers, each ... 0 3-0 6	Spinach, per bushel 3 6-...
Cucumbers, each ... 0 4-0 8	Tomatoes, per lb. ... 0 4-0 9
Endive, per dozen ... 2 0-3 0	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

Market very quiet; even fresh arrivals are slow to attract buyers. Prices from the best bright soils, 60s. to 70s.; from dark soils, 45s. to 55s. Immediate prospects not favourable. *J. B. Thomas.*

SEEDS.

LONDON: Sept. 28.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report some business doing in fine yearling Red Clover seed. Small sowing orders are still received for Trifolium; prices continue to advance. Winter Tares meet a steady inquiry at former rates. Sowing Rye continues cheap and good. French Italian is getting dearer. As regards Canary seed, Liverpool advices come firmer. There is no change in Hempseed. Linseed is steadier. The new blue Peas show fine quality, and meet with considerable favour. Haricot Beans offer at tempting figures. Mustard and Rape seed are unaltered.

HAY.

Averages.—The following are the averages of the prices obtained at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 112s.; do., inferior, 46s. to 75s.; Hay, best, 80s. to 105s.; do., inferior, 26s. to 50s.; and Straw, 28s. to 40s. per load.

FRUITS AND VEGETABLES.

BOROUGH: Sept. 27.—Quotations:—Cabbages, 2s. 6d. to 3s. 6d.; Marrows, 3s. 6d. to 4s. 6d. per tally; Cauliflowers, 1s. 6d. to 1s. 9d. per dozen; Lettuces, 6d. to 1s. per score; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 2s. per dozen bunches; English Onions, 4s. to 4s. 6d. per cwt.; Horseradish, English, 2s. 6d.; foreign do., 2s. per bundle; English Apples, 2s. 6d. to 5s. per bushel.

SPITALFIELDS: Sept. 27.—Quotations:—Cabbages, 2s. 6d. to 6s.; Marrows, 3s. 6d. to 6s.; Cauliflowers, 2s. 6d. to 6s. per tally; Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; Spinach, 1s. to 2s. per bushel; Greens, 1s. 6d. to 2s. 6d.; Carrots, 1s. 6d. to 2s.; Turnips, 2s. to 3s. 6d.; Onions, 2s. to 3s.; Parsley, 1s. to 1s. 6d. per dozen bunches; Scarlet Beans, 1s. 6d. to 2s. 6d. per bushel; Celery, 6d. to 1s.; Horseradish, 1s. to 1s. 2d. per bundle; frame Cucumbers, 1s. 9d. to 2s. 6d.; Endive, 4d. to 8d.; Cabbage Lettuces, 2d. to 4d. per dozen; Cos Lettuce, 4d. to 10d. per score; Spanish Onions, 5s. to 6s. per case; Belgian do., 2s. 9d. to 3s. 6d.; Dutch do., 2s. 9d. to 3s. 6d. per bag of 110lb.; Seakale, 9d. to 1s. 3d. per punnet; English Apples, 2s. 9d. to 6s. per bushel; English Tomatoes, 5s. to 6s. per peck; foreign do., 1s. 8d. to 2s. 6d. per case; Damsons, 2s. 6d. to 3s. per bushel; Plums, 1s. 9d. to 2s. 6d. per half-sieve; Leeks, 1s. 9d. to 2s. 6d. per dozen bunches.

STRAITFORD, Sept. 28.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 2s. to 4s. per tally; Cauliflowers, 9d. to 1s. 6d. per dozen; do., 4s. to 7s. per tally; Beans, Scarlet 1s. 6d. to 2s. 6d. per sieve; Celery, 9d. to 1s. per roll; Turnips, 1s. 6d. to 2s. per dozen bunches; do., 35s. to 50s. per ton. Carrots, 35s. to 50s. per ton; Mangolds, 17s. to 20s. do.; Swedes, 20s. to 25s. do.; Onions, Dutch, 4s. to 5d. per bag; do., Bordeaux, 7s. to 7s. 6d. per case; Apples, English, 2s. 6d. to 7s. per bushel; Plums, 1s. 6d. to 2s. 3d. per half-sieve; Pears, 2s. 6d. to 4s. 6d. do.; do. 5s. to 9s. per bushel; Carrots, 2s. to 2s. 6d. per dozen bunches.

FARRINGTON: Sept. 29.—Quotations:—Carrots (bag), 5s. per ton; Cauliflowers, 5s. per tally; Cabbage, pickling, 1s. per dozen; Turnips, 2s. 6d. per bag; Apples, cooking, 3s. per bushel; do., Ingestre, 6s. do.; Pears, Capeamount, 6s. do.; English Tomatoes, 3d. and foreign, 2d. per lb.; Melons, Valencia, 7s. per case; Grapes, Lisbon, 10s. per box.

POTATOS.

BOROUGH: Sept. 27.—Quotations:—English Magnums 40s. to 60s.; Hebrons, 40s. to 60s.; Snowdrops, 50s. to 60s. per ton.

SPITALFIELDS: Sept. 27.—Quotations:—Bruce Magnums, 50s. to 60s.; Reading Wonder, 50s. to 60s.; Magnums, 45s. to 60s.; Sutton's Early Regents, 45s. to 55s.; Sutton's Abundance, 50s. to 60s.; Snowdrops, 60s. to 80s. per ton.

STRAITFORD: Sept. 28.—Quotations:—Magnums, 40s. to 65s.; Imperators, 50s. to 65s.; Bruce Magnums, 50s. to 65s.; Maincrop, 60s. to 70s. per ton.

FARRINGTON: Sept. 29.—Quotations:—Imperators, 60s. to 70s.; Magnums, 65s. to 70s.; Snowdrops, 65s. to 70s.; Reading Giants, 65s. to 70s. per ton.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.					No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.	
	Above (+) or below (—) the Mean for the week ending September 24.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 3, 1892.	Below 42°, difference from Mean since Jan. 3, 1892.					More (+) or less (—) than Mean for the Week.
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.					
0	3	45	6	— 52	+ 218	2	+ 181	33.6	31	28
1	3	48	3	— 232	+ 243	3	— 142	19.2	41	33
2	0	aver 76	0	— 131	— 186	1	— 138	17.5	26	31
3	1	97	0	— 118	+ 210	4	+ 127	17.3	22	38
4	0	aver 83	0	— 100	+ 248	4	+ 123	16.4	20	35
5	2	+ 112	0	— 88	+ 138	0	aver 108	14.3	36	42
6	2	— 56	0	— 134	+ 193	1	— 143	31.5	35	35
7	1	— 79	0	— 83	+ 165	1	+ 143	24.9	28	34
8	1	+ 95	0	— 39	+ 117	2	— 129	18.7	28	41
9	1	— 68	0	— 106	+ 122	3	— 157	26.4	26	34
10	1	— 83	0	— 26	+ 132	2	+ 139	27.5	23	34
*	1	+ 122	0	+ 75	+ 42	6	— 127	17.7	52	50

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending September 24, is furnished from the Meteorological Office:—

"The weather during this period was generally cloudy and unsettled, with considerable falls of rain in many parts of England, Ireland, and the north of Scotland; it was, however, comparatively bright and dry in the east and west parts of Scotland.

"The temperature continued rather below the mean in Ireland and Scotland, and was slightly below in 'England, N.W.' also; over the greater part of England, however, it just equalled or slightly exceeded the normal. The highest of the maxima were recorded, as a rule, during the earlier days of the week, and ranged from 72° in 'England, S. and S.W.,' and 71° in the 'Channel Islands,' to 63° in 'England, N.W.,' 62° in 'Ireland, N. and Scotland, N.,' and 61° in 'Scotland, W.' The lowest of the minima were registered on the 18th over England, on irregular dates in Ireland, and on the 21st in Scotland. They were very low for the time of year, the sheltered thermometer falling to 25° in 'Scotland, E.,' and to between 28° and 31° in most parts of Great Britain. In the 'Channel Islands,' however, the lowest reading was 46°.

"The rainfall was more than the mean in 'Scotland, N.,' 'England, E.,' the 'Midland Counties,' and 'England, N.W.,' as well as in 'Ireland, S.;' while in 'England, S.,' the actual fall and the mean were identical. In all other districts the fall was less than the normal.

"The bright sunshine exceeded the mean in Scotland and the Channel Islands, but was below it in nearly all other parts of the Kingdom. The proportion of the possible duration, which was actually recorded, ranged from 52 per cent. in the 'Channel Islands,' and 41 per cent. in 'Scotland, E.,' to 23 in 'Ireland, S.,' 22 in 'England, E.,' and 20 in the 'Midland Counties.'

NOTICES TO CORRESPONDENTS.

* * PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

AUSTRALIAN GARDENING PAPERS: *Andersson. The Horticulturist, New South Wales; The Queenslander and Planter and Farmer, Brisbane.* Apply to some foreign newsagent or bookseller.

BEES: *G. B.* For feeding bees, see p. 407, in this issue. The hives need not be taken indoors. Wooden hives or straw skeps may have a piece of carpet placed on the top, and this may be covered with a bit of oil floor-cloth. The cooler bees are kept whilst at rest the better.

BLUE OR SPECKLED-PODDER FRENCH BEANS: *Hants.* These, with others, were shown by Mr. Barron, from the Royal Horticultural Society's Garden, Chiswick.

BOOKS: *Amicus.* Do not waste your time over the Linnean system; Henfrey's *Elementary Course of Botany* will meet your requirements (Gurney & Jackson, Paternoster Row).—*W. J. C. The Student's Flora*, by Sir J. D. Hooker, C.B. (London, Macmillan & Co., Bedford Street, W.C.), price, a few shillings. *Index to English Botany*, by Mr. N. E. Brown (Bell & Co., York Street, Covent Garden, W.C.).

COUVE TROUCHUDA: *Old Bumble.* It may be cooked exactly like Cabbage, rejecting the outer leaves; or the ribs of the leaves may be cooked after the manner of Seakale, and served like that in a sauce. It is excellent either way. It requires no blanching; still some growers tie the leaves together like Lettuce, to increase the quantity of edible leaves.

CUCUMBER ROOTS: *L. S. D.* Your roots are badly affected with the eel-worms, so very often figured and described in our columns. Burn the plants, turn out all the soil, and start afresh.

FORAGE PLANTS OF AUSTRALIA: See *Gardeners' Chronicle* for August 27, 1892, p. 245, for a notice of this book.

GOOSEBERRY BUSH: *W. N.* The stem is dead, but the roots are fresh-looking, and exhibit no disease. The plant has evidently died downwards, and without further information we are unable to form any opinion as to the cause or causes which have occasioned the loss of the plants.

CARNATION: *G. W.* A good specimen of the old Wheat-eared Carnation, in which, for some mysterious reason, the flowers are not formed; but the bracts, which usually form at the base of the



FIG. 68.—Multiplication of bracts, sepals, &c., of Sweet William.
(See Wheat-Eared Carnation.)

calyx, are repeated an indefinite number of times. It is a curiosity which a florist would think little of, but in which a botanist would be much interested.

GRAPE WINE: *A. H. C.* Smash the berries, macerate them in water at the rate of 3 or 4 lb. to the gallon of spring-water. In four days strain off the liquor, squeezing the fruit dry. Add to each gallon 3½ lb. of loaf or moist sugar according to fancy, and keep it in an open vessel till fermentation takes place. This will be in two or three days if the temperature is kept at 65°. Let the yeast rise for two or three days, skimming it off daily; then run the wine into casks or large stone-bottles to still further ferment. If a "still" wine is wanted, let the fermentation entirely cease before bunging down; if effervescing, bung down whilst there is yet some slight amount of ferment; and for the latter very strong bottles or casks are needed. Rack off as soon as cold weather sets in, and again the following March; keep it cool. Price of Grapes (foreign) at this part of the season 4d. to 6d. per lb. These would need no sugar.

HORTICULTURAL INSTRUCTION: *F. P.* Apply to the Director, Royal Botanic Garden, Edinburgh.

INSECTS: *B. F. L.* A mite allied to the red-spider. It is known as the Lime tree mite, *Tetranychus tillarium*.—*E. M.* What you send are the grubs or larvae of some species of wire-worm, *Iulus*. Try the application of gas-lime to the soil.

NAMES OF FRUITS: *Alpha.* 1, Adam's Pearmain; 2, N-w Hawthornden; 3, Beauty of Kent; 4, Gravenstein; 5, Bedfordshire Foundling.—*Thos. Adcock.* 1, Peach Noblesse; 2, Apple Summer Thistle; 3, Lord Suffield; Pear not recognised.—*Inquirer, Ross.* 1, Doyenné Buisson; 2, Duchesse d'Angoulême; 4, Bauré Hardy; 5, White Doyenné; 6, Fondante d'Automne.—*Thos. Inrie & Son.* Pear not known—an old Scotch variety.—*C. Wood.* 1, decayed; 2, Warner's King; 4, Schoolmaster; 7, Scarlet Nonpareil; others not recognised.—*Rob Roy.* 1, Duchess of Oldenburgh; 2, probably Dutch Codlin; 3, R-d Quarrenden; 4, Ravelston Pippin; 5, King of the Pippins; 6, Stirling Castle; 7, Cambsmethan Pippin; 8, Rymer; 9, Waltham Abbey Seedling; 10, Queen Caroline; 11, Irish Peach.—*James Young.* 1, Beauty of Kent; 2, Damelow's Seedling; 3, Col. Vaughan.

NAMES OF PLANTS: *C. B., Paris.* *Cypripedium* Madame Capue is *Spicerianum* × *Dauthierii* and *C. Kirchoffianum* *Dauthierii* × *Spicerianum*. These are continental. *C. Eyermannianum* (Sander) is *Spicerianum* × *barbatum grandiflorum*.—*H. F. E.* 1, *Eucnymus latifolius*; 2, *Campanula isophylla* alba; 3, *Amelanchier vulgaris*; *Convolvulus sepium*, large white flower, or *C. arvensis*, small pink flower.—*Muscat.* 1, *Begonia discolor*; 2, *Yucca*, probably, send when in flower; 3, *Platytemon californica*; 4, *Croton* var.; 5, *Symphoricarpos racemosus*; 6, *Panicum sulcatum*; 7, is a case of "rust," caused either by cold draughts of air, or by being closer than the other bunches to sulphured

hot-water pipes; 8, shows shanking, which is usually a root malady, or the result of some sort of check to growth; 9, seems to be an exaggerated form of rust.—*J. M.* 41. 11, Too shrivelled to identify; 23, *Polystichum angulare* var. *grandiceps*, *J. Jones*; 160, *P. angulare* var. *lineare*; No. detached and missing, *Lastrea p. m. cristata*.—*G. W.* *Colutea arborescens*, a very old plant, excellently suited for growth in towns.—*W. H. P.* *Hedychium Gardnerianum*, nearly hardy under protection; cultivation very simple, in good sound loam and manure. Should be kept in a dryish state during the winter in pot or border. Do not afford much water at the root after this date.—*T. W. R.* 1, *Crataegus coccinea*; 2, *C. punctata*; 3, *C. coccinea* var.; 4, *C. macracantha* *Rosaceae*.—*W. T.* 1, *Berberis vulgaris* (*Berberidaceae*); 2, *Rhus cotinus* (*Anacardiaceae*); 3, *Leycesteria formosa* (*Caprifoliaceae*); 4, *Ligustrum sinense* (*Oleaceae*); 5, *Colutea arborescens* (*Leguminosae*); 6, *Clematis cirrhosa* (*Ranunculaceae*).—*W. C.* 1, *Chrysanthemum lacustre*; 2, *Helianthus multiflorus*; 3, *Eupatorium cannabinum*; 4, *Sedum spectabile* *Crasulaceae*; 5, *Helianthus Maximilianus*; 6, *Pyrrhtrum uliginosum*; 7, *Boronia cordata* (*Papaveraceae*); 1, 2, 3, 5, 6, all *Compositae*.—*Wm. W.* It is *Rodriguezia pub-scens*.—*W. W. T.* 1, *Polystichum aculeatum*; 2, *Athyrium filix-femina*; 3, *Polystichum angulare*; 4, *Cystopteris fragilis*.—*J. H. Norwood.* 1, *Nephrolepis rufescens* *tripinnatifida*; 2, *Asplenium tenuicolum*; 3, *Davallia bullata*; 4 and 5, probably forms of *Adiantum cuneatum*; 6, *Davallia immersa*; 7, *D. canariensis*.—*J. M.* *Gymnogramma ochracea*; 2, *Polypodium* sp. Send fertile frond; 3, *Leucostegia* (*Davallia*) *immersa*.—*G. S.* *Ocimum flexuosum*.—*A. H.* *Cypripedium Spicerianum*.—*J. Moore.* 10, *Scolopendrium vulgare corymbiferum*; 15, *S. vulgare fissum*; 18, *Athyrium filix-femina cristatum* var.; 20, *Polypodium cambricum*; 30, *Allosorus crispus*; 90, *Lomaria spicata imbricatum*.—*W. Dann.* 2, *Doryopteris palmata*; 3, *Doodia caudata*; 6, *Aster Linosyris*; the others are *Viburnum Opulus* and *Davallia tenuifolia*.

NATIONAL FRUIT-GROWERS' LEAGUE: *Mazagan.* We assume that you mean the Fruit-Growers' Association. Apply to Mr. T. F. Rivers, Sawbridge-worth, Herts.

MELONS: *Eureka.* The fruits sent to us exhibit the appearances often observed when the bottom-heat is too low, and the moisture at the root and in the air in excess of the needs of the plants. Were no young fruits on the plants, there might be nothing to indicate anything being wrong with the plants, but having young fruits, these are the first to show signs of distress. You should ascertain if the bottom-heat has declined below 80°.

SEASIDE PLANTING: *Hants.* See our issue for September 3, p. 287.

SEEDLING BRIARS: *P. C.* You might obtain them from the trade, or by sowing the seeds of the Wild Rose. They are fit for Stocks in the third year. Grafting is done on the root-stock low down the roots, being either potted or bundled up in loam round which moss is secured. Winter in a close pit or house with a summer warmth of 60°, and maximum of 70°.

STONE FOR A ROCKERY: *G. R. T.* The sandstone obtainable about Rigate is very suitable for rockeries, and it is the most accessible from your place of abode. The cost of transit would be the heaviest item.

WHAT IS A DEALER? *Puzzled.* We think the framers of the schedule knew what they were about, and that they wished to draw the line between the amateur who under no circumstances grows for sale, and the dealer who sells his surplus stock. The regular nurseryman would not necessarily sell all his stock if he had the opportunity. He would reserve some for propagation. The genuine amateur is in our opinion unfairly treated when he is called on to compete with "amateur dealers."

COMMUNICATIONS RECEIVED.—*Amicus.*—*H. C.*, Geneva.—*B. P.*—*Messrs. Bunyard.*—*H. W. W.*—*G. W.*—*J. O. B.*—*G. H.*—*H. O.*—*W. W.*—*A. H.*—*T. C.*, next week.—*H. H. D.*—*J. Q.*—*H. D. B.*—*O. T.*, Wand-beck.—*L. L.*, Brussels.—*P. B.*—*F. R.*, Quedlinburg.—*J. R.*—*Carter & Co.*—*Prof. Crépin.*—*G. H.*—*J. W.*—*Pomum.*—*J. R.*—*J. F. M.*—*Vagabond.*—*R. M. C. F.*—*B. A. R.*—*J. O. M.*—*E. B.*—*B. R. P.*—*W. H. W.*—*J. D.*—*J. Stewart.*—*G. W.*—*R. D.*—*Profit.*

FRUITS RECEIVED.—*W. B. G.*—*Somerset.*—*B. W. S.*—*F. H. S.*—*H. D.*—*E. B. G.*—*W. Parkins.*—*J. E.* (all next week)

SPECIMENS RECEIVED.—*J. Q.* (next week).—*W. E. G.*—*T. S.*, Newry.

PHOTOGRAPHS RECEIVED.—*F. Roemer*, Quedlinburg.—*J. W.*

"ROUGH ON RATS" clears out Rats, Mice, Cockroaches, Water Bugs, Flies, Beetles, Moths, Ants, Bed Bugs, Hen Lice, Insects, Potato Bugs, Sparrows, Skunks, Weasels, Wood Lice, Moles, Musk Rats, Rabbits, Squirrels. 7½d. and 1s. boxes, at Retail Chemists. "Rough on Corns" gives instant relief. 8d. at Chemists.



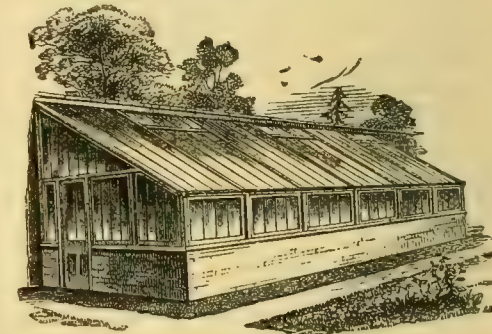
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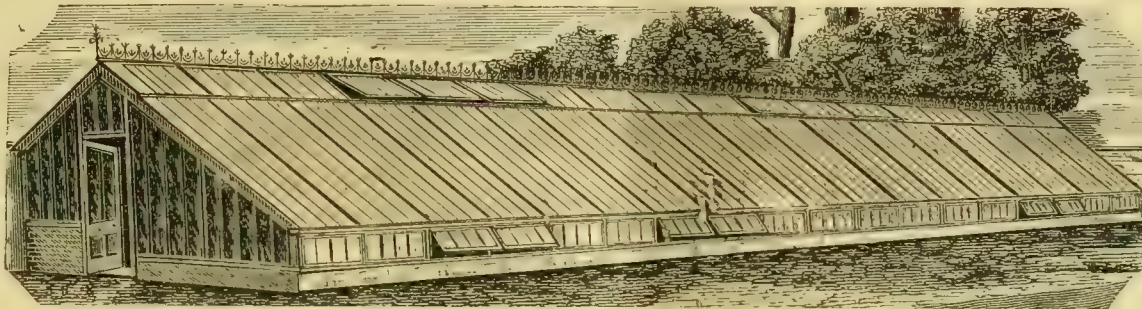
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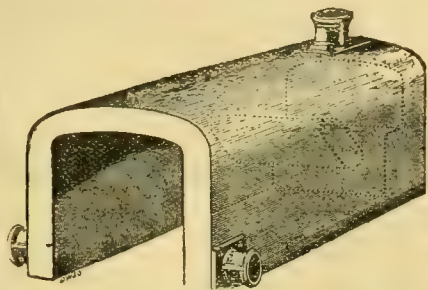
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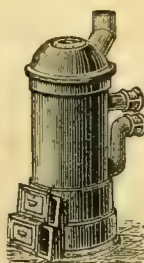
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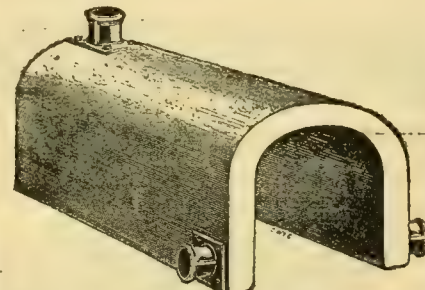
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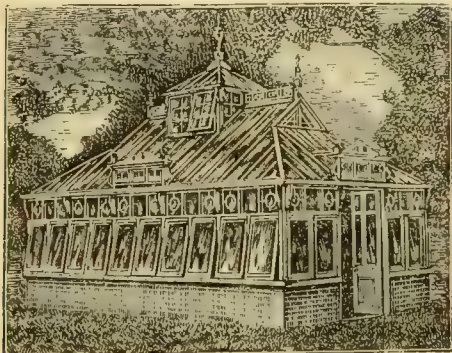
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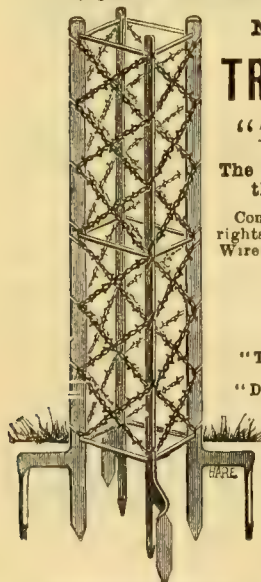
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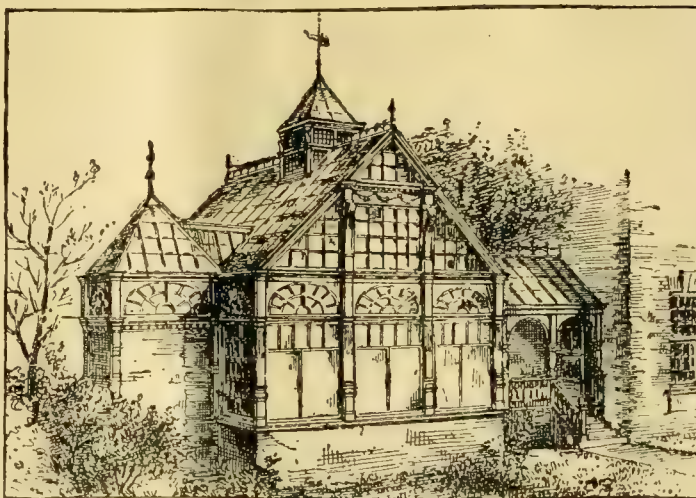
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GUARDS, and they seem
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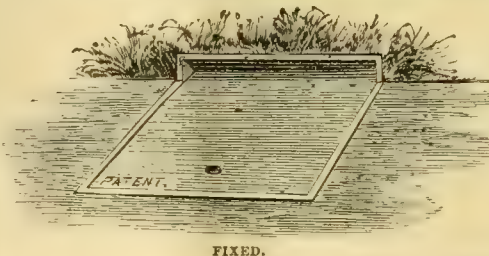


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claim for it, and in my opinion has, for the sides of walks and
drives, many advantages over the ordinary grating. Perhaps
the best proof I can give you of this is that, as opportunity
offers, I intend to use them instead of gratings. Faithfully
yours. J. WILLARD."—To Messrs. VINCE & VINE.

From W. WALTON, Esq., Secretary to the LONDON CEME-
TERY COMPANY. The London Cemetery Company, 29, New
Bridge Street, Blackfriars, E.C., July 25, 1892.—"To Messrs.
Vince & Vine, Highgate. I am very happy to testify that your
Patent Garden Gully-Frames in lieu of the old fashioned
gratings answer admirably. They were by my authority fixed
in a new pathway made in Highgate Cemetery, and in the
recent thunder showers they were severely tested and were

most effectual in preventing the scouring of the gravel. At
the inspection my Directors were much pleased with them,
and gave instructions that they were to be used when required
at Nunhead Cemetery.—I am, yours truly, W. WALTON,
Secretary."

From Messrs. CUTBUSH AND SON, Highgate and Barnet
Nurseries.—"Highgate Nurseries, London, July 27, 1892.—
Dear Sirs,—Referring to the Improved Garden Gully you
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hilly, and during the recent storms all the ordinary gullies
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shall not hesitate to recommend the same to anyone requiring
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1892.

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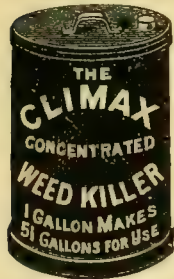
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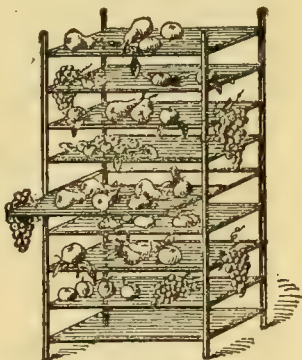
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MR. THOMAS BURGESS, of Stetchworth Park Gardens, Newmarket, as Head Gardener to the Hon. Mrs. ALFRED EGERTON, Claudon Regis, Claudon, Surrey.

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TO HEAD GARDENERS.—Situation wanted by a strong Lad (age 15), useful Inside and Out. Premium not objected to. One year's reference.—GARDENER, Coulson Court, Caterham, Surrey.

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TO GARDENERS.—Situation wanted by a strong young Man (age 19) in Flower Garden, under the Foreman. Both preferred.—J. PERKINS, Thornham Hall, Eye.

TO NURSERYMEN and OTHERS.—Situation required by a young man (age 27), Inside, or Inside and Out. Good references. Six years' in last situation.—G. BOON, Thornecombe Chard.

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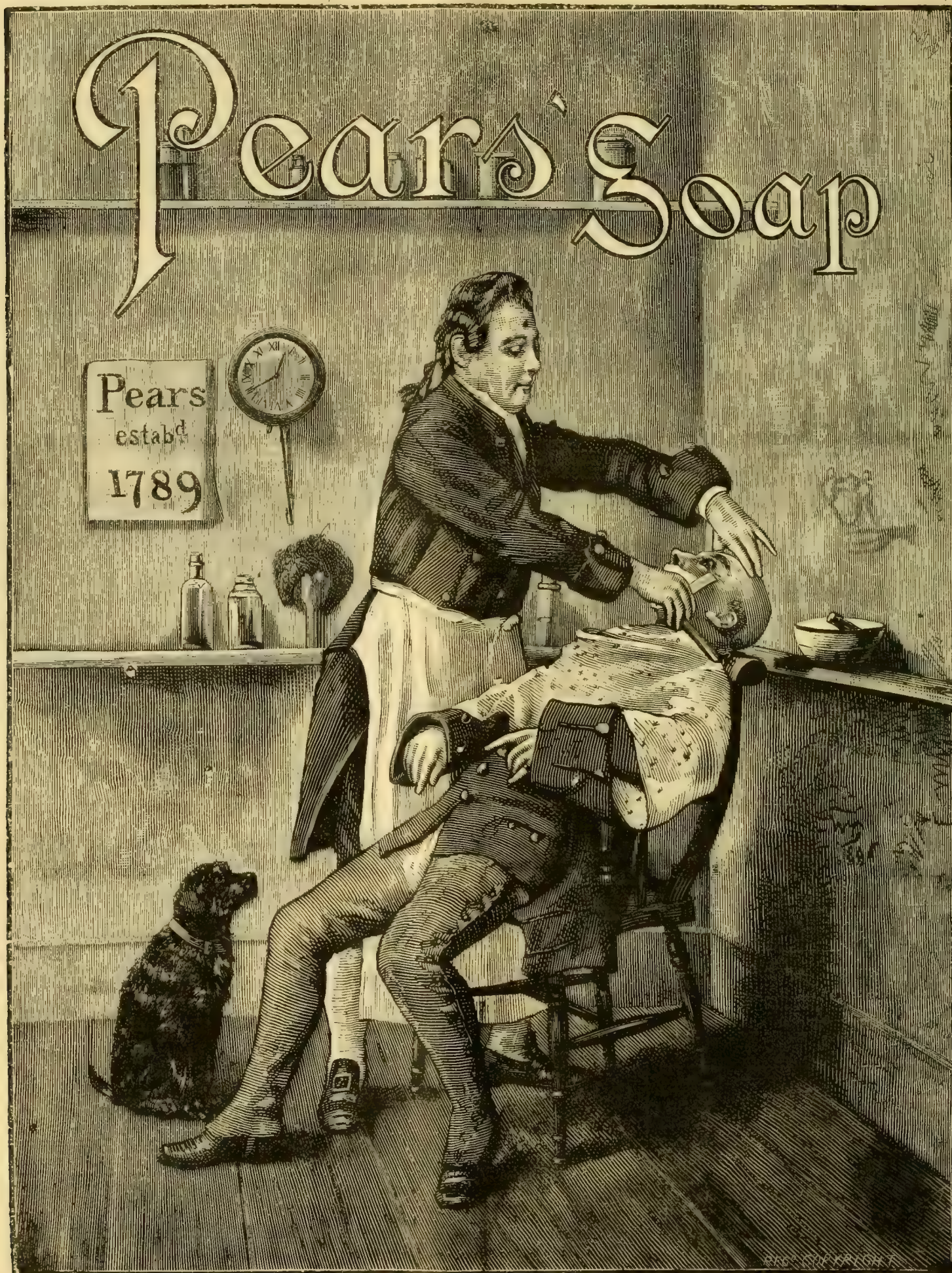
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Monday Next. Plants and Bulbs.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY NEXT**, October 10, at 12 o'clock, 160 **AZALEA INDICA**, in variety; 60 **A. MOLLIIS**; 21 **ASPIDISTRAS**, from Belgium; 40 lots of well-grown **PALMS**, including *Phoenix reclinata*, *Scaevola elegans*, *Kentia* of sorts, *Ptychocheilus Alexandrie*; **FICUS**, **THREE FERNS**, importation of **IRIS**, **NARCISSUS** (true)—*Sir Watkin*, *Emperor*, *Horsefieldi*, *maximus*, and others; double **PRIMROSES**, in variety; **CARNATIONS**, in fine assortment; quantity of **POLYANTHUS**, **NARCISSUS**, **HARDY CLIMBERS**, and **GREENHOUSE FERNS** from an English Nursery, &c.

On view morning of Sale, and Catalogues had.

Tuesday Next.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on **TUESDAY NEXT**, October 11, at half past 12 o'clock, by order of Messrs. Fred. Horsman & Co., of Colchester, a superb lot of

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On view morning of Sale, and Catalogues had.

Tuesday Next.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on **TUESDAY NEXT**, October 11, 30 lots of **LELIA ANCEPS**, amongst them some extraordinary varieties—

30 lots of **ONCIDIUM CAVENDISHIANUM**, in very fine condition.

20 lots of **ONCIDIUM REFLEXUM**, fine clumps.

20 lots of **ONCIDIUM ORNITHORHYNCHUM**, very good.

On view morning of Sale, and Catalogues had.

Thursday Next.

100 **AZALEA INDICA**.

50 **AZALEA MOLLIIS**.

100 **DRACENAS**, four varieties.

50 **DEUTZIA GRACILIS**.

100 **PALMS**, comprising *Kentia Fosteriana*, *Latania borbonica*, *Phoenix tenuis*, *Areca Baueri*, *A. Sapida*.

75 **PLANTS**, including *Aspidistra variegata*, *Ficus elastica*, *Phalangium lineare*, and *Aralias*, from well-known nurseries in Belgium.

Also six fine plants of **LAPAGERIAS**, 40 lots of **FERNS**, 200 lots of **HARDY BULBS**, in variety; **GREENHOUSE** and **OTHER PLANTS**.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **THURSDAY NEXT**, October 13, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Friday Next.

LELIA GRANDIS TENEBROSA.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, and 213, Park Road, Clapham, S.W., to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on **FRIDAY NEXT**, October 14, at half past 12 o'clock, a marvellous fine consignment of the new and beautiful—

LELIA GRANDIS TENEBROSA,

embracing splendid specimens of unusual size, with 30, 40, and 50 bulbs.

Our collector has been the first European who has seen it in its native home. A photo. of himself and his men collecting *Lelia grandis tenebrosa* has been figured in the *Gardening World*, March 28, 1891. In appearance, the plant resembles *Lelia purpurata*, keeping the same character under cultivation, and is seemingly very free-flowering. The flowers are of immense size, the petals being broad, and do not reflex, as in *Lelia purpurata*, giving the flower a bolder appearance. The lip varies considerably; some plants have a dark purple throat, others being magenta-purple, both having white veins radiating from centre; many of the spikes show seven flower-seats.

The plant has proved itself to be of very easy culture, and free-blooming; some extraordinary fine varieties have been flowered out of the consignment we had last year. R. Brooman White, Esq., of Ardara, showed at the Drill Hall one of the largest and finest coloured forms yet seen, and admired by everybody who saw it.

All the plants are in the best possible condition, well-leaved, and dormant; they can be recommended with every confidence. This grand novelty should be in every collection.

On view morning of Sale and Catalogues had.

Hackney, N.

Close to Hackney Downs Railway Station.

ABSOLUTE CLEARANCE SALE, WITHOUT THE LEAST RESERVE.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Amhurst Nursery, Anton Street, Hackney, on **WEDNESDAY**, October 14, at 12 o'clock, entirely without reserve, the whole of the **STOCK**, comprising magnificent Specimen **PALMS** of all the leading sorts, a quantity of **Ophiopogon**, *Dracena Lindenii*, *indivisa*, *conje ta rubra*, and others; numbers of **Ferns**, *Phoenix reclinata*, *Begonia Rex*, *Aspidistras*, *Ficus elastica*, specimen *Scaevola*, *Cocos plumosa*, a fine specimen *Kentia*, 6 feet high, &c. Also 3 Covered Vans, including one Market Van, a large Iron Tank, &c.

On view day prior and morning of Sale.

Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Woking, Surrey.

A short distance from the Woking Railway Station.

UNUSUALLY IMPORTANT FIVE DAYS' UNRESERVED SALE

Of exceptionally well-grown and rooted **NURSERY STOCK**, in the finest possible condition for transplanting, and embracing the most important lot of Stock offered by Auction for many years, the quality of which is unsurpassed in the Trade, by order of the Trustees of the late Mr. George Jackman, the land being required for Building.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Woking Nurseries, Woking, Surrey, on **MONDAY NEXT**, October 10, and four following days, commencing at 12 o'clock precisely each day, several acres of exceptionally well-grown

NURSERY STOCK.

The whole of which is in the best possible condition

for removal; comprising—

10,000 **CONIFERS**, 3 to 9 feet, amongst them numerous fine specimens.

Thousands of smaller **EVERGREENS** and **CONIFERS**,

for Potting, &c. 1000 **BOX**, in variety.

10,000 Green and Variegated **HOLLIES**, 1 to 5 feet.

3000 **LAURELS**, of sorts, 1 to 5 feet, **PORTUGAL LAURELS**.

5000 Named **RHODODENDRONS**, Hybrids, &c., 1 to 3 ft.

A fine collection of

ORNAMENTAL DECIDUOUS TREES,

comprising Maples, Thorns, Almonds, Peaches, Planes,

Poplars, &c., 7 to 10 feet.

1000 **LIMES**, 5 to 10 feet.

FOREST TREES in great quantities; amongst them several

thousands of **Sycamores**, **Oaks**, **Beech**, **Spruce**, **Limes**,

Poplars, &c.

5000 Common **ASH**, 2 to 5 feet, 40,000 **QUICK**, 1 to 2½ feet.

20,000 **ST. JOHN'S WORT**.

A splendid collection of

ORNAMENTAL TREES, for Park and Avenue Planting,

10 to 20 feet, including Horse Chestnuts, Purple Beech,

Scarlet Oaks, Limes, Planes, Sycamores, Maples, Elms,

Poplars in variety, &c.

25,000 **FRUIT TREES**, comprising Standard, Feathered, and

Single Cordons, Apples, Pears, Plums, and Damsons.

3000 Standard and Feathered Flowering Almonds, Peaches,

Prunus Pissardi, and other Stock.

The Auctioneers have personally inspected the Stock, and

desire to call the attention of intending purchasers to this important Sale. It is undoubtedly the most important Auction of Nursery Stock held for many years, and an inspection will well repay a visit by those contemplating planting during the season.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises, or of the Auctioneers, Land Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Matlock Moor, Derbyshire

GREAT SALE OF RHODODENDRONS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Marriott & Co. to **SELL** by AUCTION, at their Branch Establishment, known as the Matlock Moor Nurseries, Matlock Bridge, 1½ mile from Matlock Bridge Station, on **WEDNESDAY NEXT**, October 12, at 12 o'clock precisely, a portion of their extensive Stock of

TRANSPLANTED RHODODENDRONS.

comprising Seedlings from the common hybrids, and also from the finest named sorts, the sizes being from two years bedded up to 2 feet high. All have been regularly transplanted, and are bushy, stocky stuff, such as can be confidently recommended to intending purchasers. Being grown on one of the highest of the Derbyshire hills, the growth is sturdy, and they are sure to succeed anywhere.

Also, by samples, 60,000 **TRANSPLANTED COMMON ASH**, in various sizes. The Stock will be offered in large lots, to suit the Trade and extensive buyers.

May be viewed. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Havant.—Absolute Clearance Sale.

FINAL PORTION OF THE WELL-GROWN NURSERY STOCK, by order of Messrs. Ewing & Co., who are relinquishing the business.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Sea View Nurseries, Havant, close to the Havant Station, on **TUESDAY**, October 18, at 12 o'clock precisely, without the least reserve, 5000 **ORNAMENTAL**, **FLOWERING**, and **FOLIAGE TREES**, a specialty at these Nurseries; 5000 **Conifers** and **Evergreen Shrubs**, in various sizes; 5000 **Standard** and **Dwarf Roses**; a few thousands **Seedling Briar**, **Manetti**, and **Rose Stocks**; 2000 **Standard** and **Pyramid Fruit Trees**, 2000 **Currants** and **Gooseberries**, 3000 **hardy Climbing Plants**, in and out of pots; thousands of small **Conifers** and other Stock, for growing on; **Stove** and **Stock Plants** of **Roses**, **Ivies**, **Limes**, **Planes**, &c.; **Greenhouse Plants**, **Palms**, **Ferns**, **Azaleas**, **Camellias**, **Garden Frames** and **Lights**, **Flower-pots**, &c.

On view one week prior to Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The FREEHOLD NURSERY to be SOLD. Particulars of the Auctioneers.

Bagshot.—Preliminary Announcement.

By order of Messrs. John Waterer & Sons.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at the renowned American Nurseries, Bagshot, Surrey, on **TUESDAY**, November 8, and **TWO FOLLOWING DAYS**, large quantities of splendidly-grown **NURSERY STOCK**.

Descriptive particulars will duly appear.

Worcester.

FIVE DAYS' ABSOLUTE CLEARANCE SALE of about 20 Acres of beautifully-grown **NURSERY STOCK**, carefully prepared for removal, by order of Messrs. Richard Smith & Co., a portion of their land in the City boundary being required for Building purposes.

Important to Noblemen, Gentlemen, Landscape Gardeners, Nurserymen, and others engaged in Planting.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the St. John's Nurseries, Worcester, about 20 minutes' walk from the Worcester Railway Station, on **MONDAY**, October 17, and **FOUR FOLLOWING DAYS**, at 12 o'clock precisely each day, without reserve—

25,000 **STANDARD** and **PYRAMID ORNAMENTAL TREES**, 4 to 18 feet, in great variety; 2000 *Prunus Pissardi*; 3200 **Purple Beech**, best dark-leaved variety; 500 **London Planes**.

5000 **FLOWERING SHRUBS** in great variety.

12,000 **SPECIMEN CONIFERS** and **EVERGREENS**,

1½ to 12 feet high; 2000 **Portugal Laurels**; 1600 **Gold and Silver Variegated Hollies**, **Standards** and **Pyramids**; 2500 **Golden Yews**, grand plants.

Large quantities of fine **Native LARCH**, 2 to 4 feet.

Ash, **Quick**, and other **FOREST TREES**.

Thousands of **FRUIT TREES**, including **Standard** and **Pyramid Pears**, hundreds of **Standard Victoria Plums**, grand trees; **Standard** and **Pyramid Damsons**, **Standard** and **Pyramid Apples**, **Black and Red Currants**, **Whitham's Industry**, **Keepsake**, and other popular **Gooseberries**.

Several hundreds of fine **Planting** and **Fruiting VINES**.

Forcing ASPARAGUS.

Thousands of **TEA** and **NOISSETTE ROSES**, in pots,

embracing the most popular plants.

Thousands of **CLIMBERS**, consisting of 1000 **Clematis Jackmanni**, 1000 **Clematis** in variety.

Berried AUCUBAS, in quantity, and other Stock.

Also 8 two-wheel **TRUCKS**, and 1 smaller do., suitable for Nurserymen and others.

The Auctioneers desire to call special attention to this highly important Sale. It is the first occasion on which an Auction has been held at these celebrated Nurseries, the necessity now arising solely on account of a portion of the ground having to be given up for building purposes; and the present Sale affords an exceptional opportunity to Noblemen, Gentlemen, and others desirous of acquiring large quantities of well-grown Nursery Stock.

Purchasers may arrange with Messrs. Smith & Co. to have their lots lifted and forwarded at the cost of labour incurred and material used. Luncheon provided each day at 11.30.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Sunningdale.

A few minutes' walk from Sunningdale Station.

THREE DAYS' ABSOLUTE CLEARANCE SALE, WITHOUT RESERVE.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. C. Noble, to **SELL** by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on **WEDNESDAY**, October 19, and **TWO FOLLOWING DAYS**, at 12 o'clock precisely, a choice Assortment of beautifully-grown **NURSERY STOCK**, including **Standard** and **Bush Rhododendrons** of the best named kinds, **Hybrid ponticum** and other **Rhododendrons**, 2000 **Azalea pontica**, 4000 **Aucubas**, 2500 **Portugal Laurels**, 15,000 **Conifers** in various sizes, comprising 4000 *Thuja americana*, 3 to 6 feet, fine for hedges and planting; 4000 *Thuja Lobbi*, 3 to 7 feet; 2000 **Spruce Firs**, 1½ to 2 feet; 6500 **Berberis**; 6000 **oval-leaved Privet**; 8500 **Limes** and **Planes**, 6 to 10 feet, fine and straight trees, particularly suitable for Avenue, Park, or Street Planting; many thousands of **Ornamental Trees** for immediate effect, several thousands of **Standard** and **Pyramid Fruit Trees**, 200 **Webb's Cob Nuts**, **Flowering Shrubs**, **Climbing Plants**, and other **STOCK**.

Purchasers can arrange with Mr. NOBLE to lift and forward any Lots to all parts of the Kingdom at cost of labour incurred and material used.

The Stock may be viewed any day prior to the Sale.

Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Knockholt, Kent.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. A. Waterman to **SELL** by AUCTION, on the Premises, the Hickmanias Nursery and Fruit Grounds, Knockholt Kent, 2½ miles from Halstead Station, S.E.K., on **WEDNESDAY**, November 2 at 12 o'clock, a quantity of well-grown and splendidly-rooted **NURSERY STOCK**, including a large number of specimen **Conifers**, **Laurels**, **Spruce**, **Austrian**, and other **Pines**, **Ash**, **Cupressus**, **Fruit Trees**, &c.

Full particulars will be duly announced.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers 67 and 68, Cheapside, London, E.C.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., **EVERY DAY**, at 12 o'clock, large consignments of first-class

HYACINTHS, **TULIPS**, **CROCUS**, **NARCISSUS**, and other **BULBS** from Holland. Lotted to suit the Trade and Private Buyers. 12 tons are sold every week.

On view morning of Sale, and Catalogues had.

Cliffe, near Rochester.

IMPORTANT TO FRUIT GROWERS, MARKET GARDENERS, AND OTHERS.
GREAT ANNUAL SALE, by order of Mr. W. Horne. **MESSRS. PROTHEROE AND MORRIS** will **SELL BY AUCTION**, on the Premises, Cliffe, near Rochester, adjoining Cliffe Station, South-Eastern Railway, on **WEDNESDAY, October 26**, at half-past 11 o'clock,

100,000 FRUIT TREES,

comprising 35,000 one, two, and three-year old Apples, Pears, Plums, and Cherries; 1000 Lady Sudeley and Bismarck Apples; 5000 of the new dessert Apple, Beauty of Bath; 50,000 Baldwin Black Currants, 4000 Red Currants, 10,000 Bob and Lad Gooseberries, 5000 John Ruskin Strawberries, also Noble, and other varieties, in large and small pots; 45,000 Paxton, Noble, and John Ruskin Strawberries, from open ground; 20,000 three-year Connover's Colossal Asparagus roots, from French seed; 50,000 early Rainham Cabbage plants, &c.

May be viewed. Catalogues may be obtained on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Hampton, Middlesex.—Absolutely without Reserve.
CLEARANCE SALE of the **FINAL PORTION** of exceptionally well-grown **FRUIT TREES** and **General NURSERY STOCK**, by order of Messrs. Mahood & Son, the Ground having to be Cleared for other purposes.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Tangle Park Nurseries, Buckingham Estate, Hampton, about 1 mile from Hampton Railway Station, on **THURSDAY, October 27**, at 12 o'clock precisely, without the slightest reserve—
 2,000 STANDARD APPLES 2,000 MAIDEN APPLES
 1,000 " PEARs 10,000 DWARF ROSES
 3,000 STANDARD ROSES.

A quantity of dwarf-trained **FRUIT TREES**, consisting of Apples, Pears, Plums, Peaches, &c., Standard-trained Peaches, Scarlet and Pink THORNS, Green HOLLIES, LABURNUMS, large quantity of Standard LIMES, young clean stuff with good heads; WEEPING WILLOWS, CONIFEROUS SHRUBS, AUCUBAS, and other STOCK.

May now be viewed. Catalogues may be had on the Premises, also at the Nursery, High Street, Putney; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Groombridge, near Tunbridge Wells.**HOLLAMBY'S NURSERIES.**

GREAT UNRESERVED SALE of valuable **NURSERY STOCK**, all recently transplanted, and carefully prepared for removal.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION** on the Premises, as above, close to the Groombridge Station, on **THURSDAY and FRIDAY, October 27 and 28**, at 12 o'clock precisely each day, by order of Mr. Edwin Hollamby, enormous quantities of **CONIFERAE**, Standard, Dwarf, and other **ROSES**, 100,000 Larch and Scotch Fir, Ash and Spanish Chestnut, 100,000 strong transplanted Quick, 300 named and other **Rhododendrons**, Azaleas, Andromeda floribunda, Seakale (extra strong for forcing), 10,000 *Pinus austriaca*, &c.

May be viewed any day prior to the Sale. Catalogues may be had at the Nurseries, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Wandsworth Common, S.W.—Preliminary Notice.**By order of Mr. R. Neale.**

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Nurseries, Trinity Road, Wandsworth Common, S.W., in October, a large quantity of well-grown general **NURSERY STOCK**.

Choice Bulbs from Holland.

MR. J. C. STEVENS will **SELL BY AUCTION**, every **MONDAY, WEDNESDAY, THURSDAY**, and frequently on **SATURDAY**, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice **BULBS** arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Thursday, October 27.

The Valuable **COLLECTION** of **ESTABLISHED ORCHIDS** and **STOVE and GREENHOUSE PLANTS**, formed by the late C. B. Powell, Esq.

MR. J. C. STEVENS has been favoured with instructions to **SELL BY AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY, OCTOBER 27**, at half-past 12 o'clock precisely, the valuable and well-grown collection of **ESTABLISHED ORCHIDS** formed by the late C. B. Powell, Esq., of Drinkstone Park, Bury St. Edmunds, comprising amongst other fine things—
 A Grand Plant of *SOBRALIA XANTHOLEUCA*, probably the finest in the Kingdom.

Magnificent specimens of rare *CYPRIPEDIUM*s, beautifully grown, a variety of choice *DENDROBIUM*s, *CATTLEYA*s, *AERIDES*, *ODONTOGLOSSUM*s, *CALANTHE*s, *LÆLIA*s, &c. In this Sale will be included the **STOVE and GREENHOUSE PLANTS** in Splendid Condition.

On view morning of Sale, and Catalogues had.

Annual Sale.—Dorking Nurseries, London and Reigate Roads, Dorking, close to London, Brighton and South Coast and South-Eastern Railways.

MESSRS. WHITE AND SONS are instructed by Messrs. Ivery & Son, to **SELL BY AUCTION**, on the Premises, on **TUESDAY, October 18**, at 11 o'clock precisely, commencing in the London Road Nursery, in Lots to suit Private Purchasers, well-grown and healthy young **NURSERY STOCK**, in first-rate condition for transplanting, viz., Aucubas, Box, Hollies, Portugal Laurels, Golden and Common Yews, Flowering Shrubs in varieties, assorted Thuisas, Abies Douglasii, Thuropis, Retinosporas, and Cupressus, Pinus, and Piceas in variety; Spruce and other Firs, up to 10 feet, for immediate effect; Cedars, Junipers, Araucarias, Acer variegata, and Ornamental Trees, as Poplars, Birch, Plane, Maple, &c., choice Standard and Pyramid Apples, Plums, and Pears, Gooseberries, Currants, Cobnuts, and Filberts, and thousands of Laurels of various sizes.

Catalogues may be obtained at the hotels in the neighbourhood; of Messrs. IVERY and SON, Nurserymen, Dorking and Reigate; at the place of Sale; and of the Auctioneers, Land Agents, and Valuers, High Street, Dorking, and on Fridays, at Leatherhead.

Important Sale of about 10,000 Young Fruit Trees

and **PLANTS**, at

LOVELAND'S FARM, KINGSWOOD, near **REIGATE**, Surrey,

2 miles from Redhill, and 1 mile from Mertsam.

By order of Mr. Richard Binns. To Clear the Ground.

MR. HARRIE STACEY is favoured with instructions to **SELL BY AUCTION**, on the Premises, on **FRIDAY, October 21**, at 11 to 12 o'clock, the above, consisting of a choice selection of Czar and Victoria **PLUMS**, Early Julien and other **APPLES**, Cox's Orange Pippins, Worcester Pearmain and Blenheim Orange; **RASPBERRIES**, Black, Red, and White **CURRANTS**, **STRAWBERRY RUNNERS**, Coe's Golden Drop **PLUMS**, and others.

Catalogues may be had at the usual Inns in the neighbourhood, and of Mr. HARRIE STACEY, Auctioneer and Valuer, Reigate and Redhill.

GREAT NURSERY SALE,

AT

OBAIGLEITH NURSERIES,
COMELY BANK, EDINBURGH,

ON

WEDNESDAY and THURSDAY, OCTOBER 12 and 13.

Each day at 11 o'clock.

MR. DAVID MITCHELL, Horticultural Auctioneer, has been commissioned by Mr. J. S. Ireland to **DISPOSE OF**, by **PUBLIC AUCTION**, on the above dates—

A **MAGNIFICENT COLLECTION** of
ORNAMENTAL TREES and SHRUBS,

Comprising—

5000 **SYCAMORES**, from 10 to 15 feet, with clean, straight stems, and well grown.

4000 Choice **POPULARS** of sorts, 8 to 12 feet—an extra fine lot.

3000 **PYRUS** of sorts, 8 to 12 feet, fine.

1500 **LIMES**, 8 to 10 feet, a magnificent lot, with fine clean, straight stems.

2000 **ELMS**, 7 to 10 feet, straight stems.

1200 **BEECH**, 8 to 10 feet, fine.

30,000 RHODODENDRONS,

consisting of Hybrid Seedlings, Named Hybrids, and Ponticums, from 1½ to 3 feet. A **GRAND LOT**.

Thousands of fine **SHRUBS**, **HOLLIES**, **AUCUBAS**, **SCARLET** and **WHITE THORNS**, **ROSES**, &c.

Catalogues now ready. May be had from Mr. DAVID MITCHELL, 6, Comely Bank; or Mr. JOHN S. IRELAND, Nurseryman and Seedsman, 81, Princes Street, Edinburgh.

Investment.—Flowers, Fruit, Vegetables.

£750 WANTED, to add Immediate Extension in above profitable Branches. Repayment three years. Interest, Bonus, or with Employment. Bona fides guaranteed.

Address, Ashton, Keynes, Tottenham, Middlesex.

WANTED TO PURCHASE, about 2 Acres of **LAND**, suitable for Market Growing, within easy distance of Railway, and about 12 miles from Covent Garden. North of London preferred.—Apply to K. A., Guelph Cottage, Milton Road, Hampton-on-Thames.

WANTED TO RENT, a **GENTLEMAN'S GARDEN**, with plenty of Glass, Orchard, &c.

Apply to C. T., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Crown Lands, Hampton Court, Middlesex.

TO BE LET, with immediate possession, about 11 acres of productive **KIP HEN and ORCHARD GARDENS**, adjacent to Hampton Court Palace, and close to Hampton Court Station on the South-Western Railway, with the Vineries, Peach Houses, Forcing Pits, Tomato Houses, and the Cottage, Shop, Store-room for Fruit, and other Buildings thereon.

The Gardens are walled in, and subdivided with internal walls, and the walls and grounds are well stocked with Fruit Trees, and Currants and other Bushes.

Apply to Messrs. CLUTTON, 9, Whitehall Place, London, S.W.

FLORIST, FRUITERER, and SEED and BULB BUSINESS for SALE, in Essex. Two Greenhouses at back of Shop. A good opening. Cash trade.—SHADRAKE, three doors from Leyton Station, G.E.R.

FOR SALE, a compact, attractive, old-established **NURSERY, SEEDSMEN, and FLORISTS' BUSINESS** (including Retail Shop); several Greenhouses, comprising 4000 square feet of glass, well-heated, &c. Magnificent opportunity. Only Nursery in seaside town of 40,000 inhabitants. Within easy run of London.

For full particulars apply to L. M. N., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Spalding, Lincolnshire.

TO MARKET GARDENERS, FRUITERERS, and OTHERS.

TO be SOLD, by Private Contract, or **LET**, the **ORCHARD, GARDEN, GLASSHOUSES**, and Premises belonging to the late Mr. John Vincent, Winover Road, Spalding. The Property comprises a comfortable Dwelling-house, with Stable, Cart-shed, Store-houses, and Granary, two Cottages, Hothouse, Greenhouse, Rosary, and three long ranges of Cucumber and Tomato-houses, all fitted with Heating Apparatus complete. The Garden and Orchard adjoining contain about 5 acres of most productive Land, and planted with Fruit Trees and Gooseberries, now in full bearing. The Property is Freehold and Title-free, and is most conveniently situated, near to the Spalding Station of the Great Northern, Great Eastern, and Midland Railways.

Possession may be had at Christmas next.

To view the property, and for further particulars, apply to Messrs. S. and G. KINGSTON, Auctioneers, Valuers, and Land Agents, Spalding.

Essex.

IMPORTANT TO TOMATO AND CUCUMBER GROWERS, FLORISTS, AND OTHERS.

FOR IMMEDIATE SALE, at a great Sacrifice, Long Leasehold **NURSERY**. Several Greenhouses, 3 acres of Ground. Low rent. Must be sold at once. Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

To Nurserymen and Florists commencing Business.

HAMPTON-ON-THAMES, on the Marling Park Estate, free from London fogs, a deep rich Loam, the favourite neighbourhood for Growers. **FREEHOLD LAND** for **SALE**, on easy system of Purchase, or to be **LET** on Lease. For full particulars apply to Mr. FRED. G. HUGHES, Surveyor, The Estate Office as above.

Rare opportunity, very seldom met with.

FOR IMMEDIATE DISPOSAL, or RENTAL, as a thorough going concern, large **MARKET, FLORIST, and LANDSCAPE BUSINESS**. Established over thirty years, in one of the most fashionable South Coast Watering-places. Nearly 25,000 feet of Glass, all thoroughly heated on latest principle. The houses are full of Stove, Greenhouse, and other Marketable Plants. There is also a grand opportunity for Erica and Tomato-growing.

This is a genuine affair, and only principals treated with. Full particulars will be given and every enquiry courted.

Apply to **HORTICULTURE**, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Conservatories.—Great Bargains.

WRINCH AND SONS, Ipswich, and 57, Holborn Viaduct, London, E.C., have for Sale, at greatly reduced prices, a handsome **SPAN-ROOF CONSERVATORY** with Lantern Roof, quite new, size 25 feet by 15 feet—original price, £135; sale price, £95. Also a **CONSERVATORY**, size 20 feet by 12 feet, Span Roof—original price, £87 10s.; sale price, £45. Prices include fixing complete. Drawings and full particulars on application.

We shall also be pleased to send our Illustrated **CATALOGUE** of Horticultural Buildings free on application. Surveys made. Plans and estimates given.

WRINCH AND SONS, Ipswich and London.

FOR ORCHIDS and GARDENERS to Grow Them, apply to **SANDER'S**, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

TO IMPORTERS and OTHERS.—An Auctioneer of some standing wishes to **RECEIVE**, at once, a **CONSIGNMENT OF DUTCH BULBS** for SALE.

Apply, M., *Hampshire Echo*, Bellevue Road, Southampton.

GOLDEN EUONYMUS, good bushy stuff, for Potting. Splendid Colour.

H. H. MOORE, Chichester.

CARNATION Mrs. Reynolds Hole, the popular terra cotta, strong rooted layers, 20s. per 100; £9 per 1000. Cash.

CRANE AND CLARKE, Hillside Nursery, March, Cambs.

GREEN HOLLIES.—Special offer of, for present permanent planting. Young, strong, and healthy. Have been well transplanted; chiefly bushy. Also, nice Pyramids, 1½ to 2 feet. Prices, from 12s. to 30s. per 100; £5 to £13 10s. per 1000.

Samples and Prices on application.

I. CRICK, Amphill, Beds.

POT VINES.

FINER THAN EVER, CLEAN, SHORT-JOINTED, WELL-RIPENED.

J. R. PEARSON & SONS, Chilwell Nurseries, Notts.

ORCHIDS.

BRAZILIAN ORCHIDS supplied in large or small quantities.

CATALOGUE and particulars free on application.

A. H. GRIMSDITCH, Importer, 5, Clayton Square, Liverpool.

Depôt: 17, Dryden Road, Edge Lane, Liverpool.

SOLE AGENT FOR CARLOS TRAVASSOS, RIO DE JANEIRO.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD AND NURSERIES,

CARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other **ROSES**, in pots.

ERICAS, AZALEAS, PALMS,
FERNS, &c., &c.

CATALOGUES, with full particulars, post free on application.

Special Quotations to the Trade.

EXHIBITIONS.

CRYSTAL PALACE.

GRAND EXHIBITION OF CHRYSANTHEMUMS, FRIDAY and SATURDAY, November 4 and 5, 1892.
Schedule, post free, on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close October 28.

National Chrysanthemum Society.

THE AUTUMN EXHIBITION OF CHRYSANTHEMUMS and TABLE DECORATIONS will be held at the ROYAL AQUARIUM, WESTMINSTER, on OCTOBER 12, 13, and 14. Special Prizes for Vegetables by Messrs. Sutton & Sons.

Schedules of Prizes on application to

RICHARD DEAN, Sec., Ranelagh Road, Ealing, W.

WATFORD CHRYSANTHEMUM SOCIETY.

THE SEVENTH ANNUAL EXHIBITION OF CHRYSANTHEMUMS and other AUTUMN FLOWERS and FRUITS will be held in the Agricultural Hall, Watford, on TUESDAY and WEDNESDAY, November 1 and 2, 1892, when Prizes to the value of £130 will be competed for. Entries close on THURSDAY, October 27.

CHAS. R. HUMBERT, Hon. Sec.

Watford, Herts.

TWICKENHAM HORTICULTURAL SOCIETY.

THE ANNUAL AUTUMN SHOW will be held at the Town Hall, Twickenham, on TUESDAY and WEDNESDAY, November 15 and 16. Intending competitors will oblige by forwarding their entries on or before Friday, November 11.

For Schedules and further particulars, apply to

JAMES J. G. PUGH, Hon. Sec.,

2, Heath Road, Twickenham.

TIVERTON CHRYSANTHEMUM SOCIETY.

THE NEXT SHOW will be held in the Drill Hall on THURSDAY, Nov. 10, 1892.—For Schedules apply to R. P. COSWAY, Hon. Sec., Tiverton.

HARRISON'S VEGETABLE SHOW will be held in Leicester on NOVEMBER 9 and 10, 1892, when Prizes will be offered as follows:—

HARRISON'S LEICESTER RED CELERY.—The best Six Stems. 1st Prize, 20s.; 2nd, 10s.; 3rd, 5s.

HARRISON'S EARLY ROSE CELERY.—The best Six Stems. 1st Prize, 20s.; 2nd, 10s.; 3rd, 5s.

HARRISON'S EARLY MARKET CARROT.—The best Twelve Roots. 1st Prize, 10s.; 2nd, 5s.

HARRISON'S SELECTED INTERMEDIATE CARROT.—The best Twelve Roots. 1st Prize, 10s.; 2nd, 5s.

AUTUMN GIANT CAULIFLOWER.—The best Three Heads. 1st Prize, 10s.; 2nd, 5s.

HARRISON'S MAGNUM BONUM PARSNIP.—The best Twelve Roots. 1st Prize, 20s.; 2nd, 10s.; 3rd, 5s.

HARRISON'S IMPROVED DRUMHEAD SAVOY.—The best Three Heads. 1st Prize, 10s.; 2nd, 5s.

BRUSSELS SPROUTS OF ANY KINDS.—The best Four Stems. 1st Prize, 10s.; 2nd, 5s.

LEEK OF ANY KIND.—For the best Twelve. 1st Prize, 20s.; 2nd, 10s.; 3rd, 5s.

ONIONS OF ANY KIND.—The best Twenty Bulbs. 1st Prize, 20s.; 2nd, 10s.; 3rd, 5s.

BEET OF ANY KIND.—For the best Six Roots. 1st Prize, 10s.; 2nd, 5s.

POTATOS OF ANY KIND.—The best Twenty Tubers. 1st Prize, 40s.; 2nd, 20s.; 3rd, 10s.

Customers will be allowed to compete for Potato prizes with tubers not grown from our seed, and may exhibit more than one lot in any class, but will not be awarded more than one prize in each class.

CONDITIONS.—All exhibits to be grown from seed supplied by us (Potatoes excepted), and to be delivered the day preceding the Show (Tuesday, November 8); afterwards to be retained by us to exhibit on our Stands at subsequent Shows, and will not be returned unless previously arranged for.

HARRISON AND SONS, Leicester.

This advertisement will not be repeated.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maiden Vale, London, W.

20,000 extra strong CABBAGE PLANTS, sown end of July. Rainham, Meis's No. 1, Offenham, Ellam's Dwarf, &c., 3s. 6d. per 1000, free on rail.

BRADLEY BROTHERS, Nurserymen, &c., Bardney, Lincoln.

EVERGREENS for IMMEDIATE EFFECT.

Well-rooted, fine colour, and good shape.

AUCUBA JAPONICA, 2½ to 3 feet, 30s.; 3 to 3½ feet, 35s.; 3½ to 4 feet, 60s. per dozen.

CUPRESSUS LAWSONIANA, 4 to 5 feet, 15s. per dozen, 110s. per 100; 5 to 6 feet, 18s. per dozen, 130s. per 100; 6 to 8 feet, 30s. per dozen, 200s. per 100; 8 to 10 feet, 60s. per dozen.

C. L. ERECTA VIRIDIS, 4 to 5 feet, 42s.; 5 to 6 feet, 60s.; 6 to 8 feet, 90s. per dozen.

HOLLIES, Green, 3½ to 4 feet, 30s.; 4 to 5 feet, 35s.; 5 to 6 feet, 42s. per dozen.

LAUREL, COLCHIC, bushy, 4 to 5 feet, 12s.; 5 to 6 feet, 18s. per dozen.

„ ROUNDLEAF, 4 to 5 feet, 15s. per dozen.

„ PORTUGAL, 4 to 5 feet, 42s. per dozen.

PICEA NORDMANNIANA, 3 to 4 feet, 40s.; 4 to 5 feet, 48s. per dozen.

PINUS AUSTRIACUS, 4 to 5 feet, 30s. per dozen.

RETINOSPORA PLUMOSA, 3 to 4 feet, 24s. per dozen.

THUJA LOBBII, 4 to 5 feet, 15s. per dozen; 100s. per hundred.

„ OCCIDENTALIS, 6 to 8 feet, 21s.; 8 to 10 feet, 30s. per dozen.

THUIOPSIS BOREALIS, 5 to 6 feet, 60s.; 6 to 8 feet, 84s.; 8 to 10 feet, 120s. per dozen.

YEW, ENGLISH, 4 to 5 feet, 35s.; 5 to 6 feet, 60s. per dozen.

WELLINGTONIA GIGANTEA, 4 to 5 feet, 60s. per dozen.

JOHN JEFFERIES and SON, Royal Nurseries, Cirencester.

BOX EDGING.—A large quantity for Sale, near London, in large or small lots.—Apply for price, or to view same, to D. G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

BORDER CARNATION (Ketton Rose).

The best rose-coloured Border Variety; perfectly hardy; very free in flowering; fine strong Layers. Price on application to W. H. DIVERS, Ketton Hall Gardens, Stamford.

ROSES IN POTS.—Special offer. Several thousand Niphetos and other Roses, established in 12's and 16's, at £5 and £3 per 100.

GUIVER, BROTHERS AND LAWSON, Durant's Nurseries, Ponder's End, Middlesex.

ARUM LILIES.—To the Trade.—10,000,

6 to 8 inches high, 8s. per 100, Post Free; 1000 in small 60's, 24s. per 100.

GEO. H. BELL AND CO., Florist's, Manor Park, E.

1000 BOUVARDIAS, fine, in bud, 9s. per doz.;

5000 CHRISTMAS ROSES, strong for planting, 10s. per 100; 10,000 SEAKALE for forcing, 12s. 6d. per 100, 95s. per 1000; 1000 PICEA, PINUS, &c., fine ornamental plants, 9s. per dozen.—WALSHAW AND SON, Scarborough.

WHITE ROMAN HYACINTHS.

FOR ABSOLUTE SALE.

A large consignment just to hand, in splendid condition, at very low prices to clear, in cases as received.

WILLIAM DENMAN, 7, Catherine St., Covent Garden, W.C.

THREE INDIA-RUBBER PLANTS.—One

about 10 feet high, and the others about 8 feet; in strongly made, painted boxes, with handles. Capital condition and good foliage. No reasonable offer refused. Address—S. M., Brown, Gould, & Co., Advertising Offices, 54, New Oxford Street, W.C.

PEACH TREES.—A Gentleman has for Sale

(through alterations), 22 large Trained PEACH TREES, about 10 feet across, and 24 Standards, 6 to 12 feet high, under glass. Also ten trained APRICOTS, out doors. All healthy and in full bearing. Planted four years since.

W. COMPTON, Lambey, Nottingham.

Dutch and Other Bulbs.

DICKSON AND ROBINSON

offer, in first-size Bulbs, and of unexcelled quality:—

HYACINTHS, named, for Pots or Glasses, from 4s. per dozen.

HYACINTHS, distinct colours, for Bedding, from 16s. per 100.

HYACINTHS, mixed shades, for Bedding, 14s. per 100.

TULIPS, named, Single and Double, from 4s. per 100.

NARCISSUS, named, best varieties, from 2s. per 100.

CROCUS, Scillas, Snowdrops, Freesias, Iris, &c., &c.

Carriage Paid. Descriptive CATALOGUE on application.

Seed Warehouse, 12, Old Millgate, Manchester.

150,000.—Special Offer of Kentias.

W. ICETON has a large quantity of the

above to offer, very reasonable, at from £7 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well established, at £30 per 1000.

W. ICETON, Putney, S.W.

HARTLAND'S DAFFODILS!!!

DAFFODILS!—"Original Little Book" for the million.

BULBS!—"Little Book." A Cheap Edition. The most unique and select for Amateurs.

FLORAL ALBUM! of Conference Daffodils, illustrated by GERTRUDE HARTLAND. Copyright edition. Engraved by WELCH, of London, the price of which is 2s. 6d., but is presented gratis with Bulb orders value 40s.

The Daffodil Bulbs are magnificent.

WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

10,000 dozen WALLFLOWERS, SWEET

WILLIAMS, CARNATIONS, PINKS, CANTERBURY BELLS, FORGET-ME-NOTS, COLUMBINE, LAVENDER, and CAMPANULA, all transplanted and well-rooted, 1s. per dozen; choice PANSIES and VIOLAS, true to colour, 1s. 6d. per dozen; 400 dozen Countess of Kintore PANSY, 2s. 6d. per doz. Carriage paid on all orders above 5s. Cash with order.

T. COPPING, Kelsey Manor Gardens, Beckenham, Kent.

RICHARD MASON, Windlesham Nursery,

Bagshot, Surrey, begs to offer the following:—

RHODODENDRONS, to name, best varieties, flowering plants, 12 to 15 inches and 18 inches to 2 feet.

„ Ponicums, many thousand, 1½ to 2½ feet, suitable for covert planting.

KALMIA LATIFOLIA, 10 to 12 inches, full of bud.

ANDROMEDA FLORIBUNDA, 12 to 15 inches, full of bud, and extra bushy.

BERBERIS AQUIFOLIUM, 12 to 18 inches.

„ DARWINII, 18 inches to 2 feet.

SPRUE FIR, 3 to 7, and 8 feet.

PINUS AUSTRIACA, 2 to 5 feet.

ABIES DOUGLASSII, 5 to 10 feet.

THUIOPSIS BOREALIS, 2 to 7, and 8 feet.

ARBOR-VITAE, AMERICAN, 4 to 6 feet.

CUPRESSUS LAWSONIANA, 2 to 6 feet.

THUJA LOBBII, 3 to 8 feet.

WEYMOUTH PINE, 7 to 8 feet.

AZALEA PONTICA, 15 inches to 2 feet.

LAURELS, COLCHICA, 2 to 6 feet.

„ ROTUNDIFOLIA, 2 to 2½ feet.

„ PORTUGAL, 2 to 4 feet.

LIGUSTRUM OVALIFOLIUM, 2 to 3 feet.

„ COMMON, 2 to 3 feet.

QUICK (THORN), 2 to 3, and 3 to 4 feet, extra strong.

GOOSEBERRIES, fruiting trees, to name.

CURRENTS, fruiting trees, to name.

A large assortment of FLOWERING SHRUBS.

STANDARD FOREST and ORNAMENTAL TREES.

Also strong FRUIT TREES.

GREEN HOLLIES, Common, 1½ to 2½ feet.

Price and sample of any of the above on application.

Inspection invited.

Cash or reference from unknown Correspondents.

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and Sir Joseph Paxton, 3s. per 100; 25s. per 1000. RASPBERRY CANES.—Baumforth Seedling and Semper Fidelis, 7s. per 100; 50s. per 1000. Norwich Wonder and Fastolf, 4s. 6d. per 100; 35s. per 1000. DUTCH RED CURRANT TREES (strong 3-yr. old), 2s. 6d. per dozen; 10s. per 100. All carriage paid. Post-office Order with order.

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trees, good stems, splendid roots, all sizes from 8 to 18 feet high, and all other leading kinds of Standard Trees suitable for roadside or park planting.

IRISH IVIES in pots, 3 feet to 12 feet.

SHRUBS, TREES, ROSES, FRUIT TREES, CLIMBERS, &c., in endless variety. Specially low prices for quantities.

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ENGLISH YEW, 2 to 3, 3 to 4, and 4 to 5 feet.

GREEN HOLLIES, 2 to 3, 3 to 4, and 4 to 5 feet.

THUJA LOBBII, 3 to 4, 4 to 5, and 6 to 8 feet.

THUIOPSIS BOREALIS, 3 to 4, and 4 to 5 feet.

LAURELS, CAUCASICA, 2½ to 3, and 3 to 4 feet.

„ ROTUNDIFOLIA, 2½ to 3, and 3 to 4 feet.

„ PORTUGAL, 1½ to 2, and 2 to 3 feet.

AUCUBA JAPONICA, 1½ to 2, and 2 to 3 feet.

CUPRESSUS LAWSONIANA, 3 to 4, 4 to 5, and 6 to 8 feet.

RETINOSPORA PLUMOSA, 2 to 3, and 3 to 4 feet.

„ PISIFERA, 2 to 3, and 3 to 4 feet.

Special cheap offer by the dozen, 100, or 1000.

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The best of all for Forcing. Thousands
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A sample box, twelve of each, packed free on rail, for 18s.
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Fine strong plants, in 4-inch pots.
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100 Choice ALPINE and PERENNIAL PLANTS, in 50 kinds, purchaser's selection, 10s. 6d.
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CHAS. FRAZER'S EXORS.—Conservatories, Orchid-houses, Vineries, Greenhouses, Plant and Forcing houses. Best Materials and Workmanship guaranteed, at Moderate Prices. Intending Purchasers waited upon by appointment.
HOT-WATER BOILERS and HEATING APPARATUS, for large or small Greenhouses. Great variety of Garden Frames and Handlights kept in stock. All kinds of Garden Requisites, Poultry Appliances, Portable Summer-houses, Tool-houses, Pigeon Cotes, Dog Kennels, and Rabbit Hutches. Profusely illustrated CATALOGUE, post-free, for six stamps.
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In GARDENS, CONSERVATORIES, FERNERIES, LAKES, WATERFALLS, &c., also for
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ENSURES ECONOMY OF FUEL AND LABOUR.
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Magnificent Autumn and Winter Flowering.

ONCIDIUM TIGRINUM, with from 1 dozen to 4 dozen buds on a spike, 7s. 6d. to 30s. each.

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Largest Stock of CYPRIPEDIUM INSIPIDUM in the kingdom, in bud and flower, from 5s. to £2 2s. each, averaging 1s. a growth.

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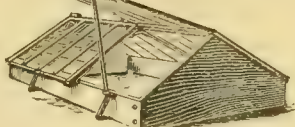


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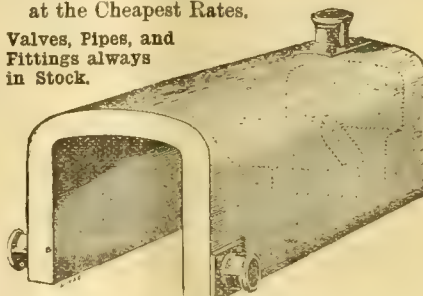
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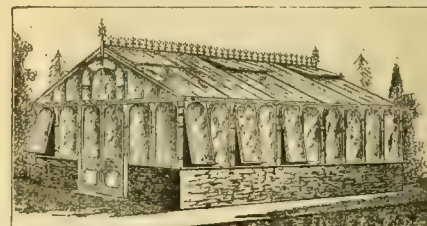
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 8, 1892.

NORMANHURST COURT.

IN view of the fact that the distinguished owner of this beautifully situated place is to preside at the annual dinner of the Gardeners' Benevolent Institution in November, I thought, as I was in the neighbourhood, it might be of some interest if I were to let your readers know what claim Lord Brassey has as a horticulturist and lover of the garden to assume such a position. I was staying at Bexhill-on-Sea, a place I can conscientiously recommend to anyone who wants a quiet and healthful seaside place within two hours of London; the air is delightful, there is a wide expanse of sea, and good bathing facilities. Normanhurst is distant about six or seven miles, and Battle Abbey about two miles further, and probably no greater contrast could be found in all England than that between these two places—the one spick and span with all the appliances of modern civilisation, the other memorable by its age and for the historic memories that are connected with it.

The house itself presents no particular features; the rooms are not large, and it is interesting chiefly from the large collection of curios brought home by the owner of the "Sunbeam" in his voyage round the world. Nearly everybody has heard of the *Voyage of the Sunbeam*, and so everyone who visits Normanhurst is anxious to see the collection, and thus it has been made a show-place; but I have, I must confess, little interest in these things, or in any "show-houses." There is other matter more interesting to me than clubs and spears, corals and vases, and as soon as I could decently do so, I hied me away to the garden, and enquired for Mr. Allen, and found, as I have nearly always done, that in the gardener I was sure to meet courtesy and kindness, and a readiness to impart any information I required. He is a Cornishman. His father lived for fifty years as gardener at Tregothnan (Lord Falmouth's), and an intimate knowledge of that genial and enthusiastic horticulturist, the Hon. and Rev. J. Townsend, Boscawen, at once made us akin, and under his guidance we made a tour of the grounds and gardens. As far as I could judge, the main features of the place are the Conifers and flowering-shrubs. On these the place is made to rely more than on flowers. The place is admirably suited for it; it stands high, embosomed in Oak and Beech woods, with which this part of Sussex abounds. The ground is undulating, thus giving facilities for landscape gardening, which have been carefully made use of. Lord Brassey himself has a keen eye for

the beautiful, and the condition of the grounds and shrubberies show this; the soil being a light and sandy one, seems to suit Conifers exactly. There is no effort at a pinetum, which generally means formality and ugliness, but they are dispersed amongst the woods, and will, in time, add greatly to the beauty of the landscape. I was glad to find that neither Wellingtonias nor Araucarias find favour in his sight. There were a few, but, he holds the opinion (which I have often expressed), that the Wellingtonia will never add to the beauty of our English woods or lawns. When young it is exactly like one of the trees in our children's toy farm-yard, and when it grows older the lower part is bare, and it leaves a head by no means so graceful as our Scotch Fir. Of the Araucaria, he says you can make as good a one out of iron, and in truth this expresses pretty much what one feels about its stiff and formal growth; but there are other Conifers which are just the very reverse of these; and the two which most struck me here were Cedrus atlantica glauca and Abies Albertiana. It is impossible to exaggerate the beauty of the former; when the sun shines upon it, it is like as if flooded with silver, while the graceful form of the latter, and its delightful fresh colour, makes it a most valuable addition. Then there are Abies Douglasii, Nordmanniana in considerable numbers, Pinsapo, and the various species of Conifers which have been introduced of late years, and which tend so much to vary our plantations, and are, I think, much more in their place than when dotted singly on a lawn. One of the tennis lawns has a beautiful surrounding of Rhododendrons, Kalmias, and Azaleas, and must be in May and June a very pleasing feature. Of course, alterations and improvements are taking place, and in a few years it will assume a different aspect. The house against which Ampelopsis Veitchii, Ivy, and other climbers have been planted is now rapidly being covered, and the first signs of its autumn change was showing itself on the Ampelopsis, indicating what a glow of brilliant colour will soon envelop it.

Passing away to the walled garden, we were surprised to find what an excellent crop of Pears and Apples there was. There is a long arched trellis work stretching over the middle walk and the two side walks, and although the crop was not a large one, yet there was a better supply than I have seen in many gardens this season, and, I need hardly add, they were all of the best varieties. Mr. Allen was not likely to commit the mistake of planting inferior sorts. This is one of the very few gardens in which I have found a very favourite Pear of mine, Comte de Lamy, appreciated. To my mind it is one of the two best October Pears we have, the other being Doyenné du Comice. The latter has the advantage of size and appearance, but I do not think there is much to choose between them in point of flavour. Here, also, that best of all early Apples, the Irish Peach, is good, and much valued, and yet I have gone into many a large and small garden, where neither of the fruits named were even known. Peasgood's Non-such was in beautiful order, and Mr. Allen showed me a dish of it which he was sending to the Battle Flower Show, and which obtained, I find, as he expected, the first prize.

There were, of course, the usual range of hot-houses, in all of which there was evidence of good management. The Grapes were well coloured, and an even crop all over the houses, not with a sensational bunch here and there, but with a good crop of fairly sized bunches. Of course, as in most places, two varieties gave the

staple supply, Black Hamburgh and Muscat of Alexandria. Others are introduced as matter of curiosity, but the *pièces de resistance* are these two varieties.

But now I come to that which most interested me, as it belongs to my own special department, the cultivation of the Rose; and here Mr. Allen has shown that he can get out of the ordinary rut prevalent in large places. Can anything be more dismal than what we too often see, a rosary so-called, with fantastic arches and such like things too often in a position where it is next to impossible to make them grow. It may be as I saw it in one grand historic place, so overshadowed by huge Elms, that mildew reigned supreme, and there was hardly a flower worth looking at, though as a rule you found old and now obsolete varieties, which most amateurs have long since discarded. Here the rosary was different; it was not large, it was well situated, and the newest and best varieties were grown, many of which such as Mrs. John Laing were in good bloom.

Here, too, I see that universal favourite, William Allen Richardson, occupying such a post of honour as I have never before seen him doing, occupying the entire back wall of a low house, some 25 feet long; here, in the early part of the year it produces thousands of its brilliant-coloured orange-yellow flowers, of which, it appears, there can never be too many, so highly are they appreciated for table and vase decoration; with ladies it is now a great favourite. There is still a small portion of the wall occupied by a Gloire de Dijon, but this is doomed, and William Allen will very soon fill up the space.

In another house, in a similar position, I saw another Rose of the same character, quite unknown to me, but certainly deserving of a place for those who desire button-hole Roses. I do not find it in the list of any English Rose-grower; it is called Madame Ferdinand Jamain, and is said there to have been raised by Ledechaux. The outer portion of the bud is nearly as deep as William Allen, but there is in the centre a delicate flush of peach, which adds to its beauty, and as it is an equally profuse bloomer, it is quite as valuable, and comes in a little later than the better-known flowers. Mr. Ben Cant was, I am told, much pleased with it, and through him it may yet, probably, find its way into general cultivation. Mr. Allen told me that he obtained it many years ago from the late Mr. Henry Bennett, when he was residing at Shepperton—and he knew what a useful Tea Rose was.

There was also in the same house yet another Rose which was new to me, a very pretty light yellowish Rose, called Coquette de Lyon, which are also found very useful for cutting. It is curious how one now and then stumbles on a Rose which has been overlooked in the fierce battle for life, but which some one has "picked up" and cherished.

Here was also an admirably-grown collection of Chrysanthemums, consisting of several hundred pots, and a number of other things which we are accustomed to see in a well-ordered garden, but which neither your space nor the profit of your readers will permit me to enumerate. All that I have attempted to do is to show that Lord Brassey takes a decided interest in horticulture, and that in all the surroundings of Normanhurst there are evident proofs of his taste and liberality. I need hardly say that I was received with the utmost courtesy by Mr. Allen, who would have shown me many more things had time permitted. He and his employer have seen the place year by year improving, and they will

have the satisfaction of knowing that each year will add to its beauty.

I think, then, that when Lord Brassey takes the chair at the annual dinner of the Gardeners' Benevolent, he may be hailed as a worthy occupant of it, not only from his high position, but also because he is in the true sense of the word an "English gardener." *Wild Rose.*

NEW OR NOTEWORTHY PLANTS.

PEPEROMIA INQUILINA, HEMSL., sp. n.*

This humble little plant was sent to Kew for a name by Mr. W. Lees, of South View, Oldham, with the following history:—"Whilst selecting some newly-imported pieces of Odontoglossum Rossi majus at the Liverpool Horticultural Co.'s Nursery, Garston, near Liverpool, in December, 1890 (I think it was), I came across one piece with the plant, a portion of which I send you, growing amongst the bulbs. The stems were then 1 or 2 inches in height, and growing erect. After having made my purchases, the piece alluded to being amongst the lot, I decided to allow it to remain, embedded as it was, amongst the bulbs, and endeavour to grow it on. I put the Odontoglossum and this plant in a wood basket with peat, and it has grown well under the same treatment as the Odontoglossums. Some of the shoots are 6 inches long, and those nearest the edge of the basket hang over and grow downward. The basket is hung up in the centre of a span-roofed house close to the glass, and near to the door."

Peperomia is a genus of about 400 described species, but fewer than twenty are enumerated in Nicholson's *Dictionary of Gardening*, though, of course, this is only a selection, and does not include many that have been raised and cultivated in botanic gardens from time to time. A few of the species, such as *P. arifolia*, *P. eburnea*, *P. marmorata*, *P. maculosa*, and *P. Saundersii*, have been cultivated for their ornamental foliage, and are very beautiful objects, though their flowers are exceedingly minute and unattractive.

The present plant does not even possess showy foliage, but, like a small Selaginella, it is very pretty creeping amongst Orchids, where it is quite at home. It is a trailing, succulent plant, recalling *Pilea*, but having larger leaves, usually arranged in fours on the slender bright red stems, but there are sometimes three at a joint, sometimes five at a joint, and more rarely only two; they are fleshy, orbicular, or obovate, borne on very short stalks, and rarely more than a quarter of an inch across. The flowers, as in the genus generally, have neither calyx nor corolla; each one consisting of two stamens and an ovary, sheltered by a peltate scale or bract. Individually, they are undistinguishable without the aid of a magnifying glass, and are crowded into tail-like, short-stalked spikes about an inch long, terminating the branchlets.

In so large a genus it is difficult, even with considerable research, and a rich herbarium for reference, to determine whether a species has been described; and it is possible that this one may have been previously described, though I have failed to identify it with any described species. In the Kew Herbarium are specimens of the same species from various localities in Mexico and Guatemala. Some of them have been referred to the widely-spread *P. reflexa*, and some to other allied species. To complete its history, and furnish data for its identification, I may record the localities where this plant has been found and the names of the collectors: Wartenberg, near Tantoyuca, Huasteca, Mexico, collected by L. C. Ervendberg in 1858, and forming No. 358 of his

* *Peperomia inquilina*, Hemsl., nova species.—Species ex affinitate *P. reflexæ* sed multo gracilior, caulibus repentibus ad nodos radicantibus. Planta glabra, multicaulis, procumbens; caulibus carnosissimis tenerrimis rubentibus. Folia breviter petiolata, sæpissime quaternis, interdum ternis vel quinis, rarius binis, carnosissimis, eveniunt, orbicularia vel obovata, circiter tres lineas diametro, interdum emarginata. Spicæ terminales, cum pedunculo 1-1½ poll. longæ. Bractea peltatæ. Stigma fere sessile, terminale. Bacca oblonga, minima.

collection; Valley of Cordova, Mexico, Bourgeau, No. 1805; Colipa, Mexico, Liebmann, 125; region of San Luis Potosi, Mexico, Parry and Palmer, 801; Volcan de Fuego, Guatemala, collected by O. Salvin. I have given this plant the name *P. inquilina*, because it has sprung up in a foreign country, and because it is difficult to find suitable specific names in so large a genus. *W. Botting Hemsley.*

VARIEGATED HOP.

MR. F. ROEMER, of Quedlinburg, sends us leaves of the Japanese Hop, *Humulus japonicus*, beautifully blotched and variegated with silvery-white. So

THE DOUBLE-FLOWERED TUBEROUS BEGONIA.

I REMARKED at p. 366 in the previous volume of the *Gardeners' Chronicle* that the form of the double-flowered Begonias was open to improvement, my comments thereon being founded upon what I had seen at the exhibitions in London during the past season, and especially the varieties exhibited at the special Begonia exhibition and conference held at Chiswick in August last. I stated that both the firms of Messrs. John Laing & Sons and Messrs. Henry Cannell & Sons had been successful in obtaining the right type of double flower, which in

should be able to build up something else on the ruin he has made. No one knows better what a Begonia or other florist's flower ought to be than Mr. John Laing, the senior partner in the firm of Messrs. Laing & Sons. He had read my remarks in the *Gardeners' Chronicle*, and forthwith sent a boxful of most exquisitely beautiful Begonia flowers. They are perfectly double, and not one of them with anything approaching to even a double centre. I have no hesitation in saying that they are the furthest advance yet made in the production of a double Begonia. The flowers were not large, but they are quite big enough; surely it is a grave error to go in the direction of mere size in a garden flower



FIG. 69.—VARIEGATED HOP: HARDY CLIMBING PLANT.

attractive were the leaves, that we placed one of them in the hands of our artist, who has given a faithful representation at fig. 69. Since then Mr. Roemer has sent us a photograph of the plant clothing a tall pole, and forming a column of densely-packed vigorous foliage, which shows that it is an admirable decorative plant as hardy as the common Hop, and well suited for covering fences, rustic arches, and the like. Mr. Roemer tells us that about 80 per cent. come true from seed.

form should as nearly as possible resemble the double red *Camellia imbricata*, or the double white. The old varieties with several centres should become things of the past, and the flowers of the future must be upon the lines of the old florists. It is easy enough to make fun of our florist-fathers, and to put down their standard of excellence as arbitrary, and the form of the flowers as formal, artificial, and inartistic. Those who do this should find something else to put in their place. He who pulls down

The "6-inch" Begonias got up by square and rule may well be allowed to pass into the limbo of forgetfulness. The largest of the flowers sent by Mr. Laing were 4 inches in diameter, which would give a circumference of over a foot; the smallest were 2½ inches across, the greater number being about 3 inches. There were no names attached to any of them; they were sent merely to show the general quality of the flowers, and the colour leaves nothing to be desired. There were rosy-red flowers, orange-

red, rosy-blush, clear yellow, bright rose, scarlet white, and one a lovely rich salmon colour. If I may be allowed to refer to the Begonia Conference in this place, held at Chiswick, August 23, it would be to the effect that, so far as the competition amongst gardeners and amateurs is concerned, it was something like a failure. Besides the prizes offered by the Royal Horticultural Society, the Turner trustees offered two valuable silver cups, one for double-flowered Begonias, and a similar one for single-flowered varieties. The result being one exhibit only in the class for double-flowered varieties, and none at all in the class for those with single flowers. The council have for two seasons offered numerous Silver-gilt, Silver, and Bronze Medals, besides money prizes to be competed for by amateurs, and the response has been very unsatisfactory. Few exhibitors have come forward to compete for the prizes, and the productions have generally been very inferior. Amateurs evidently do not appreciate the work of the society in this direction, or it may be that sufficient publicity has not been given to the fact that these prizes are offered during the season. *J. Douglas.*

VALONEA.

A WORD OF WARNING.

"A FORMIDABLE danger threatens the production of Valonea in this part of Asiatic Turkey. Some twenty years ago the Valonea Oaks in the neighbourhood of Koumkalé, near the western mouth of the Hellespont, were invaded by swarms of caterpillars, which ate off the leaves in the early spring, depriving the branches and fruit of the shade necessary to their vitality during the hot and rainless months of summer. For many years the pest was confined to the small and isolated groves in which it originated. But, during the last four years, it has extended its ravages annually, and now it is prevalent in all the Valonea groves of the plains watered by the Scamander, as well as in those belonging to Gheikli on the south, and Renkeui on the north.

The injury done to trees is serious, and has already considerably diminished the yield of Valonea in the infested region. In the first, second, and third year of the visitation, the trees continue to bear fruit, though in reduced quantity and shrunken in size. After the third year, bereft persistently of their foliage and with weakened vitality, they cease to bear, and in the course of a few more summers succumb to the annual infliction and die.

No organised measures for the extermination of this destructive invader has yet been set on foot. Here and there owners of Valonea groves have been in the habit of clearing their trees of the spores [eggs] of the butterfly. This is done in the autumn or early winter, and, where practised, has been found fairly efficacious. But the few energetic proprietors who wage war against the foe are sadly handicapped by the immovable apathy of their neighbours, who, shrinking from the impiety of resisting what they deem to be a visitation of Providence, will not stir a finger to rid themselves of the pest. The caterpillars bred on the trees that have been left uncleansed of the spores. After denuding their native trees, they crawl off to the trees of the man who has been at the trouble and expense of clearing them of spores, and make havoc of them also.

The evil, unless soon eradicated, will spread to all the Valonea-yielding provinces of Asia Minor, and seriously diminish one of the staple products of the Turkish soil. The danger to the prosperity of the population thus threatened is sufficiently alarming to call for the active intervention of the State. What is required, is an organised plan of campaign, such as is adopted in the case of an invasion of locusts. The extermination of the caterpillar could be, however, much easier than is that of the locust. The spores [eggs] deposited by the parent moth are attached, in a soft, friable envelope, to the trunk and lower branches of the trees, chiefly on the south side of the trunk and the underpart of the branches, where they find shelter from the frosts and rains of winter.

They can be easily detached with the finger, and that is all that is necessary to insure their destruction. But the work must be done not later than December, so that the detached spores may undergo a thorough and protracted soaking and freezing.

Every proprietor of Valonea Oaks should be compelled, under penalty of a severe fine, to get his trees cleansed by a given date—say December 15 to 27.

By the adoption of some such plan the pest might speedily be made to disappear, and now is the time for the Department of Agriculture to look into this serious matter.—F. R. J. CALVERT, Thymbra, September 12." From the "Levant Herald."

DELROW, ALDENHAM, NEAR WATFORD.

THE property of John Larkin, Esq., with its fine house (the older portion of which was built in 1669), surrounded by some hundred or so acres, bears evidence in its gardens and grounds that the love of gardening dates back to its earliest habitation; as witness the gigantic Wych Elms, the noble Cedar of Lebanon, Beeches, and other trees. The plantings of more recent date still carry us back many years, for it must have taken a long period of time for the fine Conifers to have attained the size they now exhibit. Among them are *Sequoia gigantea* some 40 feet in height, some very old *Libocedrus decurrens*, the beautiful blue-tinted *Abies pungens* about 20 feet high, and other fine species, which must have been rare indeed at the time of planting. Situate as it is on high ground, and in a well-wooded district, devoted principally to agriculture, Delrow is a model homestead, and its garden a very interesting one.

Near the house are some pretty and bright borders and beds of flowers, and passing under the stately trees whose high trunks and various shapes are beautiful objects, we come to a pretty dell, one of a row of three, which might possibly have suggested the name of the place in times gone by, and we pass up the fine shady walk, bounded on one side by a thick *Thuia* hedge, and which is pleasant in summer and a sheltered retreat in winter. On one side is a part of the garden, which was probably planted as the beginning of a Pinetum, for all the specimens—many of them very large and handsome—are Conifers; and this part of the gardens has a distinct character of its own, being shut in by a belt of tall Elms. For the *Araucaria imbricata*, the Junipers, and a few others, the situation may be rather too shady; but the Pines, and indeed, most of the species have thriven well, and emit a most delightful odour, which renders this nook a specially attractive spot. Farther on is another garden in a nook with circular Rose-bed in the centre, surrounded by beds of Carnations, Stocks, and other sweet-smelling flowers, while the borders are of mixed perennials. And in various ways, which are all the more pleasing, for that the conventional customs are not followed, but rather that the ideas of the owner and his wife should be wrought out, are pretty nooks and garden scenes devised.

THE PLANT-HOUSES

are devoted chiefly to Orchids, and in the old block the borders outside the houses are pretty with hardy flowers. The first, a span *Odontoglossum*-house, is filled for the greater part with healthy specimens of *O. Alexandræ*, of which a few good forms are in bloom. A few *Masdevallia* also are in flower, also the pretty *Promenæa xanthina*, and other species, and all are in a thriving condition. Specially noteworthy is the vigour of the various plants of the *Oncidium crispum*, *O. prætectum*, *O. Forbesii*, *O. Marshallianum*, and others of that section, of which the beautiful *Oncidium Larkinianum*, which was awarded a First-class Certificate at the Royal Horticultural Society, is one of the most beautiful. This section of *Oncidium* is sometimes killed wholesale by being grown in heat, but here in a cool airy house, the various species of which it is composed, thrive; and the same remarks apply to *Oncidium varicosum*, which here flowers profusely and without the strength of the plants being

diminished thereby. The centre bed of the house is filled with ornamental plants with *Cologynë cristata*, *Cypripedium*, &c., intermingled. The intermediate-house has some fine *Cattleyas*, many, even large specimens, being suspended from the roof, and evidently like the treatment. Some of the "old autumn-flowering *labiata*" have three sheaths with spikes showing up, and they will be handsome objects soon; the plants of *C. Warscewiczii*, too, and the other species are in fine health. A very handsome *Lælia pumila præstans*, *Cypripedium* × *T. B. Haywood*, *C. Schlimii* and *C. S. album*, the former with seven spikes of flowers, which never seem to fail, for as one goes off another comes on; and other things are in bloom. Continuing the range are two vineries, which are also used for resting *Dendrobiums*, &c. Passing by the covered way clad with *Roses*, *Clematis*, *Honeysuckles*, &c., we get to the fine old kitchen garden (which also encloses the fruit houses), and in which the new block of Orchid-houses has been begun, a commodious span-roofed *Odontoglossum*-house, and a warm house, having already been nearly completed by Messrs. J. Weeks & Co., of Chelsea.

Mr. Larkin is truly fond of his garden, and progress is being continually made in it, Orchids especially being favourites.

THE GENUS GALEANDRA.

SEVERAL times recently I have had occasion to look up the cultivated species of this interesting little genus, and on the last one I made the discovery that the plant so long known in gardens as *Galeandra Baueri* is not Lindley's plant of that name, and that the early history of the genus is in some deal of confusion. It may, therefore, be of interest to place my notes on record, especially as several of the cultivated species are rather difficult to discriminate satisfactorily.

Galeandra Baueri is the original species of the genus, which was described about 1830, from a dried specimen collected by Martin in French Guiana. The original specimen is preserved in Dr. Lindley's Herbarium. Soon afterwards a plant was figured under the same name by Mr. Bateman in his *Orchidaceæ of Mexico and Guatemala*, t. 19, which flowered in the collection of Mr. Barker, and which was obtained by that gentleman's collector, Rosas, in 1838, in the neighbourhood of Oaxaca in Mexico. Mr. Bateman points out that this is 1000 miles away from where *G. Baueri* was obtained, but does not appear to have noticed that it was quite a different species; yet such is indeed the case. The original *G. Baueri* has a slender fusiform pseudobulb, and a pale-coloured lip, while *G. Batemanii* has a short ovoid pseudobulb, and a dull purple lip. It should also be pointed out that part of another plant has in some way crept into Mr. Bateman's figure (and also that of Puydt, which is copied from it). Each of the new growths is represented as arising from a stout fusiform old pseudobulb, quite different from the normal ones of this species, and it is quite evident that these old pseudobulbs have crept into the drawing by some mistake. The same plant was also correctly figured in the *Botanical Register* in 1840. Thus, the name became transferred to the Mexican plant, while the Guiana one, not being in cultivation, was forgotten. So much so was this the case, that when Messrs. Loddiges flowered a plant which they had obtained from French Guiana in 1840, it was described by Lindley in 1844 as a new species, under the name of *G. cristata*, yet I cannot distinguish it from the original *G. Baueri*, and Lindley left a note in his *Herbarium*, dated October, 1860, that "*G. Baueri* is certainly the same as *cristata*." Again, in 1853, a plant which flowered at Syon House, was figured in the *Botanical Magazine*; but, in order to distinguish it from the purple-flowered form, it was called *G. Baueri* variety "*floribus luteis*." The habitat is not recorded, but the plant appears to be identical with the original *G. Baueri*, and quite different from the Mexican plant, to which the name had been erroneously transferred. It is remarkable how long

an error of this kind will sometimes remain undetected, but where there can be no doubt about the matter, as in the present instance, the only possible course is to restore the name to the original species. The Mexican plant, therefore, requires a new name, and I propose to call it *G. Batemanii*, which is highly appropriate to a plant from this particular region, which Mr. Bateman, who is happily still amongst us, made his own special study upwards of half a century ago.

G. Devoniana, the largest and handsomest species of the genus, first flowered with Messrs. Lodiges, of Hackney, in May, 1840. It was introduced by Schomburgk from the Rio Negro, a tributary of the Amazon, where it grows both on the stems of

was introduced by Messrs. Veitch, and flowered at about the same date. It has a tuft of hairs on the disc of the lip.

G. minax was described in 1874, from the collection of A. Sillem, Esq., of Sydenham. It is closely allied to *G. dives*. Its habitat is not recorded.

G. nivalis (fig. 70) is another closely-allied plant of unknown origin, which flowered in the collection of Sir Trevor Lawrence, in 1882.

G. Harveyana, which was described in 1883, from the collection of E. Harvey, Esq., of Aigburth, near Liverpool, is allied to *G. Stangeana*, and like it has a tuft of hairs on the disc of the lip. Its native country is not stated.

G. Descagnolleana is a Brazilian species, described

Mex. et Guat., t. 19 (not of Lindl.); *Bot. Reg.*, xxvi., t. 49; *Pact. Mag. Bot.*, xiv., p. 49, cum ic.; *Warn. & Will., Orch. Alb.*, vi., t. 267; *Puydt, Orch.*, pp. 196, 197, fig. 193.—Mexico and Central America.

G. Baueri, Batem. = *G. Batemanii*.

3. *G. Baueri*, Lindl. in *Bauer Ill. Orch.*, Gen., t. 8; Lindl. *Gen. & Sp. Orch.*, p. 187; *Bot. Mag.*, t. 4701 (var. *floribus luteis*). *G. cristata*, Lindl. *Bot. Reg.*, xxx., *Misc.* p. 72.—Guiana.

G. cristata, Lindl. = *G. Baueri*.

4. *G. Descagnolleana*, Rchb.f. in *Ill. Hort.*, xxxiv. (1887), p. 63, t. 22.—Amazon district.

5. *G. Devoniana*, Schomb. ex Lindl. *Sert.*, t. 37; *Pact. Mag. Bot.*, viii., p. 145, cum ic.; *Bot. Mag.*, t. 4610; *Maud. Bot.*, v., t. 231; *Lem. Jard. Fleur.*,



FIG. 70.—GALEANDRA NIVALIS: SEGMENTS, OLIVE BROWN; LIP WHITE, WITH A PURPLE BLOTCH.

Mauritia aculeata and on the ground. The discoverer speaks highly of its beauty, and records clumps of it from 5 to 6 feet high and 3 to 4 in diameter. It was also met with by Spruce and Wallace in the same region, and by Bungeroth in Venezuela, where it is said to grow on *Leopoldinia pulchra*.

G. dives is a native of New Granada, and was described in 1854. It is very near to *G. Baueri*; indeed, Reichenbach afterwards united *G. cristata* with it, which would make them identical. *G. dives*, however, has somewhat smaller flowers, and its identity with the Guiana plant seems doubtful.

G. Stangeana is a species from the Amazon district, which flowered in Consul Schiller's celebrated collection in 1856. I believe it is not now in cultivation.

G. barbata is another Amazonian species, which

in 1887, which was discovered by Mr. Edward Rand, of Pará, and flowered with Messrs. Linden, of Brussels. It is rather near to *G. nivalis*.

G. flaveola appeared about the same time with Messrs. Linden, and is a Venezuelan species introduced by Bungeroth.

Several others have been described, more especially from Brazil, but they are not known in cultivation, and several of them I have not seen. In all probability some of them will prove not to be distinct when a better series of specimens is known.

The following is a list of the cultivated species, with references to descriptions and figures:—

1. *Galeandra barbata*, Lem. in *Ill. Hort.*, iii. (1856), *Misc.*, pp. 86, 89; *Id.*, vii., t. 248.—Amazon district.

2. *G. Batemanii*, Rolfe; *G. Baueri*, Batem. *Orch.*

ii., p. 195; *Ill. Hort.*, xxi., p. 110, t. 176; *Warn. Sel. Orch.*, ser. i., t. 37; *Burnett Pl. Util.*, ii., t. 63A; *Lindenia*, ii., p. 67, t. 80 (var. *Delphina*).—Amazon district and Venezuela.

6. *G. dives*, Rchb.f. et Warscew. in *Bonplandia*, ii. (1854), p. 98; *Id.*, iv., p. 323.—New Granada.

7. *G. flaveola*, Rchb.f. in *Gard. Chron.*, 1887, pt. i., p. 512; *Lindenia*, ii., p. 87, t. 90.—Venezuela.

8. *G. Harveyana*, Rchb.f. in *Gard. Chron.*, 1883, pt. ii., p. 716.—Origin unrecorded.

9. *G. minax*, Rchb.f. in *Gard. Chron.*, 1874, pt. i., p. 786.—Origin unrecorded.

10. *G. nivalis*, Hort., *Gard. Chron.*, 1882, pt. i., pp. 536, 537, fig. 85 [repeated at fig. 70]; *Ill. Hort.*, xxxii., p. 63, t. 555.—Origin unrecorded.

11. *G. Stangeana*, Rchb.f. in *Bonplandia*, iv. p. 323.—Amazon district. *R. A. Rolfe*.

NURSERY NOTES.

MESSRS. J. CHEAL & SONS'.

ONE of the most promising of the more modern nursery firms is that owned and conducted by Messrs. J. Cheal & Sons, Lowfield, Crawley, Sussex. The extent of land under cultivation as a nursery is at the present time about 80 acres, and most of this considerable area is planted with saleable stock, consisting of fruit trees, ornamental trees and shrubs, and single Dahlias, the latter a specialty of the firm, which is being much worked up at the present time.

The houses, not many in number, are clustered round the nursery offices, and have been erected at odd times during the last twenty years, as occasion for them arose. One of these houses, of span-roof form, contains a collection of Pear trees, treated as single cordons, and trained to wires fixed about 2½ feet apart, running from wall-plate to apex. Some of these are continental varieties on trial, and most of the trees were carrying good numbers of fine unblemished fruits. We noted a new variety, Duchess de Mouchy, an excellent late Pear, lasting in good condition till the month of March; Charles Cogne, a fairly good late variety, and valuable in that way; Rivers' Princess, resembling a Louise Bonne of Jersey, from which it originated—it is very heavy for its size. Belle William is a new French Pear, large, and oblong—a striking fruit; the much-belauded Kieffer Pear, which is thought little of here, either when grown, as are these, under glass, or in the open air. Other varieties remarked were Grosse Callebasse, Durondeau, Pitmaston Duchess, Soldat Laboureur, Beurré Fulvie, B. Alexander Lucas (an excellent Pear), Conseiller de la Cour, Glout Moreceau, Doyenné Boussoch, Belle de Bruxelles, General Todleben, Chaumontelle, King Edward (a fine stewer), Jersey Gratioli, Beurré Superfin, and B. Sterckmann. This Pear-house gives an impression of a similar one being of great utility in exposed gardens, or those situated in cold, unkindly parts of the country. Most of the trees are planted out, and although as such the crop is larger than what would be afforded by pot-trees, the latter would be more generally preferred, as their removal when at rest would allow of the house being utilised in other ways in the late autumn and winter.

Chrysanthemums occupied a span-house—good thrifty stuff. The propagation of Pelargoniums was proceeding in another, and mixed decorative plants filled a third. An excellent houseful of planting and fruiting Vines was observed, which were awaiting their removal to the south side of a tall Beech hedge to ripen their canes.

The greatest floral novelty of the nursery is a dwarf variety of single-flowered Dahlia, whose height, flower-stalks, blooms, and all, is about 12 inches. These are most floriferous plants, and have, in most instances, what may be termed a spreading habit, with foliage commensurate with their stature.

Unfortunately, the first sharp frost of the season had greatly disfigured them, and we could not distinguish the colours, but were assured that in every point they were the equals, as regarded brilliancy of colour, of their taller sisters. Of course, a rigid course of selection will improve form of flower and habit of growth. In dwarfness there is nothing further to look for, and they may become in time the rivals of the zonal Pelargonium, tuberous-rooted Begonias and other plants used as bedders.

The Pear-arcade, sometimes a picture of fruitfulness, was this season without a fruit; and the fence of oblique cordons was nearly as bare of fruits.

Much of the land is divided into parallelograms, with great hedges of Beech, Mirobalana Plum, or Hornbeam, which afford abundant shelter from, without actually stopping the wind. A large number of bush Apples in a bearing state were remarked, these furnishing much of the fine fruit that the firm sends to various exhibitions, and also samples for the guidance of customers. Not every

variety was carrying a crop; some, indeed, were bare, but the number of these last were few, and sufficient fruit was hanging on the bushes generally to show the characteristics of the varieties. We observed Colonel Vaughan, a good cropper, like Worcester Pearmain, but smaller, and less good in flavour—a fine costermonger's variety; Ecklinville Seedling, a variety that crops well and regularly—the fruits were very fine; Emperor Alexander, good as a bush; Golden Spire, early and good, was breaking down under the weight of its crop; Frogmore Prolific, a capital large fruit, and a good thrifty grower; Cospatrick is another excellent culinary Apple that was bearing well; Wealthy is a showy American variety, of large size; Scarlet Nonpareil was fruiting well, as were Hornead Pearmain, Lane's Prince Albert, Potts' Seedling, Stirling Castle, Lady Henniker, and Sturmer Pippin.

In other quarters, Schoolmaster and the following were fruiting well on little trees two years from the bud, viz., Queen, Peasgood's Nonsuch, splendidly on Paradise; Newton Wonder, Wellington, Blenheim Orange Pippin, Tower of Glamis, full of fine fruit; Swedish Reinette, a variety that crops always well, fruit brightly coloured, with a fine grey bloom upon it; Bramley's Seedling, Cox's Orange Pippin, King of Pippins, and Bismarck, the coming Apple. Of this last there are breaks full of maiden trees—a capital sample; it is naturally short-jointed, which means, barring accidents, heavy crops of fruit.

Crabs of many varieties are grown, and largely the Dartmouth, a very showy crab, purplish-crimson, with a beautiful Plum-like bloom on it; and Transcendent, a glowing American Crab. Next in point of beauty, and exceeding them in numbers, were the different species of Crataegus.

Pears filled several large breaks, the stock being of various ages, and although all appeared to be clean short-jointed vigorous plants, we looked in vain for fruits. In this part the spring frost was very severe, and Pear blossoms succumbed universally in the open land.

Plums, Cherries, Peaches, and all kinds of fruit are extensively and well grown. In the fruit-room, specimens of the following were noted: Worcester Pearmain, Duchess of Oldenburg, a good early Apple, bearing regularly and heavily on stiff loams; The Queen, Yorkshire Beauty, an Apple with a multitude of synonyms—it is a regular and heavy bearer, and the fruits keep till January; Professor, an early heavy cropping culinary Apple; Evagil, Golden Spire, Loddington, Alfriston, and Cellini, an Apple not to be depended upon on heavy land.

Ornamental trees, chiefly Conifers, and evergreen shrubs in large variety, form a large portion of the nursery stock, and Messrs. Cheal, being nearly always engaged in landscape work, and the renovation of gardens, make heavy demands on this. We were therefore not surprised to find much that was worthy of the notice of the planter for effect; and regular transplantation being the rule here, the trees and shrubs were neat, symmetrical, compact, just such as one would gladly choose for planting, and which, with ordinary care would be sure to succeed. Abies Lowiana, A. cephalonica, A. Nordmanniana, A. Pinsapo, A. Webbiana, A. amabilis, A. magnifica, A. grandis, and many others, were all to be found here. Pinus is, perhaps, less well represented, but neat plants of P. cembra, P. inops, P. insignis, P. Lambertiana, P. pinaster, P. strobus, P. pinea, P. ponderosa, and other species, were remarked. Retinosporas were found in large numbers, and the same remark applies to Abies, Thuia, Taxus, and Cupressus. The nursery is rich in fine Hollies in variety; and in deciduous subjects of the best sizes for planting.

Roses occupy a considerable amount of land, and grow with a good deal of vigour in the rather heavy loam.

ROUND LIVERPOOL.

(Continued from p. 412.)

ALLEERTON BEECHES, NEAR LIVERPOOL.—The property of Henry Tate, jun., Esq., has at its entrance a stately row of Beeches of great beauty

and huge dimensions, one of the largest measuring nearly 16 feet round the trunk. Age begins to tell on one or two of them, but every care is taken to preserve the lives of the aged giants. Around the pretty dwelling-house, clad at the lower part with climbers, are some neat flower arrangements, which are now, of course, showing the season we have arrived at. The hardy plant garden, with its natural rockery and grotto, over which spread large tufts of the different Saxifrages and other rock plants, shows the advance of winter the least, there being still a good display of flowers on the Phloxes, Helianthemums, Anemone japonica, and other late-flowering plants; but the falling leaf and the crippled bud tell plainly that the season of the outdoor flower is over. But at Allerton Beeches, provision is made for keeping up a supply of flowers in winter, for a house of Tea Roses, a goodly array of Chrysanthemums, some fine specimens of Eucharis, a fine lot of Poinsettias, and other things, show that Mr. John Edwards, the gardener there, is not unmindful of the dull season to be tidied over. But the Orchids are the favourites, both with Mr. Tate and his gardener, and in the new houses built by Mr. John Pitkethley, of Garston, they thrive admirably. The houses themselves are of Pitch Pine, the upper staging and the diagonal trellis-work flooring being of the same material. Both in the manner of giving ventilation, of raising the open staging higher above the close moisture-giving stage in winter, and in the manner of damping down the houses by merely turning a tap, there are new and salutary improvements, which have been, no doubt, of great service in the culture of the plants, and also in raising the new hybrids, which are taken such an interest in by Mr. Edwards, who proudly showed his various young broods. Among them we noted young plants, the result of crossing Cattleya aurea and Lælia crispa, C. gigas Sanderiana × Lælia grandis tenebrosa, C. gigas × C. Mossiae, C. Mossiae × Lælia xanthina, Cypripedium Rothschildianum × bellatulum, and many other strange crosses, either in plants or yet in the seed capsule.

Of the fine specimens of established Orchids, the entrance-lobby gives a good example of healthy plants, well set with spikes. Among them the compact plants of white and coloured Lælia anceps are remarkable for the number of vigorous spikes they are sending up. The plants are grown in pots, but are kept high above the rim, and with but little peat above them. Odontoglossum grande, too, is well in bloom, the spikes very stout, and one of them bearing eight flowers. A pretty variety of Vanda cœrulea, also, is here, with white sepals and petals, edged and tipped with blue, and with a violet-coloured lip; and Lælia pumila Dayana and other Orchids in flower are arranged with Palms, &c.

In one division are splendidly-grown Lælias and Cattleyas, Miltonia vexillaria, and Cypripediums, many of them home-raised. In another division is intermediate-house Orchids, in fine condition. Suspended at the end are some pans of Pleione maculata, which are far in advance of any we remember having seen. The largest bulbs are 6 inches in circumference, and the leaves as large as those usually seen on Calanthe vestita. Mr. Edwards says he never dries these off. Formerly he used to do so, with what may be called ordinary success; but seeing that they commenced the new growth as soon as the old was completed, he discontinued the drying off, and the result has been extraordinary, both as to growths and flowers.

Passing through the Vineries to a warm-house, in which the centre bed is furnished with handsome Crotons, &c., we find Vanda Sanderiana and Dendrobium Phalaenopsis Schroderianum good, a fine and vigorous lot of Phalaenopsis, and a remarkable collection of Cypripediums, excellently well-grown; some C. Rothschildianum having their leaves spreading over 3 feet; a plant of C. bellatulum, 2 feet across, and without a blemish, and other rare species equally fine. It is a pleasure to look at such plants, even when not in bloom. Mr. Edwards works hard among them, and they repay his care.

WOOLTON WOOD.

The fine gardens of Holbrook Gaskell, Esq., and especially the collection of Orchids, have always been of great interest, and it is evident that Mr. Gaskell, does not mean to let the gardens go down. The houses have all been thoroughly overhauled, and the plants re-arranged, and it may be said that the collection of Orchids never looked better than at the present time. One fine feature of the collection in years gone by, however, is missing, viz., the magnificent plants of *Phalænopsis*, which used to luxuriate in the still moist corner of an inner warm-house, whose entrance was through another house. The partition was removed before Mr. Todd's (the present Gardener's) time; the *Phalænopsis* dwindled and the place thereof knoweth them no more. But under the same roof may now be found a splendid selection of *Cattleyas* and *Lælias*. *Cattleya Gaskelliana* being a favourite, is grown in quantity; the plants of it began to bloom on July 1, and have continued until now, and will still continue to flower, some or other of them. There is great variety of colour in this pretty *Cattleya*, and at Woolton is one of the best of the white forms, but a still further merit, and one which makes even what is called a poor variety acceptable, is its fragrance. The autumn-flowering labiatae too, are much grown here, and are about to flower profusely, for it is as free as the *C. Gaskelliana*; *C. Bowringiana* is represented by several large specimens sending up spikes of great strength, with from twelve to eighteen flowers on each; two forms of *Lælia elegans Schilleriana* are in bloom, the one a very handsome form, and fine specimens of *Lælia purpurata*, &c., are in evidence. In this house is a novel and satisfactory plan of growing *Ouvirandra fenestralis* (Lattice plant) exemplified by Mr. Todd. The plant, which is in a large pot, has its head brought through an opening in a framework covered with cream-coloured tiles, such as are sometimes used for flooring. The pot is fastened to the framework, and the whole floated on cork fastened to the bottom of the frame. There are about one hundred leaves on the plant, little and big, and the advantages of Mr. Todd's plan is, that it suits the plant, and the foliage looks to much better advantage when seen just below the surface of the water, and spread over the clean cream-coloured tiles.

The Masdevallia-house is filled with large specimens in perfect health, and here the pretty *Masdevallia Gaskelliana*, with its score or so of handsome flowers, is one of the most attractive at present, although the *M. Harryana* varieties, which each bears fifty or more flowers in their season, are grand objects. Those of the *M. chimæra* section are grown in another cool-house, where they thrive marvellously, many of the *M. bella* and *M. chimæra* being 2 feet to 2 feet 6 inches across; they are grown in baskets, and suspended from the roof. Beneath them are *Odontoglossum crispum*, &c.

In the large stove, with ornamental plants on the centre bed, *Dendrobium Phalænopsis Schroderianum* is thriving well, and is found to be very free to grow and flower; *Cattleya Dowiana* and *C. D. aurea* are good. In another house suspended overhead are some grand masses of white and coloured *Lælia anceps*, which are here grown on rafts or shallow baskets, and they are very fine, and sending up spikes freely. All growers round Liverpool agree that these plants do not want much "stuff" about them, and consequently most of them grow them in shallow baskets; those who do not adopt this plan use small pots, and keep the plants high above the rims. Another house is nearly filled with large healthy masses of *Cœlogyne cristata*. With them are several very fine *Dendrobium Falconeri*. They are grown at the warmer end of the house, and are syringed frequently. In general where we find this plant really fine and safe, it is placed in the houses somewhere where it can feel the influence of the outer air. The house where the *Aërides* and *Vandas* are grown, has also some fine *Cypripediums*, the plants of *C. grande*, *C. Schroderæ*, and others of the green-leaved section, being of gigantic proportions and great vigour;

C. Spicerianum, too, and all the other species are well grown. Here *Peristeria elata* has had five spikes; and a grand mass of *Miltonia Moreliana* on a Tree-Fern stem has fifty flowers. Although imported as one mass, there are two varieties, the upper portion having much darker flowers than the lower.

Suspended over the doorway in one of the intermediate-houses is a plant of the curious and beautiful *Cirrhopetalum ornatisimum*, with its rayed heads of white and crimson flowers, three of the segments curiously decorated with crimson fringe. The *Cirrhopetalum* and *Bulbophyllum* have beauties all their own, which never fail to attract. How is it we see them so seldom in collections? Passing through the vineries, in which are good crops of Grapes, black and white, and in some of which *Dendrobiums* are resting, we go through the Peach and other plant-houses, and note in one of them that the back wall is fitted with wall-tiles planted with *Adiantum cuneatum*. This plan Mr. Todd strongly recommends where Ferns are wanted for cutting, as a supply is got from an otherwise useless part of the house, and the plants in pots consequently saved.

The rock-house, with its tall Tree Ferns and undergrowth of *Todeas* and other Filmy Ferns, and the warm case of tender Filmies, are as pretty as ever. The rockery outdoors is well furnished, and in passing a glimpse is obtained of a good lot of *Chrysanthemums*, which prove that Mr. Todd has not quite escaped the *Chrysanthemum mania*, which is just now raging with great violence in many of the gardens round Liverpool.

THE ROSARY.

A PAIR OF CHOICE NOISSETTE ROSES FOR CHRISTMASTIDE.

It may be fancy, but I think it fact, that we enjoy soft yellow or primrose colours the most towards the close of the year. Hence, such charming Noisette Roses as *Celine Forestier* and *Triomphe de Rennes* seem never half so welcome as from September to November. The colours themselves seem to melt into softer shade with the shortening days. As the golden grain is gathered in from the fields, and the sere and yellow leaves of Limes, Sycamores, and Chestnuts begin to fall and the fluffy rich primrose harvest of blossom of the evening Primrose (*Oenothera macrocarpa*), stiffen into huge crops of seeds for future seasons, these and a few other Roses, mellow softer, richer beauty. *Triomphe de Rennes* is probably the most tender of all the Noisettes, not even excepting the very oldest and best of them all, *Lamarque*, so pearly white, and so delicately fragrant. But of these last, no phrases truly describe the odour of *Lamarque's* delicious perfume, or the agreeable scent of *Triomphe de Rennes*.

The flowers have also a perfection of form in bud, and an exquisite finish that few Roses can equal, perhaps none excel. The colour, too—a mustard or canary-yellow—is very rare among Roses. It blooms differently, and hardly so freely as *Celine Forestier*; but one perfect bloom or half-opened bud of *Triomphe de Rennes* is worth two or three of *Celine Forestier*, lovely and most useful and welcome as this latter always is. Nevertheless, it is doubtful if *Triomphe de Rennes* is half as much grown as *Celine*; the chief reason for this is its tenderness. The fact is, both are tender by nature; as most of the Noisette Roses are, they become more tender still through their fostered habits of very late blooming in the open air. Neither are much, if any, more tender than the *Maréchal Niel*, blooming side by side with them under identical conditions of site and soil. *Triomphe de Rennes*, however, may be slightly more tender. But surely all these delicate and choice—I do not include the *Maréchal* in the first adjective—Noisette Roses are worthy of the warmest bit of wall we can give them at any season, and most of all to link these last showers of golden blossom with the first-fruits of the snow on the threshold of winter.

I prefer these and other Noisette 'Roses on their own roots, because of their tenderness; and under such conditions, though they may often be cut down through cold, they are seldom or never destroyed. The comparative hardiness of roots and root-stocks must be seen through a series of years to be believed in. With moderately rich soil on a warm wall, and under wise—that is, a sort of wait upon Nature, and act accordingly—culture, these Roses will live and bloom for years through many months in the year, fading in a sort of climax of beauty at the end, which must please most eyes and win most hearts among rosarians. D. T. F.

ROSE SOUVENIR DE LA MALMAISON.

How seldom it is now one meets with this Rose, and yet it is one of the best and most lovely anyone can grow, for it is seldom during the summer and autumn months that it is out of flower; and at this season it has quite a wealth of bloom, the half-expanded buds being beautiful, as not only are they perfect in form, but they have the most delicate shading of flesh colour, and stand boldly up on stout stems. In habit, *Souvenir de la Malmaison* is strong and the plants grow freely, forming quite large bushes if not hard pruned, which they should not be, but only thinned out and just shortened back; and when so treated, and left pretty much to themselves, they blossom freely, and make a very fine show. For beds or masses grown together, they are grand, and a striking effect is produced by planting among them some *Gladiolus breuchleyensis*, which, with their tall spikes of scarlet flowers, contrast well with the pale-coloured Rose. Those who are so fortunate as to have *Souvenir de la Malmaison*, will find this a good time for propagating it, as it strikes freely from cuttings or slips, the latter being preferable on account of having a heel. This part should be trimmed off smoothly, and the slips then inserted in sharp sandy soil under a handlight or frame where they can be kept close and shaded till they root. J. Sheppard.

AUTUMN AND SPRING-PLANTING OF ROSES.

The full advantages of early autumn-planting cannot be sufficiently realised by gardeners, or we should find it much more frequently practised. After the plants are a little more than three parts ripened, the sooner they are planted the better will they stand the winter, and thrive the following season. When planted early, Roses make an abundance of new roots that serve the double purpose of making them semi-established, and also supplying the tops with sufficient sap to counteract the effects of drying winds and frost that so often work havoc among newly-planted Roses, more especially if the operation be done later than the early part of the month of November. I have frequently planted at the end of September or early in October, and never regretted doing so in a single instance. Of course, I do not advocate the lifting of plants until they are at least three parts ripe, and during some seasons this is quite a month later than another; nor would I plant Teas and Noisettes so early as the hybrid perpetuals when grown upon the Manetti stock. These latter have been ripe enough for transplanting ever since the middle of September. Only a few of the later-growing varieties are still retaining their foliage, while almost all of the Teas are in full leaf and growth. To move these last at the present time (October 1) would be wrong and injurious; but even these are often left much too long, and until they are completely at rest. If I could not transplant reasonably early in the autumn, I would much prefer to leave the operation until March, as I would rather my plants either get settled previous to winter, or else commence slight root-action as soon as put into fresh ground. Planting Roses in the dead of winter has never turned out so well as planting in the early autumn or early in spring. A. P.

ROSES IN POTS, AND PLANTED OUT.

A gentleman called upon me the other day, and expressed some surprise on finding that we had been gathering Roses daily up to the last week in September. He was fond of Roses, and complained

that he did not obtain them in the autumn. After some conversation upon some of the details of Rose-growing, I found that we differed on two important points: one was the desirability of transplanting Rose bushes, &c., every second or third year; the other, the selection of varieties. No one can obtain plenty of Roses late in the season from plants out-of-doors, unless the Tea-scented varieties are grown. Hybrid perpetuals do flower in the autumn, but not so freely as the Teas. A great deal also depends upon the method of culture adopted, for, however well the ground be prepared, or carefully the plants are planted, they will not continue to do well unless they are periodically lifted and replanted. Tea-scented Roses succeed admirably even in heavy wet soils if they are budded upon the seedling Briar, which is, I suppose, the best stock for Tea Roses on such soils. The Rose-bed should be raised about 1 foot above the level of the ground, the sides of the bed being banked up in some way; we turf ours over, and the soil being heavy, a good dressing of stable-manure taken from horses, which have stood on a peat-bed, suits the Roses admirably. One-year-old plants were put out, and they made excellent progress for three years; at the end of that time, the entire collection of plants were lifted and replanted in the same bed; but after trenching it to a depth of 2 feet, including the depth of a foot above ground, which had, since it was first made, sunk nearly 6 inches, the retrenching raising it to its original height by the addition of manure and some fresh loam, the loam being necessary in affording the Roses a strong fresh start. The lifting and transplanting should be done not later than the month of November, and when the work is finished, a mulch of dry stable manure in a rotted state should be spread on the surface and around the stems of the plants. This sort of mulch will be found good for all Roses, whether they have been replanted or not, for very severe frost will injure even the more hardy hybrid perpetual Roses if unprotected. The Tea-scented varieties will continue to flower until the frosts stop them; but near the sea, and sheltered from the east and north, blooms of these varieties can be gathered up to the end of the year. In inland places—the neighbourhood of London, for instance—the weather prevents this, cold rain either causing the flower-buds to decay or frost to destroy them.

It is at this period that an airy greenhouse comes in handy to prolong the bloom for a month or two. The Roses for late bloom may be planted out, but it is probably more convenient to grow them in pots, and they should for autumn flowering be rested, as it were, in summer, by being kept comparatively dry at the roots, something in the same way in which they are rested in the Riviera through heat and drought in summer. The Roses there lose their leaves in summer, the hybrid perpetuals first, and the Tea-scented varieties later. About the end of August, or early in September, they are pruned. When the rains come about the end of September, the Roses start into growth, and flower freely until the middle of January, and it is rather remarkable that the later the rains are in coming, the better are the Roses. By imitating the temperature of the Riviera in our glasshouses in November, December, and January, we may succeed in obtaining Roses in our glasshouses. The late Dr. Bennet, who carefully registered the temperature in his garden on the Genoese Riviera for fifteen years, found that the minimum for November was 49° 2', maximum, 60° 1'; December: minimum, 42° 2'; maximum, 55° 1'; January: minimum, 42° 8'; maximum, 53°. January is the coldest month, the temperature rising again in February. The temperatures we can easily have in our houses, but the difficulty comes in with our leaden skies and the fogs; the sun may scarcely be seen for a week, and when it does show itself, "it just blinks a wee and sinks again." All we can do is to place our plants near the glass roof of the house; the atmosphere should be kept well on the dry side; and there ought to be a free circulation of air. It is important that Roses should be kept free from insect-pests and mildew at all times; but in

winter it is well to see that there is no trace of any mildew or green-fly on any of the plants. The Roses should be planted in good loamy soil, and the pots should be well drained. For the Tea Roses, a rather light soil is best; about a third part of light fibrous peat should be added to the yellow loam, and crushed bones which compose the usual compost, and if some pounded charcoal be added, it will aid in keeping the soil porous. They should be afforded water enough to moisten the compost throughout, and should not be watered before the soil is well on the dry side. *J. Douglas.*

COLONIAL NOTES.

PEAS IN JAMAICA.

THE *Bulletin of the Botanical Department, Jamaica*, contains an elaborate table on the rate of growth, the time of flowering, and other particulars relating to Peas as grown in Jamaica. A general summary of the tabular matter is given as follows:—On comparing the above figures it will be seen that the varieties that have given the best results are Abundance, Duke of Albany, Champion of England, Carter's Dignity, British Queen, Carter's Supreme, Carter's Telegraph, and Carter's Telephone, the latter not a heavy cropper, but a fine flavoured Pea. Laxton's Alpha and Princess Royal produced the heaviest crops, but the Peas were not so finely flavoured as some of the other kinds. I might add that, with a very few exceptions, all the varieties named are very good; in making selections from the list, intending growers would do well to consult the column giving the heights of the various kinds, and give preference to those of medium height, say 3 to 5 feet. They do not require so much attention in the way of staking as the taller kinds, and are not so likely to be blown down by strong breezes.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

POINSETTIAS that are still growing in pits should now be removed into a warmer structure, for if kept in a low temperature too long they are liable to lose their bottom leaves, which will greatly disfigure the plants. In case a portion of them are required to bloom early, these should be placed at the warmest end of the stove, and at the same time keeping them well up to the glass, where they will quickly come into bloom. The most suitable place for the main stock is a disused Melon or Cucumber-house, where there is plenty of heat at command, and as these structures are generally low, it enables the grower to stage his plants well up to the glass, which is indispensable. Avoid overcrowding as much as possible, and assist them occasionally with clear manure water, which will tend very materially to increase the size of the bracts.

Euphorbia Jacquiniflora.—These plants will require similar treatment to the above, and when well grown form some of the most useful winter-flowering plants we have. As the days shorten, care must be taken to avoid giving too much water at the roots, as these plants are very impatient of such treatment.

Gesneras, if potted on as advised, will be found most useful later on. Keep them free from thrips, &c., by lightly fumigating the plants occasionally, and avoid syringing the plants overhead during any period of their growth, or the foliage will become disfigured. Grow them on a shelf near the glass, so as to encourage a sturdy growth.

Where *Eranthemum* and *Linum trigynum* have been grown in cool pits, they should now be removed to warmer quarters. The latter is very subject to red-spider, which necessitates extra precautions to keep the plants free from this pest.

The *Epiphyllums* are most useful plants for autumn and winter. A few of them may be placed into a warm intermediate house, where they will quickly show bloom.

Winter-flowering Begonias should receive attention. They will be found useful later on. When the pots become well filled with roots, assist them frequently with weak applications of manure water.

Remove *Thyracanthus rutilans* and also *Salvias* from the cool pits or frames into their winter quarters; also *Eupatorium repandum* and *E. Weinmannianum*. Grow the latter in a cool house, well up to the roof glass, where just sufficient heat is at command to keep out frost and damp. These plants will now require plenty of manure water, especially such as are growing in 5-inch pots, as by this time they will be one mass of roots.

Primulas should be given a light and airy position close to the glass, and when well rooted assist them with a little soot water and a pinch of Thomson's Vine and Plant Manure occasionally.

Bouvardias should be given a light position in an intermediate house. Plants which have been growing in pots during the summer will ere this have exhausted their food supply, and should be assisted with applications of weak manure water, or one of the well-tried fertilisers. Any which were planted out in prepared beds and lifted, should be kept in a cool pit, and shaded from bright sun until well established, before taking them inside.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

SAVING AND PROTECTING LATE VEGETABLES.—With the absence of sun, and the shorter days, preparation must be made for the supply of other than green vegetables, and much may be done through this month and part of the month of November to bridge over the period that intervenes before forced vegetables come in more generally. With this in view, pods of French Beans should be gathered whilst tender, and the stalk-end placed in water which has a bit of charcoal in it, changing the water occasionally. Thus treated, they remain for a longer time fit for use than many persons would suppose likely. Marrows, also, keep a considerable time if cut and stored in a cool place. Cardoons will need protection, or lifting with a ball of earth and placing in the cool root-stores, examining them occasionally, and cutting away decaying parts.

CAULIFLOWERS AND BROCCOLI will tide over a considerable period if they are gone over twice weekly, and those with heads the size of a cricket-ball removed intact to frames or outhouses, where they can be protected from frost and rain. Veitch's Protecting Broccoli is now coming in, and it will last till the winter kinds are ready for use. Where this early variety can have garden-frames for its preservation during the next few weeks, the produce will be better; and it is always best flavoured if the plants are lifted before they get of a large size. Remove all decayed foliage before putting them in the store or frames, and plunge the roots in a light moist soil, and admitting air as much as possible in fine weather.

SEAKALE.—Though it is still early for lifting, the crowns may be got ready for forcing by clearing away the decayed foliage and weeds, the exposure to sun and air maturing them for forcing. If very early Seakale is required, it is best to plant a quarter for this purpose in a warm part of the garden, so that the growth may thus be early, and therefore thoroughly matured early in the autumn. It is well to lift a week or ten days before it is required to be put in the forcing-house, an earlier start into growth being the consequence of doing this with less heat. The later forcing crowns should be similarly treated.

TOMATOS.—The plants on walls must now be protected from the chance of injury from frost, and ripening fruits placed on shelves in a cool fruit-house to fully ripen. Here they will keep good for a long time, if not exposed to damp. Shelter may be afforded the plants for a short time with bast mats if fruit is still swelling. Plants in pots for winter use should now be removed to an intermediate-house, airing them freely, and leaving the top ventilators open in mild weather. No time should now be lost in securing a crop by setting all the flowers which open, this being the fruit which will ripen in the winter. Plants raised for spring fruiting should be growing freely, and these, and the seedlings, may require to be shifted, but a large shift should not be given them; nor should the soil be rich, so that the

plants may grow sturdy. The temperature need not at night exceed 55° or by day 70°, and the plants should stand near the glass.

MUSHROOM BEDS, if prepared as advised, will now be coming into bearing, and the temperature should be kept at 50° to 55°, the flavour of Mushrooms being impaired by high temperatures, and the beds get worn out in a short space of time. More material may be got in readiness for succession beds; and the spawning of beds, when these are of a suitable degree of warmth, will demand attention. Never cover a bed with cold soil, but always warm it first. Outside beds will require protection from heavy rains.

THE ORCHID HOUSES.

By H. A. BURBERRY, *Orchid Grower, Highbury, Birmingham.*

NEWLY-IMPORTED ORCHIDS.—Cattleyas and Lælias imported in the autumn or winter should, on being received, be washed clean, potted, or basketed without undue delay, and gradually inured to light, moisture, and warmth, the latter being less than is required by established plants of the same species for some time to come. The conditions of the East India-house will be favourable to their quickly regaining the plumpness that was lost during their transit to this country. The East India-house is not usually recommended for Cattleyas, but it is better to run the risk of a new growth in mid-winter than to attempt to keep the plants dormant until spring; there may, of course, be exceptions to this rule, but I find, generally, that imported Orchids gradually and surely go from bad to worse, until such time as active growth sets in, after which time they surely but slowly recover their health.

PROTECTING THE HOUSES FROM COLD.—Fire-heat being a necessary evil, the truth of which no one can doubt, to do with the least amount of it should be the object of every cultivator, studying at the same time the health of his plants. In very cold weather, when hard firing is a necessity, an impoverishing aridity is the result, although the thermometer may still show a temperature below the proper point. Again, one may notice sometimes plants (especially those near the roof, or standing near the glass ends of the house) which are covered with a heavy dew-like moisture, which is particularly noticeable the first thing in the morning, and which remains on the plants a longer or shorter space of time, and sometimes the whole day; this state of things is not satisfactory, and bodes ill for the plants, it being the result of extremes of heat and cold—on the one hand the excessive heat of the hot-water pipes, and on the other the cold making itself felt on the roof, ends, and sides of the house. A simple and effectual remedy in such case is to employ some kind of protection in cold weather, and this, if not already at hand, should be procured, and held in readiness for use. It may be a garden mat, or piece of sackcloth—anything that will make a difference of from 5° to 10° in the warmth of the house. Many gardeners leave the summer roller-blinds in position for this purpose; but they are, as a rule, far too thin to be of much service. Whatever is chosen as a covering, it should be so arranged as to be handy for laying on and taking off. A good method is to make it so that it will cover the roof from top to bottom in lengths of 8 or 10 feet. Each length will require five strips of wood to be tacked on, of sufficient weight to keep the wind from blowing them off, one piece at each end, and the others at equal distances apart, having the required number of lengths to reach from one end of the roof to the other. They are simply laid on, and unrolled at night, and rolled up the following morning, each length in a small roll, and left lying on the roof till again required for use. On this principle, reed mats are made and used very largely in Belgium. They are neatly tied with twine to five or six strands of thicker string running lengthwise, and although cumbersome to look at when rolled up, they nevertheless answer well as protectors from frost [and from strong sunshine. Ed.].

FRUITS UNDER GLASS.

By J. RIDDELL, *Gardener, Castle Howard, York.*

POT VINES.—If the canes have begun to attain that dark-brown colour which betokens ripeness, they may be placed against a hedge or wall with a southern aspect, being securely fastened to prevent injury from wind. When drying winds prevail, the soil in the pots quickly parts with its moisture, and it will be necessary to frequently examine the plants to ascertain the condition of the soil. Canes less

well-ripened had better remain in their present quarters, and have the benefit of a little fire-heat applied during the day, and a dry buoyant atmosphere maintained. Stop any growths which may have pushed since they were last trimmed, and if any laterals remain, cut them off. It sometimes, however, happens that a few of the stem leaves fall prematurely, or are broken off by accident, so in cases of this kind the laterals with the leaves nearest the stem had better be allowed to remain, as an aid to full bud development. Fruiting canes may, at this season, be cut back to the desired length. Where due attention has been paid to stopping, little more will now be necessary than to remove the ends close to the second node. By pruning thus early, the wound has time to heal before the plants are again started into growth.

FIGS.—Plants in pots which were early placed out-of-doors will now have lost all their foliage, and may be cleaned if they are infested with scale. For this purpose, we use a stiff brush and Fir-tree Oil at its recommended strength, going over every twig and branch carefully, and making sure of getting at every one of these pests. The dressing should be repeated at intervals of a fortnight or three weeks throughout the winter, and when forcing-time arrives, the plants will be clean to start with. Give the plants the protection of a cool-house before severe weather sets in, and although the soil in their pots should not be allowed to become dry, yet very little water will be necessary while growth is dormant. Plants which have been kept growing to meet a demand for fruit, should on no account be still forced, but allowed to go to rest forthwith, or the first crop of next year will be a small one. Lower the temperature of the house containing them, and admit air freely night and day.

STRAWBERRIES in pots should be placed in a cold frame when frosty weather occurs, and sufficient accommodation of this kind should be reserved for them. It is always desirable to plunge the pots in these frames in coal-ashes, sawdust, hard tree-leaves, &c., to the rims.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, *Gardener, Mereworth Castle, Maidstone.*

GOOSEBERRIES.—These, like other fruits, must have timely attention in the autumn if the best results are expected. The Gooseberry is usually grown as a bush, but if it be planted against north or west walls, and trained fan-fashion, the fruit is equally large and fine, and may be protected by netting from birds, and thus be kept for dessert in fair condition till about this date. A soil that is rather heavy best suits this kind of fruit, and, whether planted as bushes or against walls or fences, the ground, if it will bear it, should be deeply trenched, at any rate, to the depth of 18 inches, breaking up the subsoil, but leaving it in its place. Where Gooseberries have stood for many years, the bushes seldom produce fine fruits. I would advise the grubbing-up of these as fast as new plantations come into bearing. If land is prepared at this season for new plantations, new bushes may be planted at any time during autumn and winter. The bushes may be planted at first somewhat close together, but as they grow and gain in size, they should not be stinted for space, nothing being worse for the Gooseberry than crowding them together, the fruits coming small and poor in flavour. In making plantations, it is advisable to keep late-ripening varieties, and those intended for dessert, apart from those which bear early, or are used in the green state, it being then easier to protect the best and latest. Planting should be done when the soil is moderately dry, making the soil firm about the roots, which can be better performed with dryish soil than that which is wet. Do not bury the roots deeply, certainly not more than 6 inches. If the work be done in the months of October and November, good sized bushes may with care be successfully transplanted without the loss of a crop next year.

PRUNING.—Where there is much fruit grown, the pruning of Gooseberry-bushes may be proceeded with forthwith, even if some of the leaves still hang on the branches. In pruning, freely thin the shoots, and keep the crown of a reasonable size and neatly-shaped; do not let branches or shoots cross each other, and spur back all shoots that are removed to two buds, cutting out whole branches where crowding is likely to occur, and cut away all shoots that hang too near the ground.

BLACK CURRANTS.—The bushes frequently carry too many shoots in the middle of the head—this is a mistake; they should have these freely thinned out like the Gooseberry, so that light may reach the fruits in the middle of the bushes. The young wood should not be shortened in bearing bushes, as it is on such that much of the fruit is borne. Keep the heads shapely, grub up root-suckers that are wide from the main root, and keep the land clean.

NUTS, ETC.—As soon as the husks of Filberts and Cobs get brown, they should be gathered when quite dry. Store them in a fairly dry spot, but not too dry, or kernels will shrivel. Spread them out thinly, and admit air to the place in which they are stored whenever it is favourable for so doing; this will prevent mould attacking them. Freshly-gathered Apples and Pears should be well ventilated at first, and for several weeks after gathering, to get rid of the moisture exuded by the fruit, reducing it in amount as the season advances, and fruit gets drier on the skin.

THE FLOWER GARDEN.

By H. W. WARD, *Gardener, Longford Castle, Salisbury.*

PLANTING BULBS IN GRASS.—In these columns, September 24, p. 371, reference was made to the planting of various kinds of bulbs in the flower-beds then being cleared of the summer bedders. We are now busily engaged planting in masses in the grass, open spaces amongst trees, and alongside of walks, Tulips in variety, Polyanthus Narcissus, mixed Hyacinths, Scillas, Crocuses, &c. We have well-established lines of Snowdrops on either side of the walks, as well as large clumps among the trees, and masses of Daffodils and Bluebells, and additional groups of Hyacinths, Tulips, &c., will, we expect make a good display in the spring, and to this show of bloom masses of Violets and Wall-flowers will add fragrance and variety. The bulbs are planted in holes about 7 inches deep, and covered with fine mould. It is a mode of growing these bulbs which should be more commonly practised, as the cost of the bulbs by the hundred or thousand is very moderate. The same remark applies to the planting of Lilies in open spaces, in bog and other beds. If planted in sunken pots filled with suitable soil, their roots will not be interfered with by those of trees and shrubs. Quantities of the above-mentioned bulbs, together with good-sized patches of Scillas, Chionodoxa, Irises, Colchicum autumnale, Ranunculus in variety, Anemones (double and single), Tritelia uniflora, Crown Imperials, Lilium candidum, and Hepaticas, are now being planted in the herbaceous borders. I prefer to plant these in patches, especially Scillas, Chionodoxa, Crocuses, and such-like. They are all deeply planted with the dibber, and as they are left in the ground after flowering, there is no replanting required. It answers well in our light soil, but it would not be advisable to plant bulbs so deep as we do in heavy soils, that is, deep enough to admit of the ground being forked over without disturbing the bulbs.

CARNATIONS.—Here, I never pot up layered border Carnations, or winter them in cold pits and frames, but plant them direct from the mother plants early in the present month, the ground being previously dressed with very short well-decomposed manure and dug, and well broken down, treading it over evenly, and surface-dressing it with soot and wood-ashes, which are scratched in with a rake when the levelling is done. Soot and wood-ashes protect the plants from their chief enemy, wire-worms, and some kinds of grubs, which feed on the roots. The plants are taken up with nice balls, and planted in rows 1 foot asunder, and at the same distance from plant to plant in the rows, letting them down as low as the "grass," and making the soil firm about them. If a dressing of wood or fine coal ashes be laid on between the plants to the thickness of about 2 inches, frost will not readily reach the roots. Of course the plants are watered as soon as planted, to settle the soil about them.

HARDY FERNERIES.—Examine hardy Ferns, and remove any leaves that may have become disfigured by thrip or other cause, but preserving all others, and pulling up weeds. Thin out the carpet of Ivy and Periwinkles, where these plants have become too thick together. The mixture of the green, bronze, and yellow fronds of the Fern are very effective and seasonable now.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

WEDNESDAY, OCT. 12 { Conference of the National Chrysanthemum Society at 7 o'clock.

THURSDAY, OCT. 13 { Brighton and Hove Chrysanthemum Society.

SHOW.

WEDNESDAY, OCT. 12 { Exhibition of October-flowering Chrysanthemums, at the Royal Aquarium (three days).

SALES.

MONDAY, OCT. 10 { Great Sale of exceptionally well-grown Nursery Stock, at the Woking Nurseries, Woking, by Protheroe & Morris (five days). Dutch Bulbs, at Protheroe & Morris' Rooms.

Plants from Belgium, at Protheroe & Morris' Rooms.
Lilies and Dutch Bulbs, at Stevens' Rooms.

TUESDAY, OCT. 11 { Orchids, from Messrs. F. Horsman, & Co., at Protheroe & Morris' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, OCT. 12 { Sale of Rhododendrons at Matlock Moor, by Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.
Lilies and Dutch Bulbs, at Stevens' Rooms.

THURSDAY, OCT. 13 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Plants from Belgium, at Protheroe & Morris' Rooms.
Lilies and Dutch Bulbs, at Stevens' Rooms.

FRIDAY, OCT. 14 { Orchids, from Messrs. Charlesworth, Shuttleworth & Co., at Protheroe & Morris' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.

SATURDAY, OCT. 15 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Dutch Bulbs and Lilies, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—51°·7

Horticultural Literature.

WE had occasion in our Jubilee numbers to pass in review the progress of horticulture during the fifty years existence of this Journal. Incidentally we had, of course, to note the horticultural literature of the period. We are reminded of the same subject by the publication of Mr. WILLIAM PAUL's *Contributions to Horticultural Literature*,* which extend over the same space of time. Mr. PAUL, though an active and successful man of business, has, throughout his career, recognised that he had duties to his profession, independently of any personal advantage that he might derive from it. A keen observer and a clear thinker, he has, so far as the exigencies of business allowed, availed himself of the splendid opportunities at his disposition, and powerfully contributed to the advance of horticulture and the profit of its devotees. Turning over the pages of his book,

and remembering the characteristics of its author, we can but feel that it has been a distinct loss to science that commerce should have been allowed to sway his destinies. Those who examine this volume will, we think, agree with us in this opinion. Be this as it may, Mr. PAUL has achieved success and renown, and he can look back to a half-century's progress, and use with pride, though from exactly opposite reasons, the words of *ÆNEAS*, "et quorum pars magna fui."

The book is dedicated to the author's life-long friend, Dr. HOGG, and its contents are roughly classed under three headings: 1, Roses; 2, Trees and Plants; 3, Fruit-culture and Miscellaneous. On most of these subjects, Mr. PAUL has written largely and often, so that, so far from considering the present selection as representing a small number of articles, as the author seems to think the public will do, we are surprised that a business-man should have been able to devote as much time to horticultural literature. Moreover, we hope Mr. PAUL will forgive us if we say that his book would have been even more valuable if the matter had been as carefully "rogued" as his own seed-beds are, and if some portions that were of transient or personal importance only, had been pruned-back hard.

The first article, "Roses in Pots," reminds us that in 1843 these were novelties, and that some of Mr. PAUL's greatest triumphs have been achieved in their culture, and that not the least valuable of his many books is that on *Roses in Pots*, now in a seventh edition. It is curious to see in the list of kinds recommended in 1843 for this purpose, scarcely a single variety that is now in existence. Amongst those mentioned at that early date, which still hold a foremost place, are *Devoniensis*, *Madame Bosanquet*, and *Niphetos*. The historical data supplied by Mr. PAUL, indeed, constitute one of the most interesting and important features of his book. How odd it seems, for instance, to be told that the *Rosa berberidifolia* var. *Hardii* should at that time have been root-grafted on to the *Mahonia*. No wonder Mr. PAUL says it was not likely to thrive for any length of time on a stock of so very different a character.

The lecture on the history and cultivation of the Rose will be useful to those who are puzzled to remember the origin of hybrid Chinese and hybrid perpetuals, and other sections of cultivated Roses. It is interesting from this point of view to compare the lecture given in 1845 with that read at the Rose Conference at Chiswick in 1889. In both these papers we find evidence of the scientific spirit we have before alluded to, thus: "The raiser of seedlings should endeavour to break new ground, strike out new combinations by bringing the hitherto uncultivated species into his arrangements;" and, again, in an article in the *Gardeners' Magazine* as recently as July 2, 1892, we find, "before commencing work" [raising seedling Roses] "we ought to have a pre-arranged plan—some definite object or objects in view—and work for their achievement." But Mr. PAUL has not only scientific tendencies, but æsthetic ones also, as, indeed, a lover of flowers must have; and we were but the mouthpiece of many who, some years since, admired and upheld his bold departure in the way of exhibiting Roses at the Royal Botanic. It was a triumphant vindication of our oft-expressed regret that it should be the practice to exhibit some of the most beautiful flowers in the whole range of gardening in the most uncompromisingly conventional manner that it is possible to adopt.

The descriptive articles on trees and shrubs, and on their use in landscape gardening, will be very serviceable for reference, but they do not call for comment in this place.

Under the title of *An Hour with the Hollyhook*, we have a reprint of a pamphlet originally published in 1855, and full of information on the subject on which it treats. A reference to the peculiar structure of the stamens in this plant under normal circumstances would have illustrated the way in which they become double, and might serve as a guide to the thoughtful cross-breeder. Alluding to the Hollyhook disease, which more than decimated the plants a few years ago, but which has now disappeared, Mr. PAUL attributes its prevalence to "the unwholesome plan of forcing the plant, causing it to grow out of season, and in a close unnatural atmosphere, in order to obtain a more rapid and extensive increase by root-grafting." No doubt the conditions mentioned by Mr. PAUL are likely to weaken a plant's power of resistance to adverse circumstances, but the actual cause of the mischief is well-known to be a fungus, *Puccinia malvacearum*, which was as common on the wild Mallows of our hedgerows and field-sides as it was in the Hollyhooks in our gardens. The wild plants, at least, had not been subjected to the debilitating influences to which gardeners sometimes subject their victims. Every year we see some of our wild Mallows affected with the pest, but we are quite ignorant of the conditions which caused it suddenly to assume the characters of an epidemic, and as suddenly to relapse into its comparatively quiescent state. Forcing or no forcing, there can be little doubt that we or our successors will sooner or later be called on to witness another outburst, and then, as now, we shall probably find the hardy "peasant-plant" resist the attack better than the pampered dandy of the forcing-pit.

Hyacinths form one of Mr. PAUL's many specialties. We cannot give space to the subject further than to make a passing comment on his statement, that "it would be commercially unwise to enter the field against such skilful and indefatigable contemporaries [as the Dutch]. We can buy and sell cheaper than we can produce." This is, no doubt, true as a general statement; but the experience at Kew for the last two or three years tends in the opposite direction, and we have ourselves heard—we might almost say, known—of the successful culture of bulbs in the sandhills near Sandwich. The bulbs were grown, and put upon the London market, but though the quality was not objected to, no purchaser could be found for them, because the grower would not guarantee them to be "Dutch bulbs." Those very bulbs, if our memory be not treacherous, were subsequently bought by the late Mr. VAN HOUTTE, and transferred to Belgium! Whether this be true or not, all visitors to Mr. VAN HOUTTE's nursery in spring will recognise that Dutch surroundings are not exclusively necessary for the successful culture of Dutch bulbs, and there is no doubt that we could, "an' we would," grow our own Hyacinths; and a time may come when it will be as commercially advantageous to do so as it is already in the case of Narcissus.

The lecture on the Camellia and its culture, delivered before the Royal Horticultural Society, is an admirable summary of the principal points in the culture of this valuable shrub, while the following articles from our own columns in 1879, contain an exhaustive account of the plant from a horticultural point of view, and a descriptive list of the best varieties.

* *Contributions to Horticultural Literature*, being a selection of articles written for gardening periodicals, and papers read before various Societies from 1843 to 1892, by WILLIAM PAUL, F.L.S. (WILLIAM PAUL & SON, Waltham Cross, Herts, 8vo, pp. 585).



RHODODENDRON NUTTALLI, IN LORD ANNESLEY'S CONSERVATORY.

The third section of the book, containing the author's remarks on Fruit Culture, need not detain us at any length, as the subject is so recent and is still occupying so much attention. Mr. PAUL believes that there are "thousands upon thousands of acres of land in Great Britain and Ireland, which are at present yielding little or no profit to owner or cultivator, which might be made to yield a handsome return to both if planted with fruit trees; but it is the capitalist who can afford to employ skilled labour, and wait for the returns that must set the machinery in motion."

The lecture delivered at the provincial show of the Royal Horticultural Society at Manchester on the "Improvement of Plants," is, if it be not the most valuable, one of the most important, chapters in the whole book. It details the methods which have enabled horticulturists to make such wonderful advances during the last half-century, and it offers to the thoughtful agriculturist countless examples, which he would do well to imitate according to circumstances.

Two pleasantly-written chapters close the book, one on the literature of gardening, and another on the dawn of landscape-gardening in England. But our notice has extended to such a length, that we shall run the risk of defeating our own object, which is to induce the gardening reader to peruse this "mixed border" of a book for himself, in the full assurance that he will find very much to instruct, and even more to interest him.

RHODODENDRON NUTTALLI.—We are indebted to the kindness of the Earl of ANNESLEY for the opportunity of figuring a fine plant of *Rhododendron Nuttalli* growing in his winter garden at Castlewellan, co. Down, Ireland. The species, a native of Bhotan, is deservedly a favourite with his lordship, from the large size of the flower and the lovely pale green and creamy tints of the interior of the flower-tube.

NATIONAL CHRYSANTHEMUM SOCIETY.—For the first time, the Society will hold an exhibition on October 12, 13, and 14, and, as usual, at the Royal Aquarium, Westminster, so as to afford an opportunity for the exhibition of the October-flowering Japanese varieties introduced during the last few years. A Conference will take place on the evening of the 12th, at 7 o'clock, in the library, to discuss the suggested alteration in the size of show-boards used for blooms of Japanese varieties, and to hear papers read by Messrs. C. E. SHEA, W. H. FOWLER, R. FALCONER JAMESON, and E. C. JUKES. The President of the Society, Sir EDWIN SAUNDERS, will take the chair.

CHRYSANTHEMUMS IN THE LONDON PARKS.—Mr. J. J. COPPIN, the Superintendent at Battersea Park, informs us that the exhibition of Chrysanthemums in that park will be open to the public on Saturday, October 15, in the Frame Ground, near the Albert Bridge entrance.

—The twelfth annual display of Chrysanthemums in Finsbury Park will be open to the public daily at ten o'clock, and will be at its best some two or three weeks hence.

STATISTICS OF THE NATIONAL ROSE SOCIETY'S EXHIBITS.—Mr. GRAHAME furnishes us with a reply to "Wild Rose's" last communication, and in which he states that his (Mr. GRAHAME's), figures are the official figures of exhibits staged as recorded at the time, whilst he continues to challenge the accuracy of "Wild Rose's" enumeration. We do not think this is a matter which can be any further discussed advantageously in our columns. Mr. GRAHAME himself is willing to refer the whole question to "a thoroughly competent and unbiassed authority," and when that has been done we shall be pleased to publish the conclusions arrived at. We are in this

particular matter only concerned with principles, and have not space for the discussion of details.

ONE MORE GARDENING PAPER.—Under the title of *Cottage Gardening*, Messrs. CASSELL & Co. are about to publish a new halfpenny weekly journal, dealing with gardening and kindred subjects. It is specially intended to help the occupiers of small gardens, poultry and bee-keepers, allotment-holders, and housewives. It will be edited by Mr. W. ROBINSON, F.L.S., founder and directing editor of *The Garden*, and will be fully illustrated. The first number will be published on the 12th inst.

COMPLIMENTARY DINNER TO MR. H. E. MILNER.—This took place in the French Restaurant of the International Horticultural Exhibition on the 29th ult., and was attended by nearly 100 gentlemen, including Sir Charles Tupper, Sir J. Heron Maxwell, Bart., Baron de Reuter and Baron G. de Reuter, Professor Stewart, President of the Linnean Society; Colonel Cody, Nate Salisbury, Major Burke, G. A. Loveday, Messrs. A. Waterer, W. Paul, John Lee, W. Bull, P. Barr, J. Laing, H. Turner, A. Turner, F. J. Lane, O. Thomas, A. F. Barron, H. Herbst, &c., as representing the horticultural body. Mr. H. Percy Dodson, the chairman of the dinner, and one of the directors of the exhibition, presided. In proposing the health of Mr. Milner, the chairman alluded to the immense amount of work which devolved upon him, and during the whole time the exhibition had been open matters had progressed in the smoothest manner, thanks to the good management of the chairman of the executive committee, their guest. The chairman then presented Mr. Milner on the part of the leading officials of the exhibition and others with a massive silver salver as a memento of the exhibition. On rising to respond to the toast of his health, Mr. Milner was accorded a most gratifying reception, and said that all the officials of the exhibition had but one object in view—the success of the gigantic undertaking. This was due in a great measure to the directors and the members of the staff, who had all worked most energetically. Their flower shows had surpassed their expectations; they had been the means of attracting large numbers of persons to the exhibition. They had aimed by means of these exhibitions, by lectures, &c., to disseminate a love for gardening among the people, and he believed their efforts had been much appreciated. Mr. Milner made particular allusion to Mr. W. Marshall, Mr. H. Turner, Mr. R. Dean, and other horticulturists, and also to the liberal support he had received from the horticultural trade. The number of visitors up to the present time was nearly two millions, and he was happy to say there had been no accidents, or occurrences to deplore. Some other speeches, and some excellent music, enabled a very enjoyable evening to be spent.

HARVEST FESTIVALS.—We print the subjoined circular, in the hope that other of our clerical friends will go and do likewise:—"The Vicar of Shirley, near Croydon [Secretary, Royal Horticultural Society], being an enthusiastic gardener himself, and knowing better than most people the difficulties of a gardener's life, and their generally straightened means, hopes the congregation at Shirley will enable him to send up a goodly contribution to the Gardeners' Royal Benevolent Institution, to which the offertories at the harvest festival will be devoted. An account of the Society is given in the Shirley Parish Magazine for October." To this we can now add that the church at Shirley on October 2, was tastefully and appropriately decorated with Asters, and that as a result of Mr. WILK's appeal, a sum of over £30 has been added to the funds of the Gardeners' Royal Benevolent Institution.

PROPOSED CONGRESS OF BOTANISTS OF THE WORLD AT CHICAGO.—The following letter appeared in the *Times* of October 1:—"The above is one of the things which are under consideration by the people of the United States at the World's Fair next year, and which Dr. ARNOLD brought under the

notice of botanists and others at the recent meeting of the British Association. I do not know if much advance in knowledge in certain fields of botany would be made by such a congress; but I believe that such a meeting of those botanists who are connected with economic botany would do a large amount of good. For example, I shall touch upon a few points in regard to the position of agricultural botany in our own country, where the difference of opinion on some points between the botanical representatives of some societies is remarkable, while the difference of opinion on some points between those 'authorities' who talk and write about agriculture and those who are engaged in the industry is very wide. First comes the remarkable and somewhat curious publication in the *Journal* of the Royal [Agricultural] Society, where the results of some experiments which were altogether exceptional led the botanical representative to condemn the use of the farmers' most extensively-used grass. Next, we have what was called a great controversy on the point, when another consulting botanist and professor of agriculture got turfs from various rich pastures, and studied the growth of them, which, doubtless, somewhat redeemed the character of Ryegrass, although every observant farmer knows that if he removes turfs from one part of his farm to another there is a wonderful transformation of the herbage; and what formed a great controversy to so-called theoretical men was of little value to practical men. Turning next to the doings in Scotland, we find the botanist of the Highland Society producing a work, by which he shows that grasses can be identified by their leaves, with a curious point, that a professor of agriculture writes a preface recommending that of which he practically knows nothing, he being no botanist who could claim precedence of the author for whom he writes the preface; while a principal of an English agricultural college devoted a long article in exaltation of this work in a leading agricultural publication, where he has charge of the crop department. We find the botanist of the Royal [Agricultural] in his capacity of botanist to the Bath [and West of England] Society in a recent article recommending that to identify the grasses a part should be enclosed so as to allow the plants to flower, when the foliage could be compared with that of the pastured part, and thus the plants of the latter could be identified. A representative congress before publication would have either given this book standing or prevented publication, with the view of recognition as a reliable work. Then we have the preface to the English translation of the Swiss authority's work, bearing out that what suited the Swiss was bound to do with the Britisher. The Americans are ready to take up new ideas, and the country being young much less attention is devoted to rotation than in Britain. But a great change may require to take place in their system of husbandry in the future, which latter makes them alive to novelties. Behind these matters, just touched upon, we have the acknowledged advances of crop cultivation by farmers themselves. This is true science, and much might be gained by a thoroughly representative congress. While we have seed farmers who study the strains of farm plants, and from time to time add something of value along with horticulture, forestry, and so on, with a wide field for improvement, such work is capable of much wider development, and should the people of the great Republic of the West be enabled to organize a congress of this department of botany, it seems evident to me that much might be done to modify these differences of opinion, eradicate the publication of immature or insufficiently-discussed matter, produce more harmony among the three classes referred to—viz., farmers, seed farmers, &c., and professors—give an impetus to further progress, and greatly increase the produce of the land.—WILLIAM WILSON, Alford, Aberdeen N.B." [We believe that the botanists have decided not to hold a congress at Chicago; but the subjects above-mentioned belong rather to agriculture, and a gathering of the officers of the numerous agricultural Stations in America is very likely to be held, and

would form an appropriate tribunal before which to discuss the matters referred to in the above communication. Ed.]

ROSA RUGOSA.—Mr. SMITH, Daisy Hills, Newry, who seems always to have something new and interesting, sends us a box of specimens of *Rosa rugosa*, some of the ordinary type with large bold foliage and fruits of the size of a small Plum, whilst others are scarcely bigger than a black Currant, the foliage being correspondingly diminished. The form, moreover, varies. The typical form has the fruits of the shape of the earth! spherical, but flattened at the poles, but the variety *pyriformis* has small leaves, white flowers and Pear-shaped fruits. The prickles appear the same in all the varieties and—very sharp.

CACTUS DAHLIAS.—We have received a number of seedling Cactus Dahlias from Messrs. H. CANNELL & SONS, Swanley. They are of bright colours, and exhibit good form, although we think that for general usefulness and effect, none of the newer varieties beat our old favourite Juarezii. One of the blooms from Mr. CANNELL is described as a 'Pompon' Cactus. It is somewhat smaller than the rest, but we can hardly consider it a Pompon.

GRASSES OF NEW SOUTH WALES.—In the *Agricultural Gazette of New South Wales*, published by the Department of Agriculture, Mr. F. TURNER continues his illustrations and descriptions of the grasses of Australia. The illustrations are particularly serviceable.

"AGRICULTURAL GAZETTE OF NEW SOUTH WALES."—This useful publication, which is issued by the Department of Agriculture at Sydney, contains articles on the grasses and forage plants of the colony, notes on the diseases of plants, and on insect enemies, together with much and varied information on points of practical agriculture.

AUSTRALIAN FUNGI.—From the *Kew Bulletin* we learn that Dr. M. C. COOKE has prepared a handbook of Australian fungi, including 2084 species. The genera are illustrated by thirty-six plates, twenty of which are coloured.

IRIDS.—We are glad to learn from the *Kew Bulletin* that Mr. BAKER has in the press a handbook of Iridaceæ, uniform with those which he has already published on Amaryllidæ and Bromeliadæ. The order contains about sixty genera, and 800 species, nearly half the latter being concentrated at the Cape. The large garden genera are *Crocus*, *Iris*, and *Gladiolus*.

"ANNALS OF HORTICULTURE, 1891."—Under this title the Rural Publishing Company, of New York, have published what is termed on the title-page, "a witness of passing events, and a record of progress." Its compilation has been entrusted to the very competent hands of Prof. L. H. BAILEY. It deals with fruits and fruit-culture, decorative plants, plant diseases, and other matters which are common to all countries, whilst the latter portion is concerned with lists and directories specially useful to the citizen of the States. One special feature is the census of wild American plants now introduced into commercial cultivation. Assuming that there are about 10,000 species native to America, north of Mexico, Prof. BAILEY estimates that 2416 are, or have been, in cultivation. This is satisfactory, as one of the silliest traits of fashion is to overlook native plants, and yearn after those less attainable, and less suited to the climate. Another valuable item is the list of papers and reports on horticultural and cognate subjects published by the various agricultural experimental stations. We cannot cite all the varied contents, but we may say that the book is one which no one who wants to keep *au courant* with the progress of horticulture can afford to dispense with.

BOTANICAL NOMENCLATURE.—From the *Botanical Gazette*, for September, we extract the following rules for nomenclature, which have been adopted

by the Botanical Club of the American Association for the advancement of Science.

"Resolved: That the Paris Code of 1867 be adopted, except where it conflicts with the following recommendations:—

I. *The Law of Priority.*—Priority of publication is to be regarded as the fundamental principle of botanical nomenclature.

II. *Beginning of Botanical Nomenclature.*—The botanical nomenclature of both genera and species is to begin with the publication of the first edition of Linnaeus' *Species Plantarum*, in 1753.

III. *Stability of Specific Names.*—In the transfer of a species to a genus other than the one under which it was first published, the original specific name is to be retained, unless it is identical with the generic name, or with a specific name previously used in that genus.

IV. *Homonyms.*—The publication of a generic name or a binomial invalidates the use of the same name for any subsequently-published genus or species respectively.

V. *Publication of Genera.*—Publication of a genus consists only (1) in the distribution of a printed description of the genus named; (2) in the publication of the name of the genus and the citation of one or more previously-published species as examples or types of the genus, with or without a diagnosis.

VI. *Publication of Species.*—Publication of a species consists only (1) in the distribution of a printed description of the species named; (2) in the publishing of a binomial, with reference to a previously-published species as a type.

VII. *Similar Generic Names.*—Similar generic names are not to be rejected on account of slight differences, except in the spelling of the same word; for example, *Apios* and *Apium* are to be retained, but of *Epidendrum* and *Epidendron*, *Asterocarpus* and *Astrocarpus*, the latter is to be rejected.

VIII. *Citation of Authorities.*—In the case of a species which has been transferred from one genus to another, the original author must always be cited in parenthesis, followed by the author of the new binomial."

"DICTIONNAIRE PRATIQUE D'HORTICULTURE."

—The French translation of NICHOLSON'S most useful *Dictionary of Gardening* is advancing under the editorship of M. MOTTET. Additions and corrections have been made, so that those in possession of the English edition will not find it superfluous to possess the French one also; at least, all libraries of reference should place it on their shelves. The publisher is OCTAVE DION, 8, Place de l'Odéon, Paris; or it may be obtained here through any foreign bookseller. Coloured plates form a feature, which was not possessed by the original edition.

COLUMBIAN EXPOSITION.—Mr. E. C. CULP, Secretary to the Joint Committee on Ceremonies, informs us that the Congress of the United States, at its recent session, having changed the date for the dedication of the buildings of the World's Columbian Exposition, Chicago, from the 12th to the 21st of October, 1892, he is directed to give notice of such change of date to all who have received invitations to these ceremonies.

"THE AGRICULTURAL RECORD."—This is the official journal of the Central Agricultural Board of Trinidad. It has entered upon a new series, under the management of our energetic correspondent, Mr. J. H. HART. On the subject of education, the Editor notes that there is a sort of rivalry between the Professors of Chemistry and of Botany in respect to agricultural teaching; while the practical man would have the student go through the old-fashioned forms of apprenticeship, and limit or exclude class and laboratory teaching altogether. But it is pointed out that in France this plan was tried, and fell into disrepute. No doubt the right course is, as the Editor says, so to "arrange our plans as to obtain the services of all."

A SCHEME, says the *Builder*, for the purchase of the open space now used at Earl's Court for exhibition as a public park, appears to be in the air. There is no

doubt that it would be a great public advantage if this land could be utilised for this purpose. From a purely financial point of view it would well repay the owners of houses in this district to combine to purchase this land, as it would greatly improve the district as a residential neighbourhood. Although South Kensington and Brompton are crowded with what builders have jocularly called "gardens," these are, in most instances, comparatively narrow streets, and one great drawback to this part of London is the absence of any large open public park or gardens. We have some doubt, however, whether sufficient energy and organisation will be given to this scheme, and we should not be surprised to see this space remain an exhibition ground for some time to come. But nothing would do more for the health of this district, or tend more to raise its somewhat declining favour as a place of residence, than a park at Earl's Court.

THE DEVON AND EXETER GARDENERS MUTUAL IMPROVEMENT ASSOCIATION.—The autumn programme of session 1892-93 is as follows:—

Wednesday, October 5, Mr. J. McCormick, Wear House Gardens; subject: "Grape Vines and their Cultivation." Wednesday, October 19, Lieutenant Percy Smith, Devonshire Regiment, Higher Barracks; subject: "Lilies and their Culture." Wednesday, November 2, Mr. J. Stoneman, Teacher of Botany at Exeter Museum; subject: "How a Scientific Knowledge of Plant Life can help a Gardener." Wednesday, November 16, Mr. G. B. Carlisle, Topsham; subject: "Fruit: its selection and handling—from a Fruit-salesman's standpoint." Wednesday, November 30, Mr. J. Mayne, Bicton Gardens; subject: "The Cyclamen: its Culture and Value as a Decorative Plant." Wednesday, December 14, Discussion on papers read last session. The secretaries are Messrs. Andrew Hope and T. E. Bartlett.

CATTLEYA REX.—Messrs. LINDENS' sale at Messrs. PROTHEROE & MORRIS' Rooms on Friday, September 30, was a success, and the quantity of plants of this new *Cattleya*, which formed the principal attraction, went well, the best pieces realising from five to fifteen guineas each.

UNITED HORTICULTURAL PROVIDENT AND BENEFIT SOCIETY.—The sixth annual dinner of the society was held on Wednesday, the 5th inst., in the Cannon Street Hotel. Upwards of 150 guests were present under the genial chairmanship of JNO. FRASER, Esq., of Lea Bridge. The chairman, in proposing the toast of the evening, referred to the advantages which the society offered, and to the satisfactory condition into which it has now been brought from the not too prosperous state in which it was for some years. In Mr. FRASER'S words, the society had been removed from the condition of cold adversity into the sunshine of prosperity. This result has, no doubt, been brought about by the indefatigable efforts of the officers, and by the merits of the Society itself. There are now something like £7000 in the funds of the Society, and the membership continues to show a steady increase. The convalescent fund, which was started by Mr. SHERWOOD, has been making headway, and last evening Mr. SHERWOOD managed to collect something like £30 to be placed to the credit of that fund. This Society is in no way a rival to the other horticultural benevolent associations, and as Mr. W. MARSHALL said last evening, in this Society the members help themselves, the Gardeners' Benevolent Society is to help those who have no longer the means to help themselves, and the Gardeners' Orphan Fund was to help those who were from other causes unable to help themselves. The gathering was made the opportunity to present to Mr. JAMES HUDSON, the Treasurer of the Society, a very elegant gold watch and chain, together with a testimonial, showing the members' appreciation of the unique services rendered by Mr. HUDSON during the last ten years, and expressing the hope that he might long live to continue his useful career, and to enjoy the happiness that the subscribers hoped might be his.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are requested to state that the fifty-third anniversary festival Dinner of this institution will be held on November 15 next, at the Hôtel Métropole, when the Chair will be occupied by Lord BRASSEY, K.C.B. Gentlemen desirous of being present should make early application for tickets to the Secretary, at 50, Parliament Street, London, S.W. The Secretary also desires us to say that he will be obliged if friends, who have not already done so, will kindly send in their collecting cards before that date.

HOME CORRESPONDENCE.

STEAM VERSUS HOT WATER.—In reading over the *Gardeners' Chronicle* of September 24, I was much struck with the article under the above heading by Mr. Thomson of Clovenfords. Having read the editorial article he refers to, which appeared in your previous issue, setting forth Mr. Caird's theories upon steam-heating, I came to the conclusion that Mr. Caird had not in any way over-estimated its value. Having arrived at this conclusion, I was all the more surprised upon reading Mr. Thomson's article. Mr. Thomson seems to have a great dislike to steam being used for horticultural purposes, so his letter would lead one to believe, and yet he only gives one instance of where he had steam as a heating medium. I fail to see his grounds for such antipathy. He mentions as an instance, Wrotham Park, near Barnet, in the year 1837, when he had charge of that place, and the steam-heating there was a failure. Had he found the place heated by hot water instead of steam, with the same amount of pipe-surface, it is quite natural to suppose the results would have been the same. It was not the boiler that was at fault, but the small surface of piping. That was no true test. Had he given the extra pipe-surface to his steam-boiler, it is just possible he would have had as good results as he derived from hot water with steam-boilers. There is no necessity for the attention of a "skilled engineer and his mate." How many skilled engineers are employed as firemen at public works? and they run steam-boilers. Then the cost of steam-pipes is double that of hot-water pipes. Mr. Thomson says such was probably the case in 1837, when steam was in its infancy, but it is just the other way to-day; 2-inch pipes of malleable iron, having a screw-joint, is all that is necessary; no india-rubber-rings are required—at least, so far as I have seen. Steam is much the better medium for large places, or where there is a great length of pipe. I will give you an instance where hot water failed to do that which steam accomplished. In this case it was not possible to have the boiler-house near the plant-houses without creating an eyesore, and so it was put 100 yards away from them. Hot water was tried, but failed, owing to the length of pipe it had to travel before it reached the houses, and steam was resorted to, and turned out a complete success. Two boilers were put in, and worked at low-pressure; the main-pipe was brought up the centre of a walk at 3 feet from the surface, and led into an overhead tank, in a passage at the end of the houses. The pipes supplying the houses all came from this overhead-boiler, which was fed, as I said, from the main-pipe leading from the boiler-house. This overhead-tank, where the steam was stored, was intended to help the fireman by allowing him the necessary time to get up his fires, should the temperature fall suddenly, an occurrence very common in the Eastern States of America during the winter. At this place, belonging to the Hon. F. Jones, Portsmouth, New Hampshire, there are some twenty-two houses all heated by steam from the before-mentioned overhead-tank or boiler, consisting of Peach-houses and vineries, propagating and Rose-houses, one Carnation-house, and one tropical-house (stove); all the piping was under the stages, which were built of iron and slate, only the Rose-houses having one overhead pipe, which was covered with felting and white canvas, and provided with a drip-pipe, connecting the overhead-pipe with the return-pipe under the stage. All the pipes were of 2-inch diameter. I had charge of the tropical-house and Orchids, a range 120 feet long by 24 wide, and running north and south, with a door at each end. The flow-pipes came into the house, one on each side of the door, into a manifold pipe, into which all the other pipes that passed down each side of the house, six in number (on each side) were screwed. On this manifold pipe were six valves,

one for each pipe let into it, and then at the other end these six pipes ran into another manifold having a valve for each pipe let into it. This manifold was connected with the return-pipe, and where the flow came in at the side of the door, there was a valve for itself. When steam was wanted, I opened the valve on the main or flow-pipe, which let the steam into the manifold, then I opened the valves of as many pipes as I thought were necessary on the manifold at the flow end. Then, passing along to the other end of the house, I opened the corresponding valves on the manifold, and also the blow-off valve, allowing it to stand open until all the air and water were forced out, and when the steam came I closed it. From what I have said, it will be seen that the temperature could be modified much easier than with hot-water, as I could have one or two, or all the pipes in use, just as I desired, as each pipe was independent of its neighbour. The last winter I was there we had a cold spell, during which the thermometer registered several times 6° below zero, and, with all the twelve pipes going, my house never was below 60°, and had there been any evil effects of steam whilst I was attending to the houses, it would have made itself felt. The boilers were two in number. One was used at a time, and changed every fortnight. They were attended by a labourer only, and, during the cold spell, the fires required attention every four hours, both boilers being at work at that time. The consumption of coal for the season was about 200 tons. I will give you some of the reasons why steam is better than hot water. During the winter in America the sun is a powerful agent in raising the temperature in greenhouses, so much so, no matter how cold the night, in the morning, when the sun bursts out, all artificial heat can be dispensed with. With steam five minutes' after you turn off the pressure, the pipes are cold, so that you can keep your houses at an even temperature without putting on air. Such would not be the case with hot water, as then the pipes would remain hot for a long time after shutting the valve; then again, on turning on heat, the pipes are hot inside in one minute with steam, not so with hot water. These facts are in favour of steam, I think. I worked in another place, where hot water was the medium. There we had three boilers and 4-inch cast-iron pipes, and during the season 120 tons of coal were burned, and there were only thirteen houses, and this was in New York State, which does not have the cold spells common in New Hampshire; but when we had zero-weather, the fires had to be looked to every two hours during the night, and at the end of each house there was a large expansion-box, as the pipes would never have stood the pressure without them—that was hot water. In conclusion, I may say hot water cannot be compared with steam as a heating agent: both have been given a fair trial all over the States, and the hot-water heating is constantly giving way in favour of steam, as being the cheaper and more efficient. A proof of this may be found in the fact that the largest places, and which are owned and worked by practical and scientific men, are now heated by steam. *John Stewart, Cartnall, Paisley.*

ROSES IN BRITISH GUIANA.—In reply to Mr. F. im Thurn, p. 408, I find the hybrid China Rose, "Reine Marie Henriette," one of the best red varieties for forcing. Cheshunt Hybrid is also a valuable kind; both make very strong growths indoors, similar to Maréchal Niel, and should be treated accordingly. The best plan being to prune them hard back as soon as flowering is over, and then to encourage a vigorous growth for flowering the next season. I remember how well Maréchal Niel was growing and flowering in the hot sandy soil of Florida, but I did not see any red variety there in quantity. Messrs. Peter Henderson & Co., New York, spoke very highly of H. P. Magna Charta, as one of the very best Roses for forcing; but it can only be classed as rose for colour. We have a dark red Tea Rose, Souvenir de Thérèse Levet, which does well in pots under glass; but with us it is only a moderate grower, and possibly might not prove vigorous enough for a very hot climate. As regards transportation of Roses, I had a plant of R. Sinica sent from Florida in March, which was merely wrapped tightly in oiled paper, with a little dry sphagnum-moss round its roots, and then sent by letter-post a journey of 12 to 14 days; the top had been cut down near to the root, and about an inch was projecting beyond the oiled paper; it had commenced to grow during transit. The plant was quite a young one, probably about 12 months old. It is now growing well, and has made a good plant. For sending out

from England, I should time Roses to arrive, if possible, at the commencement of the rainy season. *W. H. Divers, Ketton Hall Gardens, Stamford.*

ROSES FOR THE TROPICS.—In the *Gardeners' Chronicle* of October 1, Mr. Everard F. im Thurn asks for information concerning Roses in British Guiana. I have planted Roses in the Botanic Garden of Buitenzorg, Java, for more than twenty years. I suppose our climate in Java is not very different from that of Guiana. We have in our garden two large Rose-beds, each containing 1500 plants. In Europe, the dominating colour is red; in Java, white, yellow, and rose are the colours of the majority of flowers. The cause is, that nearly all the Tea Roses do very well, also most Bourbons, Noisettes, and the small-flowering Polyantha Roses, but the group which contains the darkest Roses; the hybrid-perpetuals, gives us much trouble. It is not easy to make out why some varieties of this group flowers freely, and others grow well, but never flower. I planted them in different manners, without much success. All Roses which in Europe are not truly perpetual, will never bloom well in a hot climate; therefore, we must only plant those varieties which are in Europe the most perpetual. Among the group of hybrid perpetual Roses, Victor Hugo, American Beauty, Lord Raglan, Géant des Batailles, Earl of Pembroke, and Madame Moreau, are flowering very well; the last-named is one of our best dark red Roses, but the plant must not be pruned too short. It produces only its splendid large flowers on long branches, as is the case with Paul Neyron, which with us also produces flowers as large as I ever saw them in Europe. Captain Christy and Merveille de Lyon give from time to time good flowers, but not so many as the first-mentioned. In a tropical climate the plants grow all the year round; therefore, we give them plenty of manure. The flowers of our Roses are, perhaps, not so large as in Europe, but we have always flowers. Every day of the year I have fresh Rose-flowers in my house. The Roses of the group Rosa indica fragrans hybrida, the so-called hybrid Teas, are also very good for warm countries. Beauty of Stapleford, Countess of Pembroke, La France, Madame Alex. Barnain, Michael Sanders, Lady Mary Fitzwilliam, are all first-rate Roses for the tropics. The Botanical Garden of Java publishes three periodicals, the first is the *Annales du Jardin Botanique de Buitenzorg*, the second the *Mededeelingen uit't Lands Plantentuin*, the third is *Teymannia*. The last is the most popular; therein are written many articles about Rose-culture in the tropics. *Wigman, Curator, Bot. Garden, Buitenzorg, Java.* [We are much indebted to our correspondent. His experience as curator of one of the finest gardens in the tropics, if not the very finest, is very valuable. Ed.]

—I have never been in the tropics, but have had considerable correspondence about Roses and Rose culture in tropical countries. One thing is very clear to me, namely, that the varieties of R. indica, Chinese, Tea-scented, and Bourbons, are the easiest to deal with there. The Noisette, Bourbon, Perpetual, and Rose de Rosomène stand next in order. Your correspondent, if fond of Roses, should grow every Tea-scented Rose he can lay hold of. The best of the hybrid perpetuals for his climate I should judge to be, Albert de Blotais, Augustine Guinoiseau, Captain Christy, Danmark, Duchess of Albany, Gloire Lyonnaise, Madame F. de Forest, Madame B. Durschmidt, Marchioness of Lorne, Gloire de Margottin, Marie Paré, Madame F. Pittet, Madame I. Pereire, and Madame A. Perrin. These have a good deal of the Chinese blood in them. But for dark red Roses, he had better trust to the Chinese or Bengal Roses. Copious watering, free shading, and strong soil would seem advisable. The best time for the plants to leave England is between October and December. *William Paul, Waltham Cross, Herts.* [To the above we may add from *Hints on Gardening in India*, by G. Marshall Woodrow, that all Roses must not be treated alike as regards pruning. "In the Noisette class, which includes the yellow Roses, Lamarque and Solfaterre, that are so common in India, the weaker shoots should be cut out, and the stronger ones reduced to about a third of their length. The proper season for this operation is when the tree is at rest during April. . . . The long rampant shoots may be pinched at the points, as the Noisettes bloom from the side shoots. Hybrid perpetuals, which include most of the rich dark colours, are benefited by hard pruning during the season of rest in April. At this season all the shoots of the past season should be cut to within four buds

from their origin. As these Roses flower at the ends of strong shoots, these should be left intact till they have flowered, then a few of them should be cut back as before; this prolongs the flowering, but if too many are cut back, it weakens the tree. Tea Roses require varied treatment; strong growers, such as M. Niel and Gloire de Dijon, should be treated as above detailed for Noisette Roses; weak growers should have all the shoots that have flowered cut back to within four buds of the base, and all weakly and barren shoots cut back from time to time during the growing season. China Roses should be cut back several times during the growing season. Bourbon Roses require little pruning beyond taking off the ends of shoots that have flowered, and cutting out such as are weakly. It is very necessary to plant Roses on raised, well-drained sites, to prevent injury to the plants, owing to flooding of the roots during the rainy season. *Ed.*]

A LARGE PAULOWNIA IMPERIALIS.—We have here growing on the lawn a fine tree, 45 feet high, and 30 feet in the spread of its branches, girth 7 feet 6 inches, being 3 feet from the ground. It flowers freely most years. The frosts of the last two winters have not injured it in the least. *G. Hunt, Ashted Park, Surrey.*

THE APPELEY TOWERS GRAPES.—Being at Ryde last week, I took the opportunity of making a call on Mr. Miles, the gardener at Appley Towers, to see the new Grapes, which he raised from seed, viz., Appley Towers, a black Grape, very distinct, with large-berried compact symmetrical bunches, which colour well, and have excellent keeping qualities, having been kept as late as the month of May in good condition. The other, a white Grape, is Lady Hutt. Two Vines of this variety were heavily cropped with capital large bunches, having broader shoulders than the other. Both are distinct, and so good that they are worthy of general cultivation. *J. C. Mundell, Moor Park Gardens, Rickmansworth.*

CARNATION WINTER CHEER.—Cultivators of Carnations for winter-flowering, who do not already possess this variety, should not fail to get it, as not having, perhaps, its equal for winter blooming. It is good in every way, and there is no difficulty with its propagation, cuttings rooting readily; it also grows freely, and its scarlet blossoms, which are of good substance and form, are produced abundantly. I saw recently at Goodrich Court, Ross, a frame filled with a fine lot of it, splendidly grown in 6-inch pots. These plants were forming so many flower-buds that Mr. Spencer had good reason to be proud of them, as he seemed to be. *Thos. Coomber.*

SOME BULBS TO PLANT AT THE PRESENT SEASON.—We all of us plant Tulips, Narcissus, Crocus, single Hyacinths for spring flowering, and in this we do well, but the bulb beds, if they are not carpeted with Pansies, Violas, Winter Aconite, Ajuga, Bellis, Arabis, &c., might be planted with the various Scillas, which do not grow so tall as the other bulbs. The best are *S. amœna* and *S. bifolia*, the former, which is very low growing, associating well with the dwarfers of these; and the latter with Hyacinths and Narcissus. *M.*

GYMNOPELALIA PEACH, ETC.—If I were limited to one Peach only, I should grow Dymond. It is a good doer, showy, and of first-class flavour. For a good late Peach, I prefer Gladstone to any other variety. Picked before it is ripe, this Peach keeps well for two weeks. For a Nectarine either early or late, none can beat Pine-apple, it is showy, of excellent flavour, keeps well after gathering. For a Nectarine it grows well. *Morgan.*

GYPSOPHILA PANICULATA.—In reading the remarks (p. 395) anent Mr. Dod's garden, I was surprised to learn that the cultivation of this plant embodied any secret; for in our garden it grows as freely as any other hardy border plant. The soil is stiff, cold, and retentive, and contains much chalk. One small root, which threw up from weakly-looking growths, developed into a magnificent bush 5 feet across and 4 feet high. This is a plant which should be more commonly cultivated, if only for its value for mixing with cut flowers. *E. M.*

STRIPED SWEET BRIAR.—This Rose, which was awarded a First-class Certificate by the Royal Horticultural Society, and has been sent out by Messrs. Paul & Sons under the name of Janet's Pride, has this year added to its value by giving a fair quantity of autumn blooms, of which I send you a specimen. *Wild Rose.*

VARIEGATED VINE.—As it is an unusual thing to hear of Grape-vines sporting, I forward, this post, for your inspection, three leaves from a sport (a lateral), which is its second year. The variety from which the sport is on is Black Alicante. Last year it bore a small bunch of Grapes, which I thought were going to remain white; but they finally turned black, though in doing so they were a most beautiful colour (puce); in my opinion, it will make a most beautiful and interesting climber for warm conservatory. No variegated leaf, to my knowledge, is so delicate in its markings. I shall try to fix it. *May-flower.* [Leaves almost pure white; incapable of growing by themselves. *Ed.*]

VICTORIA REGIA.—In your issue of last Saturday, there appears a statement, signed "J. P., Cherkley Court," to the effect that the first bloom of my Victoria regia this year opened on May 1. Will you kindly insert in your next number a contradiction of this erroneous statement, as the first bloom opened at the end of February, not at the beginning of May. The plant has continued in bloom ever since, usually with a bud as well as the flower; and I hope it will bloom periodically, although not continuously, till the middle or end of December. *Abr. Dixon.*

CERTIFICATES AT THE ROYAL HORTICULTURAL SOCIETY.—Your correspondent, at p. 409, would have made his case stronger had he confined his notes to the granting of Certificates in general, instead of selecting me because I exhibited one of Messrs. Veitch's new Peas. Of course, he fails to see what bearing my note had on giving Certificates to other things grown at Chiswick; he ignores the two first questions I raised, which were precisely similar; only those points affecting my own case are brought forward—he does not care for other Certificates. With regard to Mr. Myles' new Grapes and Mr. Allan's Strawberries getting Certificates freely, let me inform him they were voted chiefly by that portion of the committee which represent the gardeners; indeed, in both instances, I can claim to have proposed some of these Certificates. As to his surprise at some of the exhibits sent, much depends; this surprise is not shared by the larger portion of the committee. Admiration in such cases is not expected from any critic, but fair play. If everything sent is to receive approbation, I fear the Council of the Royal Horticultural Society will suffer, as I thought they welcomed exhibits to the meetings; and, as in all exhibitions, some exhibits must be old, others not interesting to everyone. As to the appointment of sub-committees at Chiswick, I am aware, in a sense, they are not yet appointed. I do not object to a representative committee, but I do object to, say, three or four members granting Certificates, if these Certificates are not to be confirmed by a full committee at Westminster. It may happen—indeed, it has been the case this year—during the holiday season, that only a few members attend Chiswick; if so, I do not see why they should object to the full committee confirming the Certificates. This is the point my critic should keep to. On the other hand, he enters into personalities when he refers to my adjudicating upon exhibits sent by my brother gardener from Albury, and *vice versa*. Let me ask him if there is not a closer relationship in the composition of the committees—is there not such a thing as two brothers, or father and son? so that the Council must take these interesting facts into consideration. I consider the postscript he finishes with of little value, as of the nineteen gardeners on the committee, half live at such distances that they cannot attend, and the gardeners are always in a minority. It is not the composition of the committee, but the conduct of one of its members who attacks another anonymously that I object to. *G. Wythes.* [Enough has now been said on this question. *Ed.*]

BIRCHLEAVES.

OUR illustration (p. 441) represents a new place recently laid out by Mr. Baines for Herbert Groves, Esq., at Birchleaves, near Weymouth. It lays to the south, and well out of the town, from whence the ground rises considerably until it reaches the highest point, where there is a broad stretch of comparatively level surface running east and west, high above Portland Roads, to which the foreshore, beginning at the dark line across the plan, descends rapidly to the water. The views from every part of

the grounds are amongst the most beautiful in the kingdom, especially from the higher portion surrounding the house; from this point the eye takes in the wide expanse of water, dotted with shipping, and the high chalk cliffs on the south and east, with the distant country beyond, including Portland Island.

Those acquainted with the locality will not require to be told that the western gales, to which the position is a good deal exposed, have necessitated care in the selection of the kinds of trees and shrubs to be used in the planting. In places such as the one in question, shelter is a matter of the first importance. In the most exposed positions, Austrian and Corsican Pines, *Pinus insignis* and *Cupressus macrocarpa*, have been freely introduced, so as to break the force of the blast from things less able to bear it. The planting on the foreshore is mostly confined to large masses of one kind of shrub in each clump, such as the green, the golden, and the silver variegated forms of *Euonymus*, Sea Buckthorn, lacinate-leaved Bramble, Double Gorse, and others of like character, with a few Pines interspersed amongst them to break the otherwise too even surface.

SCOTLAND.

CRYPTOGAMIC SOCIETY OF SCOTLAND.

THIS Society held its eighteenth annual Conference at Aberfoyle, on the 20th and 21st ult., under the presidency of Colonel Stirling, of Gargunnoch.

Aberfoyle is familiar to readers of *Rob Roy*. It is no longer, however, the Clachan of the romance. A large and spacious hotel now furnishes visitors with every modern comfort, while shops and villas are rapidly robbing the neighbourhood of the delights of its earlier seclusion. The hotel is at some distance from the original Clachan, but an effort is made to claim its romantic associations by hanging on an old tree a plough-coulter with the point painted red (shade of Scott!), to represent the red-hot implement with which Bailie Nicol Jarvie singed the Highlanders' plaid in Jean McAlpine's public-house. The traditions of the place are in exact accordance with the descriptions of Sir Walter Scott. The Clachan is on the opposite side of the "infant Forth," which is here crossed by "an old-fashioned stone bridge," and is situated beside the ruins of the old church, about half-a-mile distant from the present hotel. A venerable Ash tree is still pointed out as marking the site of the public-house, which was frequented by the famous outlaw, and a few rude stones still remain to mark its foundations. The various descriptions in *Rob Roy* of the scenery in the neighbourhood of the Clachan of Aberfoyle, are so wonderfully faithful and graphic that we involuntarily people the place with the imaginary characters of the novel.

The Conference was pretty well attended, and a delightful surprise awaited the members, in the arrival of Dr. Braithwaite, of London, a corresponding member of the Society, with whose fame they were familiar, but whom they had not previously had the pleasure of welcoming to Scotland. After a stormy period, the weather was all that could be desired during these days. The change was so welcome that the hotel-keeper wished we had come a month ago.

On the 20th, an excursion was made to Loch Ard, which lies in the pass between the valley of Aberfoyle and the Western Highlands. The scene is one of great natural beauty. "A profusion of thickets, knolls, and crags" surround the loch. Its shores are fringed by natural forests of Birch, Mountain Ash, and Oak, which clothe to varied heights the high hills, whose rugged summits rise out of the green-wood of the pass beneath. At many points of the rocky promontories and bays which indent its shores the trees overhang the water, and the coral berrie of the Rowan are reflected in the mirror of its crystal depths. Its western extremity is closed in by more imposing mountains, the towering peak of Ben Lomond forming the distant background. Boats

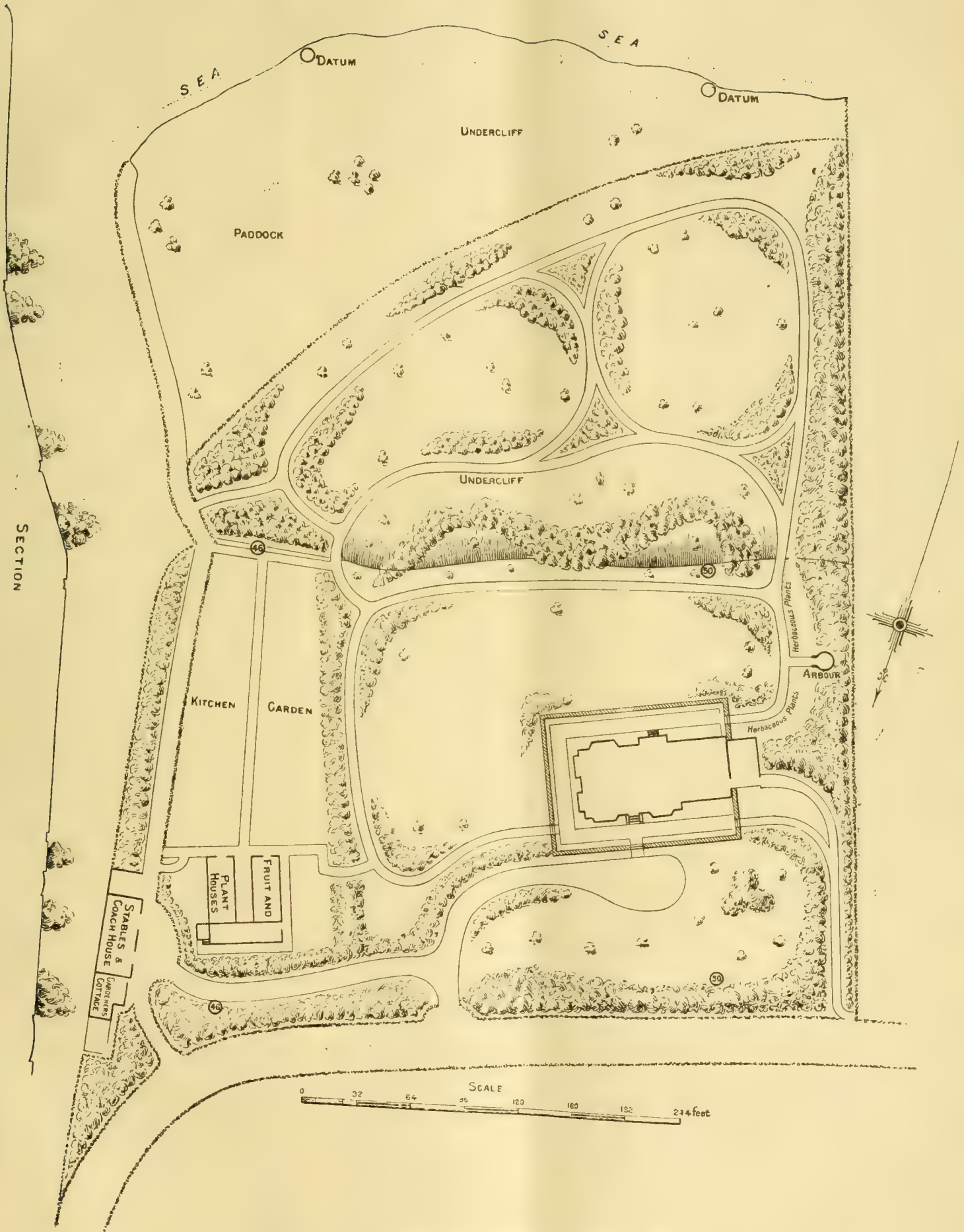


FIG. 71.—PLAN OF A GARDEN AT BIRCHLEAVES, NEAR WEYMOUTH. (SEE P. 440.)

were hired for the day, that the party might select the most favourable ground along the shores. After passing underneath the rock, where the skirmish in which the English soldiers were defeated by the Highlanders took place, where Bailie Nicol Jarvie was "hung up between heaven and earth, like an auld Potato-bogle," and where the craven Morris was, at the command of Helen McGregor, bound, and hurled headlong into the loch. About an hour's rowing brought us to our hunting-ground. The sun was dipping behind Ben Lomond ere we quitted the scene, and twilight was deepening on the Avondu when we reached Aberfoyle.

The business meeting of the Society was held in the evening. The report of a committee appointed to consider the extension of the Society's work formed the chief subject of discussion. A revised map of Scotland, for geographical distribution, was adopted, along with a scheme for the more detailed record of species. Other proposals, having reference to publication, &c., were remitted to the committee. An increase of the Society's membership would greatly facilitate the accomplishment of its aims. The Secretary, in the absence of Mr. A. Stephen Wilson, of Aberdeen, read a short communication on "Potato Disease." Mr. Wilson continues to advocate the theory "that the disease arises from granules of mucoplasm distributed through all parts of the plant, and that there is no translocation of mycelium." The President then delivered the annual address, in which he dwelt upon the aims which the Society should keep in view. A cordial vote of thanks was accorded to him for his address and genial conduct of the meeting.

On Wednesday, the 21st, an excursion was made to the woods of Gartmore, the property of Mr. Cunningham Grahame, where a pleasant day was spent. As many of the members were obliged to leave on the following day, the Conference was brought to a close in the evening by the annual dinner.

The season, on the whole, has proved an unfruitful one, and few varieties were met with. Among mosses gathered during the excursions, may be mentioned—*Dicranum Scottianum*, Turner; *Hypnum callichroum*, Hsch.; *Hypnum crista-castrensis*, Linn.; and *Grimmia Stirtoni*, Schimper. The Lichen flora of Aberfoyle seems singularly meagre: the following may be noted—*Parmelia pertusa*, Schrank; *P. saxatilis* var. *sulcata*, Taylor, in fruit; and *Sphaerophoron compressum*, Ach., in fine fruit. Fungi were not numerous; although a good many species were recorded, none more uncommon than *Hygrophorus calyptraeformis*, B. and Br.; *Polyporus sulphureus*, Fr.; and *Rhizina undulata*, Fr., were met with. The specimens of the latter were very large, and finely developed. Beautiful specimens of *Chlorosplenium æruginosum* "Flo. Dan." (*Helotium æruginosum*, Fr.), were found growing on Birch; it is usually found on Oak.

Since the above was written, Mr. Phillips has reported *Peziza majalis*, Fr., gathered during the Conference at Aberfoyle, as new to Britain.

The next annual Conference of the Society will be held at Moffat, *J. S., Glamis*.

SALE OF ORCHIDS IN GLASGOW.

Between four and five hundred lots of Orchids, the property of Messrs. C. Shuttleworth & Co., Heaton, Bradford, Yorks, and Park Road, Clapham, London, were exposed for sale in the auction rooms, 72, Renfield Street, Glasgow, on September 28. The list included choice *Cattleyas*, *Lælia grandis tenebrosa*, *Cypripedium Lathomianum* ×, *Oncidium Marshallianum*, *O. Rogersii*, *Odontoglossum Roezlii*, *Cælogyne Lowii*, *Phalenopsis Esmeralda*, and other good things, chiefly established plants, mostly small, but clean and healthy. Unfortunately, few Orchid buyers were present, the seductions of the moors and coast retreats yet keeping the majority of these out of town. Consequently, the sale fell rather flat, and prices ran low. The following quotations give a fair idea of the biddings: *Odontoglossum Roezlii*, nice plants, one or two breaks, and spikes opening, or in flower, 4s. to 5s. each; *Cypripedium Harrisonianum*, nice plants, 6s.; *Oncidium sarcodes*, in

flower, 4s.; *Cattleya Schofieldiana*, good plant, 20s.; *Odontoglossum crispum*, in flower, good spike and plant, 7s.; *Oncidium macranthum*, good spike, fine plant, 8s.; *O. Forbesii*, good plant and spike, 6s.; *Odontoglossum grande*, fine plants, with spikes opening, or open, good varieties, 7s.; *Oncidium incurvum*, four spikes, fine plant, 10s.; *Odontoglossum triumphans*, 7s.; *O. Pescatorei*, good plant, 6s.; *O. Edwardsii*, with fine spike, 9s.; *Cypripedium Lathomianum* ×, 40s.; *C. Elliottianum*, good plant, 18s.; *C. selligerum rubrum*, 18s.; *C. Mrs. Charles Canham*, fine plant, 14s.; *Oncidium crispum*, fine spike, 20s.; *Sophranitis grandiflora*, good plant, 2s. 9d.; *Dendrobium crassinode album*, four bulbs, one break, four and a half guineas.

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 4.—An excellent display was brought together at the Drill Hall, on the above date, including many Orchids—some novelties amongst them; a great quantity of Michaelmas Daisies in variety, but in the case of one exhibitor vastly past their prime; other hardy herbaceous plants as cut blooms and a considerable quantity of Apples, Pears, Plums, &c.

Floral Committee.

Present: W. Marshall, Esq. (chairman), Messrs. Jno. Laing, B. Wynne, R. Dean, R. Owen, H. Herbat, C. F. Bause, J. Walker, G. Phippen, J. Fraser, G. Nicholson, F. Ross, W. C. Leach, N. Davis, C. E. Pearson, C. J. Salter, W. Bain, C. Jeffries, H. B. Pöe, T. Baines, G. Paul, W. Goldring, C. T. Druery, W. Furze, and G. Gordon.

A very bright display was effected by the various collection of hardy perennials, &c., for which special prizes had been offered to amateurs, besides which there were several other interesting exhibits. For eighteen bunches hardy perennials, the Earl of Dysart, Ham House, Richmond (gr., G. Sage), was awarded a 1st prize. His specimens were good and fresh looking, especially considering the rough weather that has obtained of late. The most noteworthy species were *Pyrethrum uliginosum*, *Eryngium Oliverianum*, *Aster lavagatus*, *Rudbeckia Newmanii*, *Gypsophila paniculata*, *Erigeron speciosus*, and some varieties of *Helianthus*. W. E. Hall, Esq., Coker Court, Yeovil (gr., M. Hidley), was 1st for twelve bunches, with *Anemone japonica*, *Gladiolus racemosus* (Princess Clothilde), a very pretty variety; *Helenium Hoopesii*, *Phygellus capensis*, *Helianthus lætiflorus*, &c. Mr. James Gibson, The Oaks Gardens, Carshalton, was 2nd for eight bunches; Mr. James Hudson, Gunnersbury House, Acton, was 1st. He had a very fine specimen of *Aster bessarabicus*, *Pyrethrum lacustreum*, *Helianthus multiflorus*, *maximus*, &c. 2nd, Miss Debenham, St. Peters, St. Albans; which included *Sedum spectabile*, *Gaillardia grandiflora*, and *Solidago virginica*. Messrs. Barr & Son, Covent Garden, contributed a large collection of Asters, the most striking of which were *A. Amellus majus*, *A. novi-belgii* (Robert Parker), *A. n.-b. roseus*, and *A. n.-b. Janus*, a pretty white variety, and the distinct yellow *A. Linosyris* (Silver Banksian Medal). Messrs. E. D. Shuttleworth & Co., Fleet, Hants, likewise furnished an immense growth of Asters, &c., amongst which we noticed *Aster azureus*, *A. longifolius formosus*, a number of varieties of *A. novi-belgii*, *A. amethystinus*, the curious little *A. cordifolius*, and *A. c. var. major*; varieties of *A. Amellus*, *A. umbellatus*, &c. (Bronze Banksian Medal).

The Rev. W. Wilks, Shirley Vicarage, brought *Aster Jno. Wood*, *A. Madame Trevelyan*, *A. decorus*, and *A. Thompsoni*.

A very neat yellow Carnation, named Fry's Buttnhole, came from Mr. Geo. Fry, Lewisham; also two blooms of two seedling Fuchsias, of considerable merit.

Mr. Thos. S. Ware, Tottenham, staged a lovely group of *Nerines*, in eight varieties; *N. Plantii*, a good dark crimson; *N. amabilis*, pale pink; *N. excellens*, rose, with darker line running along centre of petals; *N. sarniensis*, a good dark variety; and *N. corusca major*, a very fine rich scarlet. Also two or three plants of the pretty dwarf *Iris alata*, and a group of Tree Carnations, which included some very choice varieties.

Mr. H. Elliott, Stourvale Nursery, Christchurch also had a few *Nerines* in very fine condition; *N.*

corusca major and *N. c. m. sarniensis*, a very good purplish-rose; *N. gracilis*, and *N. bella*, a pink one, described as new, likewise exhibiting several varying forms of *Dracena australis*, viz., *D. Doucetti*, a narrow rigid-leaved graceful plant; *D. australis*, with narrow leaves; *D. a.*, with broader leaves; *D. a. rubra*, with leaves of more breadth than the other forms, of a bronzy-green colour, and reddish-brown midrib—a distinct fine variety, which received a First-class Certificate; *D. a. congesta nana* is an erect stiff form; *D. a. aurea striata*, *D. a. nobilis*, broad green pendent leaves.

Messrs. Pitcher & Manda, Hextable, exhibited a new white incurved *Chrysanthemum*, named *Geo. Savage*.

A handsome *Tacsonia* came from Mr. W. Smythe, gr., Basing Park, Alton. It is a very distinct variety, colour scarlet, and named *T. Smythiana* (First-class Certificate).

Mr. Anthony Waterer, Knap Hill Nursery, Woking, Surrey, had a group of *Pernettyas*, well berried, and a specimen of *Picea pungens argentea*, and two rather delicate little plants of *Retinospora filifera aurea* (Bronze Banksian Medal).

Messrs. J. Veitch & Son, Chelsea, obtained a First-class Certificate for *Hymenanthra crassifolia*, which was figured in the last issue of the *Gardeners' Chronicle*. The same firm showed a group of *Caryopteris mastacanthus*, taken from the open ground, and in full bloom. Also some very well grown specimens of *Amasonia punicea*, for which a Cultural Commendation was awarded. Messrs. Veitch likewise secured a First-class Certificate for *Rhododendron multicolor* var. *Neptune*. This is a very fine hybrid; flowers four to five on each corymb, of a deep scarlet colour. A collection of Veitch's hybrid *Streptocarpus* was charming; the various tints of which this plant seems capable appear to be unlimited.

Messrs. B. S. Williams & Son, Upper Holloway, exhibit a new *Clivia*, Autumn Beauty.

From Mr. C. Leach, gr. to the Duke of Northumberland, Albury Park, came some shoots of *Hippophae rhamnoides*, the very ornamental *Sea Buckthorn*, *Rosa rugosa*, and others. Also some well-grown specimens of *Mignonette Her Majesty*, in 32s.

Mr. W. Wells, Earlswood Nurseries, a good collection of *Chrysanthemum* blooms, including especially large blooms (for the season) of *Jeanne d'Arc*, some good blooms of a yellow variety, called *William Wells*; and many others of the large-flowering section, beside a number of single and semi-single varieties (Bronze Banksian Medal).

Mr. Richard Owen, Castle Hill Nursery, Maidenhead, showed the English-raised Seedling *Chrysanthemum Lady Brooke*, a reflexed Japanese, of canary-yellow, rather deeper in tint in the centre; *C. Madame Zephyr*, an early yellow-flowered variety; *C. General Hawkes* is a crimson reflexed Japanese, with thread florets.

Mr. Thomas Hobbs, St. Mark's Road, Bristol, sent a large double *Dahlia*, called *James Hobbs*.

Mr. John Crook, gr. to W. H. Evans, Esq., Forde Abbey, Chard, Somerset, sent a collection of Asters. Messrs. John Laing & Son, Forest Hill, had a number of plants of the elegant little *Saxifraga sarmentosa tricolor superba*.

From Messrs. H. Cannell & Sons, Swanley, came some very fine blooms of zonal *Pelargoniums*, and some good blooms of *Begonia Rosebud*.

An Award of Merit was granted to *Dahlia Mrs. Vagg*, shown by Mr. Rawlings; and to *Chrysanthemum General Hawkes*, and *C. Lady Brook*, shown by Mr. Owen of Maidenhead.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair: and Messrs. Jas. O'Brien, Sec., Dr. Maxwell T. Masters, F.R.S., Sydney Courtland, T. B. Haywood, F. Sander, Hugh Low and H. Williams.

The chief features of the meeting were the groups of Orchids, and of these the largest was contributed by Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, and which contained many rare species; the plants moreover were very tastefully set up. Among them were two fine forms of *Cypripedium Morganii* ×, *C. Euryandrum* ×, *C. vexillarium superbum* ×, *C. Ashburtonii superbum* ×, *C. Adonis* ×, *C. Io grande* ×, and many other *Cypripediums*. *Miltonia candida grandiflora*, with fifty flowers; *Oncidium incurvum album*, *Dendrobium Dearei*, *Lycaste lanipes*, &c. (Silver Flora Medal). Messrs. F. Sander & Co. also staged a group which was characterised, as usual, by the large proportion of fine and well-grown plants. Included were two

very handsome *Houlletia Brocklehurstiana*; many *Dendrobium Phalaenopsis Schroderianum*; a new hybrid *Calanthe*—*C. orphanum*×, flowers white with yellow lip and purple eye; *Cypripedium Donatium*×, *C. Brunianum*× (*Leeanum*×*acanthum superbum*), *Oncidium Burbidgianum*; *Paphinia cristata grandis*, a charming pan of *Phalaenopsis Lowii*, the singular and pretty *Grobysa Amherstiae*, *Sarcanthus teretifolius*, *Cattleyas*, &c. (Silver Banksian Medal).

The group set up by Messrs. Hugh Low & Co., of Clapton, was bright with plants of *Vanda Kimballiana*, *Vanda cœrulea* and *Cattleyas*, and also contained the rare white *Trichopilia rostrata*, *Cypripedium Schroderae*×, several *C. Parishii* and *C. belatulum* (Silver Banksian Medal).

Messrs. Pitcher & Manda, The United States Nurseries, Hextable, Swanley, Kent, staged a small group of *Cypripediums*, chiefly hybrids, and very interesting for the facilities they offered for comparison (Vote of Thanks). Thos. Statter, Esq., Stand Hall, Whitefield, Manchester, exhibited a broad-petalled, nearly unspotted *C. granulosa*, a cut-spoke of *Lælia elegans Chelsoniensis*, and a plant of a very singular form of *Cattleya bicolor* with a slate-blue lip, named *C. b. cœrulea*. W. C. Clark, Esq., Orleans House, Aigburth Drive, Liverpool, sent a fine drawing of a magnificent plant of *Cattleya Hardyana*, which flowered with Reginald Young, Esq. The drawing was made by Mrs. Clark, and the fine plant was procured unfloated from one of Messrs. Sander's importations. The plant had ten flowers. C. K. Wild, Esq. Hampstead (gr., Mr. R. Pallant), exhibited *Stanhopea Wardii aurea*.

Wilberforce Bryant, Esq., Stoke Park, Slough (gr., Mr. David Kemp), sent a fine plant of *Oncidium ornithorhynchum*, with forty-five spikes (Cultural Commendation); and W. Wells, Esq., Broomfield, Sale, near Manchester (gr., Wm. R. Hinde), sent a flower of a richly-coloured *Cattleya* of the *C. Hardyana* class, but with sepals and petals marbled cream-colour and rose, and resembling the beautiful form described in our columns from Lord Rothschild's collection as *C. aurea marmorata*.

Fruit and Vegetable Committee.

Present: P. Crowley, Esq., Chairman; Messrs. J. Lee, T. F. Rivers, W. Wilks, H. Veitch, G. W. Cummins, J. Cheal, G. Taber, G. Bunyard, J. Wright, A. Dean, W. Bates, G. H. Sage, G. Wythes, C. Ross, J. Hudson, H. Balderson, R. Hogg, Harrison Weir, and J. Willard.

The exhibits under this committee included a large number of Apples and some Pears, both nurserymen and amateurs contributing their quota to the display.

From the Royal Horticultural Society's Gardens, Chiswick, were exhibited several kinds of Grapes, including *Gros Colmar*, in good condition; a white variety called *White Gros Colmar* (First-class Certificate). Another white Grape called *Chasselas Vibert*, grown in a cool house, which obtained an Award of Merit, but the flavour of which did not commend itself to us, and *Royal Muscadine* from a cool house. Also two dishes of a fine-looking Apple *King Harry*, which obtained an Award of Merit.

Mr. A. J. Brown, School of Handicraft, Chertsey, sent a very nice collection of Apples and Pears, which had been grown from cordons, planted late in 1890.

From Mr. J. Crook, Forde Abbey, came *Plums* *Coe's Golden Drop* and *Reine Claude de Bay*, one dish of each, and a few Apples (Vote of Thanks).

Two seedling Apples came from Messrs. Stephen Spooner & Sons, Hounslow Nurseries, The Baron and another one called *Richmond Seedling*. Another seedling Apple, called the *Empress*, was from Mr. G. Edmunds, The Grange, Gillingham. Mr. J. Miles, Normandy Farm, Erith, sent a good dish of Apple *Duchess of Kent*.

Mr. Chas. Ross, gr. to Col. Archer, Welford Park, Newbury, obtained an Award of Merit for No. 2 Seedling Apple from *Golden Reinette*; he also showed another seedling from the same variety. A Seedling Melon of considerable merit, obtained from Read's Scarlet Flesh, and *Hero of Lockinge*, was from Dr. Frankland (gr., Chas. Kitchings). A first-class Apple called *Rivers' Codlin*, of good appearance and fair size, was shown by Messrs. T. F. Rivers & Son, Sawbridgeworth, and was awarded a First-class Certificate.

Dowager Lady Freak, Fulwell Park, Twickenham (gr., Mr. Rickwood), received a Silver-gilt Knightian Medal for a good collection of Apples and Pears. Amongst which we noticed Apples, *King of Pippin*, *Cox's Orange Pippin* (very large), and *Frogmore Prolific*, as being particularly good. Among the Pears were *Beurré Clairgeau*, *Louise Bonne* of Jersey,

Jersey Gratioli, and *Durondeau*, all of which were ready for table. Another good collection of Apples came from A. H. Smee, Esq., The Grange, Carshalton (gr., Mr. Cummins). The following were very fine:—*Dutch Codlin*, *Bismarck*, *Beauty of Wilts*, *Farmer's Seedling*, *Worcester Pearmain*, *Yorkshire Beauty*, *Manx Codlin*, *Gascoyne's Scarlet*, *Buckley's Seedling*, &c. (A Silver Knightian Medal was awarded.)

Messrs. J. Cheal & Sons, The Nurseries, Crawley, staged the largest collection of Apples and Pears, and included some very fine fruits. Of Pears, *Beurré Superfin*, *Louise Bonne* of Jersey, *Pitmaston Duchess*, *King Edward*, *Bon Vicar*, and *Princess* were good and ripe. Amongst Apples, particularly noticeable were *Duchess of Oldenburg*, *Lewes's Incomparable*, *Beauty of Kent*, *Worcester Pearmain*, *The Queen*, *Ackera*, *Emperor Alexander*, *Peasgood's Nonsuch*, *Hollandbury*, *Cellini Pippin*, *Lady Sudeley*, and *Mabbot's Pearmain* (Silver Banksian Medal).

Mr. J. Willard, Holly Lodge Gardens, Highgate, sent fruits cooked and uncooked of a Maize called *Adams' Early*. They were of exceptionally good flavour, and were voted an Award of Merit. The following particulars accompanied the heads. Two sowings were made, one on April 15, and another on May 20, in an open border. The Cobs have been used regularly for the table since August 1.

Tomato, *Ham Green Favourite*, came from Mr. Jas. Hudson, Gunnersbury House, Acton. The fruits which were of much merit, had been grown in a bed of ashes. Mr. Robt. Owen, Maidenhead, showed a dish of fairly good Tomatoes, called *Owen's Perfection*. Another dish of Tomatoes came from Mr. J. Simpson, Dollis Hill, Kilburn.

Mr. John Wilson, Glenlee Gardens, Hamilton, showed a very large seedling Cucumber.

LECTURE ON MICHAELMAS DAISIES.

In the afternoon a lecture on the above subject was given by Mr. D. Dewar, of the Royal Garden, Kew. In commencing, the lecturer referred to the collection at Chiswick, and said he believed it to be the finest collection extant. The committee of the Royal Horticultural Society were submitting the collection to the fullest review possible, and correcting the classification and nomenclature as far as possible. There were many which Mr. Dewar believed to be of garden origin, and these were giving the committee a great amount of trouble. He preferred to have little to say upon these varieties pending the issue of the report of the committee, so that confusion through the possible altering of some of the names might be avoided; and Mr. Dewar hoped that when these were dealt with, and permanent names attached to them that they would receive English names, that they might be readily distinguishable from the natural species.

The number of the cultivated species known to botanists was roundly speaking about 250, and of these some 140 are natives of the United States of America. It is from the Eastern United States that most of the species useful to cultivators have come. Mr. Dewar said that anything that tended to draw together autumn and spring should be welcome to our gardens, and the decorative value of the Michaelmas Daisy being so well known, ought to ensure them a kindly reception, besides which they formed an interesting feature in the flower garden and pleasure grounds. Some of the *Asters* might be used as bedding plants, and the dull beds of *Rhododendrons* and other evergreens would be made ornamental, if they were judiciously thinned out, and some of the more suitable of the *Asters* planted in clumps. *Asters* liked a strong, rich, deep loam, and on the whole enjoyed lifting and division every year. When division is effected, the outside crowns should be used for planting (as these are the strongest), and the centre broken up or thrown away. This should be done in the spring, just as they were commencing to grow. They might also be raised from seed, which would be found to be a very interesting process. The lecturer said that many of the species were worthy of being planted in beds by themselves, that their better quality might show to advantage. Mr. Dewar afterwards gave a review of the genus, and enumerated some of the species that he thought most worthy of cultivation, at the same time giving directions as to each, and the time at which they might be expected to flower. The lecturer, in concluding, advised all who were interested in these plants, to go to Chiswick, and make a selection for themselves. The result of the work of the committee in regard to that collection would be published as soon as possible. Dr. Masters, who

occupied the chair, said the difficulties experienced with the genus were due to the fact, that the genus was now in process of formation, and botanists, as a result, were frequently confronted with new forms, many of which in course of time would die out, when the task of discrimination would be easier.

CHISWICK CERTIFICATES.

We are requested to publish the following Minute of Council:—

"The attention of the Council having been drawn to a difficulty in the awarding of Certificates, &c., to plants which have received three marks (xxx) at Chiswick, passed the following minute:—

"The Council request that in future, whenever any plant (fruit, flower, seed, vegetable, &c.) shall have had xxx given it by a committee meeting at Chiswick, the Superintendent of the Gardens will (if it be possible) bring it forward at the next (or nearest possible) general meeting of the Society, at Westminster, or elsewhere, in order that it may, if still thought deserving, receive a more definite award."

The Council also passed the following minute:—

"The definite award made under the above minute of Council will be given (as all the Society's awards are made) to the plant in question, and the custody of the Certificate or other award will vest in the person sending the plant, &c., to Chiswick for trial. W. Wilks, Sec. R.H.S."

INTERNATIONAL SHOW.

HARDY FRUITS AND POTATOS.

The show of hardy fruits and Potatoes in connection with the International Horticultural Exhibition at Earl's Court was a complete success. The classes were so competed for that the available space proved totally insufficient for the occasion, and this minimised to a large extent the area devoted to the non-competitive exhibits. In the first class for fruits there were five competitors, and the number of dishes staged was 500. The prize was for a collection of Apples, kitchen and dessert, six fruits of each variety, not to exceed 100 dishes, distinct. The most successful exhibitors were Messrs. Geo. Bunyard & Co., Maidstone, who staged a magnificent collection of varieties, the number of which were far too many for us to notice, suffice to say that *Bismarck* was staged as well as it ever has been, and some specimens of *Stone's Apple* weighed 20 oz. each. The English Fruit and Rose Company, Hereford, were 2nd, with a collection that in any ordinary competition would have been 1st; Mr. Jno. Scott, The Royal Nurseries, Merriott, Crewkerne, was 3rd.

For a collection of Pears, to consist of six fruits of each variety, to the extent of fifty dishes, Mr. H. Becker, Jersey, was 1st, the collection contained some very large fruits, but there were several dishes that were rather weak; 2nd, Mr. G. Woodward, Barham Court Gardens; and Mr. A. J. Thomas, Rodmersham, near Sittingbourne, was 3rd.

The next class was for a trophy of vegetables arranged for effect. The 1st prize fell to Mr. W. Pope, Newbury, whose collection could not fail to arrest attention; particularly good were the Carrots, Beets, and other roots. Mr. J. Gibson, Carshalton, was 2nd.

All the other classes for fruit were open only to amateurs. For a collection of Apples, kitchen and dessert, fifty dishes, distinct, six fruits each, the 1st prize was secured by Mr. Geo. Woodward, Barham Court Gardens, Maidstone, with fine and well-coloured fruits; Mr. Thomas Turton, Reading, was 2nd; and the 3rd prize went to Mr. Geo. Goldsmith, gr. to Sir E. D. Loder, Bart., Horsham.

For twenty-four dishes, the successful exhibitor was Mr. Jno. McKensie, Linton Park, Maidstone; 2nd, Mr. F. Smith, Loddington, Maidstone; and 3rd, Mr. Thos. Turton, Reading.

In the competition for twelve dishes, Mr. George Woodward was 1st, Mr. Austen T. Killick 2nd, and Mr. George Chambers, Maidstone, 3rd.

For twelve dishes of Pears, distinct, the 1st prize went to Mr. George Goldsmith, gr. to Sir E. G. Loder, Bart., Horsham, who had *Louise Bonne* of Jersey in perfect condition, and *Marie Louise*, a very good colour, and clean; 2nd, Mr. A. Offer, Crawley; 3rd, Mr. J. Nicholson, Chingford.

Mr. R. Smith, gr. to Lady Francis Fletcher, Yalding, Kent, was 1st for six dishes; Mr. C. West, Landford, Salisbury, 2nd; and Mr. T. G. Dean, gr. to Hon. C. Leveson Gower, Titsey Place, Limpsfield, 3rd.

For twelve dishes of vegetables, not to contain more than two dishes of any one kind, the 1st prize was secured by Mr. Thomas Wilkins, gr. to Lady Theodora Guest, Inwood House, Hensbridge; Mr.

Richard Lye was 2nd, and Mr. J. Friend, gr. to the Hon. P. C. Glyn, Rooknest, Godstone, 3rd.

For a collection of Sunflowers, Messrs. Barr & Son, Covent Garden, were 1st, and Mr. G. H. Sage, The Gardens, Ham House, Richmond, 2nd. Mr. Norman Davis, Lilford Road Nurseries, Camberwell, was 1st for a collection of Michaelmas Daisies. Messrs. Barr & Son, 2nd, and Mr. Geo. H. Sage, 3rd.

Potatoes.—Class I. was for twelve dishes, distinct varieties, each dish to contain nine tubers. The 1st place was secured by Mr. J. H. Ridgewell, Cambridge, who showed Snowdrop, Mr. Breese, Fidler's Reading Giant, Sutton's Satisfaction, Queen of the Valley, Edgemoor Purple, Pink Perfection, The Dean, Come to Stay, Beauty of Hebron, Perfect Peach Bloom, Lord Tennyson. 2nd, Mr. Wm. Pope, Newbury; and 3rd, Mr. A. Cross, Shutford, Banbury. For nine dishes, Mr. James Simkins, Shillington, near Hitchin, was 1st, who staged Sutton's Seedling, Chancellor, Sutton's Satisfaction, The Dean, Fidler's Reading Giant, Pink Perfection, Snowdrop, Sutton's Reading Ruby, and Sutton's Best of All; Mr. Wm. Pope, Newbury, was 2nd; and Mr. Arthur Coomes, Dudley, 3rd.

For six dishes, the successful exhibitor was Mr. Jas. Simkins, Shillington; Mr. Wm. Pope, Newbury, 2nd; and Mr. J. H. Ridgewell, 3rd.

For three dishes of coloured round Potatoes, Mr. J. H. Ridgewell was 1st again, with Reading Russet, Vicar of Laleham, and Pink Perfection.

Mr. Jas. Lye was 1st for three dishes of white kidney, and Mr. J. Ridgewell 2nd, with Snowdrop, Fidler's Purity, and Reading Giant.

For three dishes of kidneys (coloured), Mr. Ridgewell was 1st, with Mr. Breese, Edgemoor Purple, and White Elephant; 2nd, Mr. G. North, Buckingham; and 3rd, Mr. G. Galt, Oxford.

There were numerous competitors for the best dish of any white round Potato, and the London Hero, shown by Mr. T. Wilkins, gr. to Lady Theodora Guest, was exceptionally fine; Mr. James Simkins, Shillington, was 2nd; and Mr. J. Ridgewell, 3rd.

For the best dish of any coloured round, Mr. James Simkins contended successfully with The Dean; Mr. R. Lye, gr. to W. H. Kingsmill, Esq., Newbury, who was 2nd, showing Reading Russet; Purple Perfection won the 3rd position for Mr. G. Galt, Oxford.

Mr. J. H. Ridgewell had the best dish of any white kidney, in Snowdrop, and Mr. Tom Tooley, 22, Albert Street, Banbury, the best coloured kidney, in Mr. Breese.

For six dishes of Potatoes, distinct varieties, introduced since January 1, 1886, the 1st prize went to Mr. James Simkins, Shillington, for good dishes of Reliance, Sutton's Abundance, Sutton's Seedling, Sutton's Windsor Castle, Sutton's Satisfaction, and Fidler's Reading Giant; Mr. J. H. Ridgewell was 2nd, and Mr. James Lye, Market Lavington, 3rd.

For three dishes under same conditions, Mr. J. H. Ridgewell was 1st, with Fidler's Reading Giant, Pink Perfection, and Sutton's Satisfaction; Mr. Tom Tooley was 2nd, and Mr. E. S. Wiles, Edith Road, Oxford, 3rd.

Certificates were awarded to seedling varieties of Potatoes, of sufficient merit, not in commerce, as under:—For single dish of white round, First-class Certificates were awarded to Mr. F. Laxton, Bedford, for Murphy, obtained from Scotch Champion and Reading Hero; to Mr. E. S. Wiles, Edith Road, Oxford, for Oxford Surprise, from Chancellor and Sutton's Abundance; and to Mr. Charles Ross, Welford Park, Newbury, for his Recruit.

For a dish of coloured round Potatoes, First-class Certificates were awarded to Mr. E. S. Wiles, Edith Road, Oxford, for his Pink-eyed Perfection from Sutton's Abundance × Reading Russet, and to Mr. Horam Fletcher, Annesley, Notts, for a dish of Lillie Langtry, obtained from naturally-fertilised seed from Lord Tennyson.

For a single dish of white kidney, the following obtained Certificates:—Rising Star, by Mr. Chas. Ross, Welford Park; Lord Wolseley, by Mr. C. W. Howard, Canterbury, and Oxford Giant, by Mr. E. S. Wiles. For a single dish of coloured kidney Potato, Mr. W. Kerr, Darganel, Dumfries, obtained a Certificate for a good-looking variety, said to be a seedling from Abundance.

Non-competitive exhibits occupied a very large amount of space, and added considerably to the general display. Messrs. Jas. Veitch & Son, Chelsea, showed a magnificent collection of fruits, including all the kinds now in season, and staged in first-class style (Gold Medal). Messrs. T. F. Rivers & Son, Sawbridgeworth, had some well-fruited trees in pots, and some very fine fruits of Pears and Apples; also three particularly good bunches of Grapes, Black Alicante

(Gold Medal). Messrs. J. Cheal & Son, Crawley, were awarded a Silver-gilt Medal for a collection of Apples, Pears, Grapes, &c.; and Mr. Geo. Woodward, Barham Court, Maidstone, for a collection of remarkably good Peaches and Pears from the open air (a Silver Gilt Medal). Mr. Geo. Reynolds, gr. to Messrs. Rothschild, Acton, had a collection of Melons, and obtained a Silver Medal. Messrs. Geo. Bunyard & Co. also exhibited a collection of Apples and Pears in their usual style (Silver-gilt Medal). Mr. W. Iceton, Putney Park Lane, for a good quantity of well-finished Grapes, Gros Colmar, was awarded a Silver Medal. Mr. S. T. Wright, The Gardens, Glewstone Court, Ross, nine bunches of Black Alicante Grapes, very fine (Silver Medal). Mr. Jno. Watkins, Pomona Farm, Hereford, a large collection of fruit, including some cider, and ornamental Crab Apples (Silver Medal). Mr. H. Becker, Jersey, some very fine Pears (Silver Medal). Messrs. S. Spooner & Sons, Hounslow, collection of Apples (Silver Medal). Messrs. Jarman & Co., Chard, Somerset, a collection of fruit and Onions (Silver Medal); also First-class Certificate for a new and distinct Onion, Somerset Hero. Messrs. H. Lane & Son, Berkhamstead, a collection of Apples and Nuts (Silver Medal). Messrs. Chas. Lee & Son, Hammersmith, one hundred dishes of Apples (Silver-gilt Medal). The National Fruit Growers' League, St. Martin's House, Ludgate Hill, a collection of fruits (Bronze Medal). Mr. A. K. Rickwood, gr. to Lady Freake, Twickenham, forty dishes of Apples and Pears (Silver Medal). Mr. W. A. Trotter, gr. to F. Ricardo, Esq., Bromesborough Place, Ledbury, exhibited a case of English hardy fruits that he had evaporated, including Apples, Pears, Plums, Damsons, French Beans, &c.; some were conserved as well as evaporated, and the whole were exceedingly interesting, and appeared to be of equal merit with those imported (Silver Medal). Messrs. J. Peed & Son, Streatham, one hundred dishes of Apples, &c. (Bronze Medal). Mr. R. Wells, Fruit Nurseries, Crawley, collection of Apples (Bronze Medal). Mr. Bythway, Marlborough, twenty-five dishes of Apples (Bronze Medal). Mr. Ryder, Orpington, Kent, twenty-five distinct dishes of Tomatoes (Silver Medal). Mr. W. Taylor, Hampton, forty dishes of Apples; Mr. J. Miller, gr. to Lord Foley, Ruxley Lodge, Esher, ninety dishes of Apples and Pears; Mr. J. Wallis, gr. to R. Sneyd, Esq., Keele Hall, Staffordshire, some fine Peaches and a dish of Figs (Medal). Messrs. Sutton & Sons, Reading, had an immense collection of Potatoes and other dishes, which occupied two tables running the whole of the length of the annexe. About 4500 tubers, in 222 varieties, were included, and upwards of eighty seedlings, not yet in commerce (Gold Medal). Mr. C. Fidler, Reading, had another very large collection of Potatoes, including some extra large specimens of Fidler's Reading Giant (Silver Medal). Mr. H. Deverill, Banbury, had a stand of his English-grown Pedigree Onions (Silver Gilt Medal). Messrs. Harrison & Sons, Leicester, a collection of Potatoes and other vegetables (Bronze Medal). Mr. Ed. Choppins, Melton, collection of Potatoes (Silver-gilt Medal). Mr. W. Kerr, Dumfries, collection of Potatoes (Silver Medal). Messrs. W. W. Johnson & Sons, Boston, collection of Potatoes (Bronze Medal). Messrs. Vilmoren, Andrieux & Co., Paris, a collection of varieties of Celery, Endive, Dandelion, &c., of first-rate quality (Silver-gilt Medal).

Messrs. Jno. Laing & Son, Forest Hill, staged a group of Begonias, good for the season, but so clearly inferior to that staged on the last occasion, as to remind us vividly of the approaching winter (Mr. Laing has exhibited Begonias from April to October); also a collection of fruit (Gold Medal).

Mr. Chas. Turner, Slough, a collection of Helianthus, Asters, Anemones, &c. (Silver Medal).

Messrs. B. S. Williams & Son, Upper Holloway, a group of well-grown foliage plants, Crotons, &c. Mr. H. Wrede, Luneberg, Germany, a collection of Violas and Pansies (Silver Medal).

Messrs. E. D. Shuttleworth & Co., a group of herbaceous flowers, &c.; also a group of ornamental foliage plants (Silver Gilt Medal).

Messrs. H. Cannell & Sons, Swanley, blooms of Begonias and Pelargoniums (Bronze Medal). Mr. W. Wells, Earlswood, Redhill, collection of Chrysanthemum blooms (Bronze Medal). Mr. J. R. Chard, Stoke Newington, a table arranged for effect (Silver Medal). Messrs. Perkins & Sons, Coventry, some blooms of Cactus Dahlias, Matchless, a dark crimson variety, with petals having as good form as the old Juarezii, was awarded a First-class Certificate. Messrs. Barr &

Son, Covent Garden, a group of herbaceous flowers (Silver Medal). Messrs. W. Barron & Son, Borrowash, near Derby, cut sprays of ornamental trees and shrubs (Silver Medal). Mr. Geo. Wythes, gr. to the Duke of Northumberland, Syon House, staged a nice group of foliage plants and Chrysanthemums (Silver Medal). Messrs. Wm. Paul & Sons, Waltham Cross, a collection of Roses, Fruits, &c. (Silver-gilt Medal).

EALING DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

SEPTEMBER 27.—The annual meeting of this society was held on the evening of the above date, when the annual report and balance sheet were read, and the officers and committee appointed for the ensuing year. The report of the committee states that, although the balance in hands of treasurer is not quite so large as last year, the weekly meetings during the past year were well attended, and the papers read were up to the standard of excellence, and the exhibits by members at the weekly meetings far exceeded those of previous years. The society is greatly indebted to gentlemen residing in the neighbourhood for papers contributed, and prizes given for essays. The president is E. M. Nelson, Esq.; the chairman, G. F. Nixon, Esq. Papers for the coming session are promised by Messrs. G. Gordon, R. Dean, J. Hudson, G. Wythes, E. Cook, and others. Prizes for essays are offered by Mr. R. Dean, R. Dawes, Esq., and C. Jones, Esq.

DEVON AND EXETER GARDENERS' ASSOCIATION.

SEPTEMBER 28.—The annual meeting of the Devon and Exeter Gardeners' Association was held at the Guildhall, on the above date. The President, Mr. C. T. K. Roberts, presided. The Chairman said he thought they might congratulate themselves on the success which the Society had attained during last year; and he trusted it was but an augury of greater success. He had pleasure in moving that Mr. Lethbridge, of Courtlands, be elected as President for the ensuing year. Mr. A. Hope seconded the motion, which was carried unanimously. The following were elected Vice-Presidents of the Society:—Rev. Dr. Dangar, Rev. A. H. Cruwys, Major Tracey, Lieut. Smith, Mr. R. N. G. Baker, Mr. J. D. Cann, Mr. R. M. Daw, Mr. H. C. Lloyd, Mr. H. Michelmore, Mr. Ed. Sanders, Mr. T. M. Snow, Mr. H. D. Thomas, Mr. P. C. M. Veitch. Mr. Hope remarked that the excursion recently held was so successful that it would probably be held again next year. A programme had been drawn up for the session ending at Christmas. For the following Spring Session, Dr. Dangar had promised to read a paper on "Insects which are Destructive to Fruit Crops." The Society had made an application to the County Council for a grant towards promoting technical education in gardening. He had received a letter from the clerk to the County Council acknowledging the receipt of the application. Mr. Hope believed the Society had several good friends on the Council, who would assist them if possible. It was a much debated question whether the course which the Society suggested, namely, that of having lectures on gardening, was not exploded. That, however, was a matter for the consideration of the County Council. Whether the Society succeeded in getting the grant or not, it would certainly call attention to the Society as being the best medium for disseminating technical knowledge on horticultural subjects. At one of the Society Committee meetings a representation was made that some men were members who were not gardeners. They were railway men and others who had garden plots, which they worked themselves. The Committee thought it would be hard to exclude anyone who wished to join, and they decided to admit the men at the same rate as the gardeners. It had been suggested that a spring flower show should be held under the auspices of the Society next March, confined to members, and that no prizes should be given. They did not desire to enter into competition with any existing institution, such as the Devon and Exeter Horticultural Society, which they all wished to see flourishing. In the absence of Mr. Andrews, Mr. Bartlett moved that the show be held in March. The motion having been seconded, the Chairman thought that before deciding upon holding the show the members should have before them some details as to the probable expense. He did not wish to throw cold water on the idea, but it was certainly a matter that required great consideration before the

Society committed itself to it. On October 5, Mr. McCormick read a paper on "Grape Vines, and their Cultivation."

PRESTON FLORAL.

OCTOBER 1.—There was a large attendance at the first monthly competition in connection with the Preston and Fulwood Floral and Horticultural Society held on Saturday. There was a fine display of flowers and fruit. The 1st prize went to Lord Lathom's gardener, and the 2nd was carried off by Richard Frisby, gr. to Miss Harington. There were also prizes for the best bunch of Grapes. The winner of the 1st preferred to be anonymous, and the 2nd went to Lord Lathom. At the meeting held subsequently a paper on the "Cultivation of the Fuchsia" was read by Mr. Roberts, gr. to Mrs. Townley Parker, Caerden Hall. The essayist traced the history of the flower in an interesting fashion, and gave some practical hints as to its cultivation. A hearty vote of thanks was accorded Mr. Roberts at the close. The display of fruit and flowers at the gathering was equal to many a show.

Obituary.

CHARLES HENRY SHARMAN.—We greatly regret to have to record the death, on Sept. 30, of Mr. Sharman in the fifty-first year of his age. Mr. Sharman had been for many years manager for Messrs. Jas. Carter & Co. of Holborn. His zeal and energy elicited respect, and his geniality inspired a feeling of warm regard among those with whom he came in contact. He was zealous not only in the service of his employers, but eager to promote the advance of horticulture and the welfare of its practitioners. Thus, in addition to the ordinary managerial duties in a large seed house, he had the direction of the nursery at Forest Hill, and of the trial grounds in connection with them. He was thoroughly imbued with the notion that the processes that the florist adopts for the improvement of flowers should be acted on in the amelioration of farm crops and of the produce of the market-garden. With this view he instituted and supervised those experiments on the cross-breeding of cereals which have been so successful, and it was only in a recent number that we had occasion to chronicle the success of the experiments carried out under his directions at Bromley with the view of testing the value of the copper-mixture in the prevention and mitigation of the Potato disease. Mr. Sharman had suffered from some brain affection for some time, and though he had partially recovered, his friends saw that his health had been seriously impaired. Though retaining much of his old brightness of manner, he was no longer capable of the prolonged exertion which he formerly thought light of. It is almost needless to say of so good-hearted a man, that he did not overlook the claims of the infirm and the helpless, and that he was an active worker for our horticultural charities. We believe that the very first cheque which was paid into the Gardeners' Orphan Fund on its institution came through his hands. With an expression of satisfaction he told us this circumstance on the last occasion when we saw him, and we do not think we can close our notice with a worthier tribute to his memory than to say that amid his busy career he thought of the sick and needy.

MR. WILLIAM STEELL, the well known nurseryman of Kew Road, Richmond, Surrey, passed away quietly on the afternoon of the 3rd inst., at the age of 78 years. Like his elder brother George, whom he only survived 15 months, he was born in Richmond and lived there all his life, and like him was a quiet, kindly and honourable man, highly respected by all his numerous friends and neighbours.

VARIORUM.

MR. JAY GOULD, the American millionaire, has a passion for horticulture, and at his country residence on the banks of the Hudson River he has a collection of plants and flowers which cost him

many hundreds of thousands of dollars. Mr. Gould has recently given an order to an American firm for an additional conservatory, the existing glass-houses being inadequate. The price to be paid for the new conservatory is estimated at 100,000 dols., equal in English money to about £20,000.

COTTON-SEED SUGAR.—Sugar from the Cotton plant would seem to be a thing scarcely to have been dreamt of, yet on the authority of a British trade journal, quoted in a recent report on the cultivation of Cotton in Zanzibar, we read the following:—"The latest reported discovery in connection with Cotton seed comes from Germany, where it is said a process has been discovered for extracting sugar from Cotton seed meal; the sugar is of a superior grade, but cannot be sold in competition with the ordinary article. It is said to be inclined to ferment or sour, and hence better in use for preserving fruits. It is described as being fifteen times sweeter than cane sugar, and twenty times more so than sugar made from Beets." Another use to which Cotton seed has recently been found applicable is for making felt from the lint which clings to the seed after it has gone through the "gin." The cloth, it is said, will come into wide use for hats, &c., as the process is inexpensive, and the material has hitherto been counted waste.

THE GINGER BEER PLANT.

PROF. MARSHALL WARD has made an elaborate study of the "substance or structure popularly known in many parts of the country as the ginger-beer plant, from its association with the domestic manufacture of the well-known summer beverage so often purchased in villages and towns in various parts of the British Isles, where it is usually put up in brown stone bottles with tied corks"! It can hardly be supposed that even the Fellows of the Royal Society are ignorant of these facts, so it must be concluded that the passage in question is intended for the intelligent foreign reader of the *Philosophical Transactions*. The general nature of the substance, and its use in effecting the fermentation of saccharine solutions to which ginger has been added, have long been known, but no definite knowledge of the plant had been obtained, and curiously enough no record of its history and introduction into this country. Professor Ward, with infinite patience, has succeeded in showing that the "plant" is really a compound of a yeast and of a bacterium. These are mixed with other organisms, so that to ascertain what was the office of each, somewhere about two thousand cultures, each extending over periods varying from a few days to two years, had to be undertaken. Of these numerous organisms two only are essential to the constitution of the ginger-beer plant, the rest being adventitiously present. The one organism is a mould such as appears in sour beer, the other the bacterium which forms the principal constituent of the vinegar-plant. Essential or adventitious, the organisms were isolated, cultivated and experimented upon with great care and thoroughness, so that the whole research was one of the greatest scientific importance. The results are rendered certain by the circumstance that Professor WARD has not only investigated the life-history of each organism singly, but by synthetic methods, bringing together the yeast and the bacterium, has succeeded in producing the ginger-beer plant. The yeast is probably derived from the sugar, the bacterium from the ginger. The study of the "sympiotic fermentations" occasioned by these organisms, is one of extreme importance in reference to many epidemic diseases, so that Professor Ward may be congratulated on what he has accomplished as a physiologist, and for the probable bearing of his researches on the progress of our knowledge of many diseases.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending October 1.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
		Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 3, 1892.	Below 42°, difference from Mean since Jan. 3, 1892.					
0	3 —	34	4	— 269	+ 219	8 +	188	35.6	15	27
1	3 —	40	3	— 253	+ 244	2 +	148	20.1	28	32
2	1 —	59	0	— 140	+ 186	1 +	145	18.2	37	31
3	1 —	71	0	— 120	+ 209	11 +	131	18.3	40	38
4	1 —	61	0	— 108	+ 247	3 +	128	17.4	37	35
5	0 aver	85	0	— 85	+ 138	9 +	113	15.9	26	41
6	2 —	46	0	— 152	+ 193	10 +	149	33.6	27	34
7	1 —	63	0	— 91	+ 165	8 +	149	26.6	29	34
8	2 —	69	0	— 50	+ 117	12 +	135	21.0	29	41
9	2 —	52	0	— 120	+ 122	7 +	164	28.0	34	31
10	3 —	60	0	— 42	+ 132	4 +	144	28.6	41	34
"	0 aver	104	0	+ 80	+ 42	8 +	132	19.3	35	49

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; ("Channel Islands.")

THE PAST WEEK.

THE following summary record of the weather for the week ending October 1, is furnished from the Meteorological Office:—

"The weather during this week has become cold, wet, and very unsettled, and the air raw; sharp ground frosts have occurred at times. Thunderstorms have occurred very frequently, and in almost all parts of the Kingdom.

"The temperature has been below its mean value in all districts, excepting 'England, S.' and the 'Channel Islands'; the deficiency being greatest in Scotland and Ireland, where it ranged from 2° to 3°. The highest of the maxima occurred during the first three days, and ranged from only 58° in 'Scotland, N.' to 64° or 65° in the north of England, and to 68° over our Midland, Eastern, and Southern counties. The lowest of the minima occurred on Friday or Saturday, when the thermometer went down to 28° in 'Scotland, E.', 30° in 'Scotland, N.', and 33° over our 'Midland Counties' and 'England, S.W.' In the 'Channel Islands,' however, the minimum was only 48°.

"The rainfall was in excess everywhere; in 'England, S.W.' the excess was 1.2 inch; in 'Scotland, W.', 1.0 inch, and in 'Scotland, N.', 'England, N.W.', and the 'Channel Islands,' 0.8 inch; while in 'England, N.E.' the excess was only 0.1 inch.

"The bright sunshine was in excess of the mean over Ireland and the North-eastern, Eastern, and Midland parts of Great Britain, but slightly deficient elsewhere. The largest number of hours recorded were 34 in 'Ireland, S.' and 33 in 'England, E.', while the smallest were 12 in 'Scotland, N.' The greatest excess was 9 hours in 'Ireland, S.', while the greatest deficiency was 6 to 7 hours in the southern and south-western parts of England."

PROFESSOR HUXLEY is the hero of more witty stories than any other living man of science, and when somebody puts together a good Huxleyana, the world's stock of cheerfulness will be considerably increased. A fairly good story is handed down by his students, which records an answer he gave to one of them who made the following inquiry:—"May I ask, sir, what is the best book on comparative anatomy?" "There isn't one," was the Professor's reply. "But," remarked the astonished student, "you have written one yourself." "True, and it's as bad as the others."

MARKETS.

COVENT GARDEN, October 6.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. ED.]

TRADE dull. Cobbs easier. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 1 0-3 6	Melons, each ... 0 6-1 3
Grapes, per lb. ... 0 6-1 6	Peaches, per doz. ... 2 0-6 0
Kent Filberts, per 100 lb. ... 75 0 80 0	Pine-apples, St. Michael ... 4 0-6 0
Lemons, per case ... 15 0-35 0	Plums, p. half-sieve 2 0-4 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Ferns, per 100 ... 5 0-8 0
Aspidistra, per doz. 15 0-30 0	Ficus elastica, each 1 6-7 6
— specimen, each 7 6-21 0	Fuchsia, per doz. ... 3 0-6 0
Asters, per doz. ... 6 0 12 0	Heliotrope, per doz. 3 0-6 0
Begonia, per doz. ... 6 0-12 0	Lilium, various, doz. 18 0-30 0
Chrysanthemums, p. doz. ... 4 0-12 0	Marguerite, per doz. 6 0-12 0
— large plants, ea. 1 6-2 0	Mignonette, doz. pots 6 0-12 0
Coleus, per doz. ... 3 0-6 0	Palms, various, each 2 0-10 0
Cyperus, per dozen 4 0-10 0	— specimens, each 10 6-84 0
Dracæna, each ... 1 0-5 0	Pelargonium, scarlet, p. doz. ... 2 0-4 0
Ferns, various, doz. 4 0-9 0	Solanums, per doz. 9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 3 0-6 0	Orchids:—
Asters, p. doz. bun. 4 0-9 0	Cattleya, 12 blms. 6 0-12 0
Carnations, 12 blms. 1 0-2 0	Odontoglossum crispum, 12 blms. 2 0-8 0
Chrysanthemums, p. doz. blooms 0 6-2 6	Pausias ... 1 0-2 0
— p. doz. bunches 3 0-9 0	Pelargonium, scarlet, per 12 bun. 2 6-4 0
Eucharis, per dozen 3 0-5 0	— 12 sprays ... 0 6-1 0
Gardenia, per dozen 1 6-3 0	Primula, double ... 4 0-6 0
Gladiolus, per dozen spikes ... 1 0-2 0	Pyrethrum ... 2 0-4 0
Heliotrope, per doz. sprays ... 0 3-0 6	Roses, Tea, per dozen 1 0-2 0
Lilium Harrisii, doz. 3 0-6 0	— coloured, dozen 1 0-1 6
— various, doz. 1 0-3 0	— yellow (Maréchal), per doz. 2 0-5 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— red, per dozen ... 1 0-2 0
Marguerite, per doz. bunches ... 3 0-4 0	— outdoor, 12 bun. 4 0-8 0
Mignonette, 12 bun. 2 0-4 0	Stephanotis, 12 sprays 2 0-4 0

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-
Beans, French, lb. ... 2 6-3 0	Mustard and Cress, punnet ... 0 4-
Beet, red, per dozen 2 0-3 0	Parsley per bunch ... 0 3-0 6
Carrots, per bunch ... 0 4-0 6	Shallots, per lb. ... 0 6-
Cauliflowers, each 0 3-0 6	Spinach, per bushel 3 6-
Cucumbers, each 0 4-0 8	Tomatoes, per lb. ... 0 4-0 9
Endive, per dozen 2 0-3 0	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

Market remains about same as last week. Arrivals not quite so heavy. Prices about same. *J. B. Thomas.*

SEEDS.

LONDON: Oct. 5.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that to-day's market presented no striking or novel feature. The supply of Trifolium has come to an end. Winter Tares keep scarce, and the demand being brisk, full prices are realised. Sowing Rye continues good and cheap. The prices asked for new Clover Seeds are much above the views of buyers. In Rye-Grasses the tendency is upwards. Canary Seed is distinctly firmer; Turkish samples are realising 80s. per qr., both in Liverpool and London; the shipping demand for this article has lately much improved. For Peas and H-rickets, the sale is slow; Millet, Buckwheat, and Dari keep steady.

FRUITS AND VEGETABLES.

BOROUGH: Oct. 4.—Moderate supply of green produce, and a quiet trade with steady prices. Quotations:—Cabbages, 2s. 6d. to 3s. 6d.; Marrows, 8s. 6d. to 4s. per tally; Cauli-

flowers, 1s. 6d. to 1s. 9d. per dozen; Lettuces, 6d. to 1s. per score; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 2s. per dozen bunches; English Onions, 4s. to 4s. 6d. per cwt.; Horseradish, English, 2s. 6d.; foreign do., 1s. 6d. to 2s. per bundle; English Apples, 2s. 6d. to 5s. per bushel.

SPITALFIELDS: Oct. 4.—Supplies of all kinds good; trade generally slow. Quotations:—Vegetables: Beetroot, 1s. 9d. to 2s.; Scarlet Beans, 2s. to 3s. 6d.; Spinach, 1s. 6d. to 2s. per bushel; Seakale, 10d. to 1s. per punnet; Cabbages, 3s. to 6s.; Cauliflowers, 3s. to 6s. 6d.; Vegetable Marrows, 3s. to 6s. 6d. per tally; Parsley, 1s. to 1s. 6d.; Onions, 2s. to 3s.; Carrots, 1s. 6d. to 3s.; Turnips, 2s. to 3s. per dozen bunches; frame Cucumbers, 2s. to 3s.; natural do., 9d. to 1s.; Leeks, 2s. to 3s.; Cabbage Lettuces, 3d. to 8d. per dozen; Horseradish, 1s. to 1s. 2d.; Celery, 10d. to 1s. per bundle; Spanish Onions, 5s. 3d. to 6s. per case; Dutch do., 2s. 9d. to 3s. 9d.; Belgian do., 2s. 9d. to 3s. 6d. per bag of 110 lb.; Brussels Sprouts, 1s. 6d. to 2s. 6d. per half-sieve. Fruit: English Apples, 2s. 9d. to 6s. 6d. per bushel; American do., 10s. 6d. to 18s. per barrel; English Tomatoes, 4s. to 5s. per peck; foreign do., 1s. 6d. to 2s. per box; Pears, 2s. 6d. to 5s.; Victoria Plums, 3s. 6d. to 4s. 6d.; Damsons, 3s. 6d. to 4s.; Billances, 2s. to 2s. 6d. per half-sieve.

STRATFORD, Oct. 4.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done at the undermentioned quotations:—Cabbages, 2s. 6d. to 4s. per tally; Greens, 2s. to 2s. 6d. per dozen bunches; Cauliflowers, 1s. to 1s. 6d. per dozen; do., 4s. to 5s. per tally; Turnips, 1s. 6d. to 2s. per dozen bunches; do., 30s. to 50s. per ton; Carrots, household, 35s. to 40s. per ton; do., cattle feeding, 25s. to 3's. do.; Parsnips, 2s. 6d. to 3s. per cwt.; Mangolds, 15s. to 19s. per ton; Swedes, 20s. to 27s. 6d. do.; Onions, Dutch, 4s. to 4s. 6d. per bag; do., Portuguese, 5s. 6d. to 6s. per case; Apples, English, 2s. 6d. to 5s. 6d. per bushel; do., American, 12s. to 14s. per barrel; Potatoes, Beauty of Hebron, 55s. to 65s. per ton.

FARRINGTON: Oct. 5.—Quotations:—Onions, Spanish, 5s. 6d. per case; Celery, 10s. per dozen rows; Turnips, per bag, 50s. to 60s. per ton; Cauliflowers, 6s. per tally; Cabbage, 5s. to 5s. 6d. do.; Pears, Callipast, 7s. per bushel; Apples, King Pippins, 4s. 6d. do.; good cooking, 4s. 6d. do.; Grapes, white Lisbon, 12s. per box.

POTATOS.

BOROUGH: Oct. 4.—Quotations:—English Magnum Bonums, 40s. to 60s.; Hebrons, 40s. to 60s.; Snowdrops, 50s. to 80s. per ton.

SPITALFIELDS: Oct. 4.—Quotations:—Snowdrops, 65s. to 80s.; Sutton's Abundance, 50s. to 60s.; Fillingbasket, 50s. to 60s.; Reading Wonders, 50s. to 55s.; Bruce Magnums, 50s. to 60s.; Early Rose, 50s. to 55s.; Hebron, 50s. to 70s.; Imperators, 45s. to 60s.; Magnums, 45s. to 60s.; Sutton's Early, 45s. to 60s. per ton.

STRATFORD: Oct. 4.—Quotations:—Dark land, 40s. to 50s.; light do., 50s. to 70s.; Imperators, 50s. to 65s.; Sutton's Abundance, 55s. to 65s. per ton.

GENERAL AVERAGES: Oct. 5.—Snowdrops, 60s. to 80s.; Hebrons, 50s. to 75s.; Magnums, 40s. to 60s.; Kidneys, 55s. to 65s.; Imperators, 50s. to 60s.; Early Rose, 50s. to 60s. per ton.

FARRINGTON: Oct. 5.—Quotations:—English Magnums, 60s. to 65s.; Snowdrops, 65s. to 70s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 112s.; do., inferior, 46s. to 75s.; Hay, best, 60s. to 107s.; do., inferior, 26s. to 50s.; and Straw, 20s. to 40s. per load.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (bushel) for the week ending October 1, and for the corresponding period last year:—1892: Wheat, 27s. 10d.; Barley, 27s. 11d.; Oats, 18s. 0d. 1891: Wheat, 31s. 4d.; Barley, 28s. 10d.; Oats, 18s. 5d.

NOTICES TO CORRESPONDENTS.

* * PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

BOOKS: *W. T. A Manual of Injurious Insects, with Methods of Prevention and Remedy*, by Miss Ormerod. Second edition. (Simpkin, Marshall & Co.)

CORRECTION: In report of Cheltenham Show in our last issue, Mr. J. Clear was stated to have exhibited for Lord Sudeley. It should have been Mr. D. Sheppard, another of Lord Sudeley's head gardeners.

CUTTING AND ROLLING TURF READY FOR RELAYING: *P. P. P.* The number would vary from 100 per hour in light land, free from stones, to 40 or 50 per hour in clayey, hard soil; and with stones in it, the number would not average 30. You would want in heavy or stony land, an assistant to pull the tool whilst the other man shoves and guides it, and another to pile it ready for the carts. We do not know what the wages are that you pay for ordinary labour in your district. In 1 acre, there are 14,520 turves 1 yard long and 1 foot wide. Squares of 1 foot are much handier; they do not break much, not being rolled up, and are as soon laid down as the former. The cost of relaying turf, exclusive of carting, would be about one-half the price of cutting. But much always depends on the celerity of the workmen.

FUNGUS: *W. T.* The fungus you send is the dry-rot fungus, *Merulius lachrymans*. You must take up and burn the flooring boards, remove the soil beneath, and fill up with lime or cement. Take care there is sufficient ventilation.

MILDEW ON NECTARINES: *J. D.* The locality is, owing to some cause not suitable to their culture, or management of the tree, is wrong. Another season you should apply early some one of the many remedies for fungous-moulds mentioned in these pages.

MUSCAT GRAPES: *W. B.* The Grapes sent show that the vines are still capable of producing fine berries and bunches, but they are shanking very badly. It may be from the over-cropping, as you suggest, or from the roots having reached an unsuitable soil, or a depth where the sun's heat is little felt, or where the air cannot penetrate. Examine the roots as soon as you conveniently can, bringing them up if deep in the soil, affording them some new soil, and making sure that the drainage of the border and adjacent land is what it ought to be.

NAMES OF FRUIT: *J. L.* 1, King of the Pippins; 3, Dumelow's Seedling; 4, Yellow Ingestre; 5, Jefferson; 6, Hoary morning.—*H. D.* 1, Duchesse de d'Angoulême; 2, Beurré d'Amanlis; 4 (?), Marie Louise; 5, Easter Beurré. One Plum half rotten, and the two Crabs cannot be identified.—*W. B. G.* 1, Warner's King; 2, Gloria Mundi; 3, Hambleton Deux-ans; 4, Hoary morning; 5, Gravenstein; 6, Hanwell Souring.—*W. Parkins.* 1, Scarlet Nonpareil; 3, Sturmer Pippin; 4, Yorkshire Beauty; 6, Spice Apple; 8, Northern Greening, Pear Swan's Egg.—*J. E.* 1, King of the Pippins; 2, Red Astrachan.—*J. B. Jones.* Pear Brockworth Park.

NAMES OF PLANTS: *F. H. Stanway.* 1, Picea Morinda, 2, *Æsculus flava*, probably (cannot name with certainty from leaves only); 4, *Tilia platyphylla* var. *asplenifolia*; 5, *Fraxinus americana*; 6, *Pyrus pinnatifida*.—*J. Q.* 1, *Pinus strobus*; 2, *P. Pinaster* var.; 3, *P. ponderosa*; 4, *P. Pinaster*; 5, *P. montana* (pumilo); 6, *Picea excelsa*, common Spruce; 7, *Pinus Pinaster* var.; 8, *P. Pinaster* var.; 9, *P. Pinaster* var.; 10, *P. Laricio* var. *Pallasiana*; 11, *P. Laricio* var. *austriaca*; 12, *P. Laricio* var. *austriaca*; detached cone *P. ponderosa*.—*Somers.* 1, *Panicum plicatum*; 2, *Cyperus Meyenianus*.—*W. H. H.* *Datura Stramonium*, Thorn Apple, Solanaceæ, poison.—*G. O.* *Passiflora corleua*, probably from the leaf (*Passiflora*, from South Brazil).—*R. S.* *Euphorbia Cyparissias* (*Euphorbiad*, native of Switzerland).—*W.* 1, *Solidago canadensis* (Composite); 2, *Pyrethrum lacustre* (Composite); 3, *Leycesteria formosa* (Caprifoliad); 4, *Antennaria margaritacea* (Composite); 5, *Pyrethrum uliginosum* (Composite); 6, *Aster novi-belgii roseus* (Composite).—*G. H.* 1, *Ailanthus glandulosa* (China, *Xanthoxylaceæ*); 2, *Pavia macrostachya* (Sapindad); 3, *Abies nigra* (Conifer, from N.E. United States); 4, *Cupressus*, perhaps *torulosa*; cannot tell from foliage only; 5, *Cotoneaster Simonsi*, probably (Rosad, Nepal); 6, *Rosa Banksia* (China, Rosad); 7, *Escallonia macrantha* (Chili, Escalloniad); 8, *Calycanthus occidentalis* (Calycanth, from California).—*T. W. R.* 2, 3, 4. We believe they are all forms of *Cratægus Crus-galli*.—*Nash.* 1, *Thuja filifera*; 3, Fern-leaved Beech; 4, *Bambusa Metake*; 5, *Zelkova crenata*; 6, *Acer campestre*; 7, *Berberis vulgaris*; 11, *Tradescantia discolor*; 12, *Pteris aquilina*. Without numbers. *Gleditsia triacanthos*, *Chrysanthemum coronarium*.—*H. G.* Both varieties of *Odontoglossum Lindleyanum*.—*J. Moore.* 51, *Athyrium f.-f. corymbiferum*; 61, *A. f.-f. cruciata-cristatum*; 16, *Polystichum angulare*.

proliferum; 21, P. a. depauperatum; 31, Lomaria (Blechnum) Spicant; 17, Polystichum acrostichoides.—P. & Sons. Ficus australis, probably, you should send a shoot, not a leaf merely.

PEACH DISEASE: Hibernia. What you send is what, for want of a better name, we have called silver-leaf disease. It is very destructive; but the best chance is to cut the tree hard back, and when it begins to push, give it judicious high-feeding.

PLANTS FOR A VERY DRY BORDER FULL OF IVY ROOTS: Perplexed one. A variety of succulents might be tried, as Sedum Ewersii, S. Sieboldii, S. spurium, Sedum acre, and the golden variety of it, S. Nevii, S. dasyphyllum, S. brevifolium, and others. Sempervivum arenarium, S. arachnoideum, S. tectorum the common species of Houseleek, and many others. These and Thymus Serpyllum, and T. lanuginosus, Vinca minor, Plumbago Larpentæ, Polygonum affine, P. complexum, might form a ground work, and in this might be planted in pots or other receptacle sunk in the ground tuberous Begonias, Begonia discolor, Balsams, Calendulas, Marygolds, Clematis, Panicum sulcatum, Aloes, Agaves, Gypsophila paniculata, Gladiolus, German Asters, Pelargoniums, Lilies, &c.

SEEDLING APPLE: G. S. There are many early varieties much better.

TEA, CURRANTS, &c.; Debate. Enquire at the Board of Trade, Whitehall.

TWIN VIOLET: J. B. J. Not very unusual. No doubt by patient selection you could fix the strain, but it would probably take up much time.

VIOLETS IN FRAMES IN LONDON: Cigarette. The plants should have been prepared from simple rooted runners, planted out in fairly good ground in April, and kept clean by hoeing, and have had all runners cut off them from time to time. If you have such plants, make up a common garden frame by making a foundation wall of dry bricks, on which to stand it; fill in the frame with coal-ash or anything hard, yet fairly close and solid, leaving space for a depth of 6 inches of light soil, consisting of loam and leaf mould in equal parts, and a space of 6 inches above that to the glass. Plant firmly about 10 inches apart, and keep the frame close for a week; afterwards giving as much air as the weather will permit, avoiding giving air when it is frosty. The frame should face due south, and have a fairly steep pitch, so as to catch every ray of sunlight. To keep out frost, make a thick lining of spent stable litter, say 1½ foot thick, and as high as the frame, and when it sinks add more. A covering of mats is required all the winter, and in hard weather some litter as well. See *Gardeners' Chronicle*, Feb. 27, 1886, p. 270.

WEIGHT OF TOMATOS IN A SPAN-ROOFED HOUSE 14 BY 50 FEET: Tomato. The plants might be arranged at a distance of 2 feet apart on either side, planting them in narrow trough-like border, made of boards, say 1 foot wide and 9 inches deep, and training the stems close up under the roof. That would give 50 plants, and these at 12 lb. of fruit a piece would give a total of 600 lb. weight for one set of plants—those that fruit in spring and summer. Another mode of planting would be to plant nine plants near the side at 6 feet apart, the stems to be trained as single cordons on wires, running just beneath the roof, and between this row and the centre path, plant two rows of sixteen plants in a row, that is at 3 feet from one to the other. These plants to be trained to erect stakes. This method of planting would give forty-one plants on each bed; and total produce on the two beds 41×2×10=820 lb., or if the eighteen roof plants gave 12 lb., the quantity would be 856 lb. It would be necessary to obtain a heavy cropping variety, such as the Old Red or a strain from it, or Carter's Orange Perfection.

COMMUNICATIONS RECEIVED.—Mrs. E. T. Royle, Chicago.—J. Carter & Co.—M. Foster.—A. Hope.—J. Melville.—C. H. M. C.—Comte de K. Ghent.—G. W.—W. J. Zupphen.—W. T. H. C., Geneva.—R. D.—Professor Beal, Michigan.—Dobbie & Co.—Merryweather & Sons.—Ransome, Sims & Jeffries.—J. E. J.—R. C.—W. K.—N. E. B.—H. W. W.—E. M.—J. E.—O. D.—S. P. O.—W. E. G.—M. C.—E. L. Taplin, Chicago.—G. W.—Dr. Kränzin.—D. McD.—T. S. Jersey.—J. H. Heathman.—S. E.—C. T. D.—R. E.—T. W.—E. D.—W. M. B.—G. G.—J. B.—J. J. W.—A. E. T.—E. M.—C. G. Hurst.—G. Steele.—Alpha.—Paddy from Cork.—W. W.—Reginald.—T. S.—E. B.—D. & Co.—T. R.—R. Morrow.—Ch. de B.—J. W.—M. D.—T. Meeham, Philadelphia.—O. H. M. C.

PHOTOGRAPHS RECEIVED.—C. H. M. C. (with many thanks).—P. W. (with many thanks).

SPECIMENS RECEIVED.—Canon E. (with thanks).

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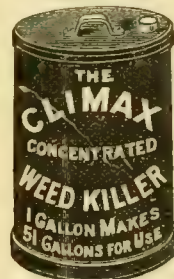
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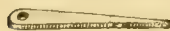
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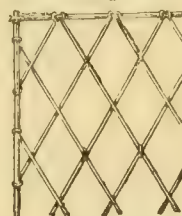
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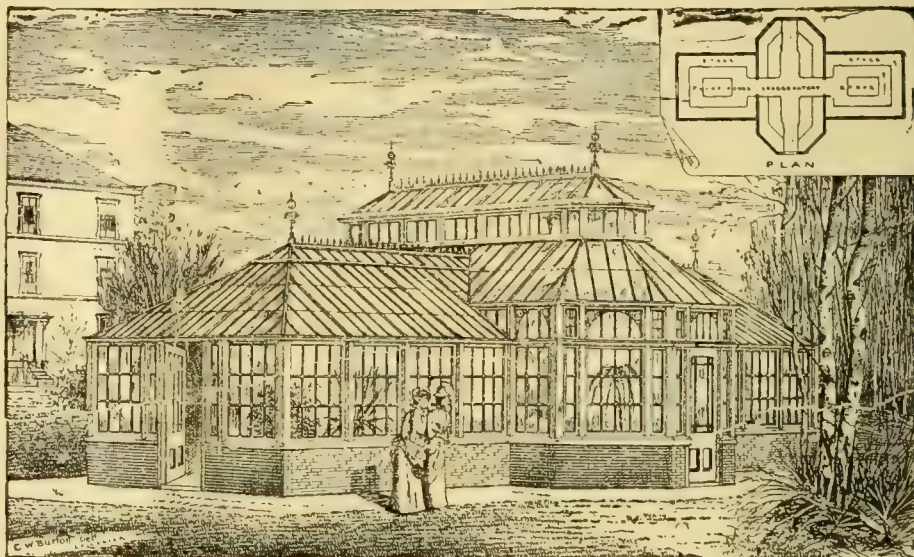
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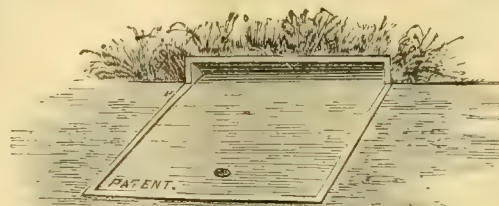
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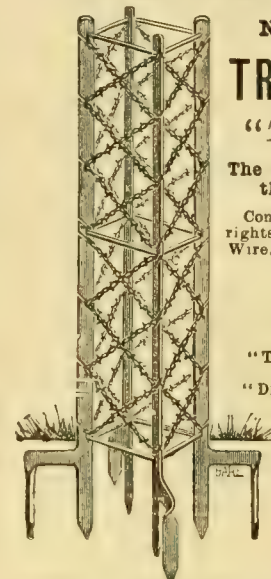
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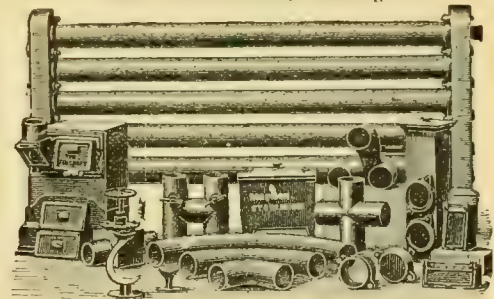
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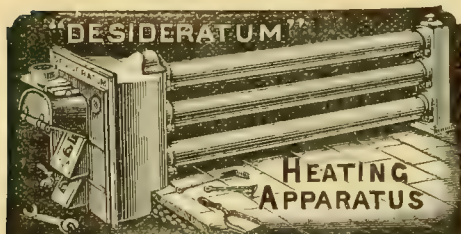
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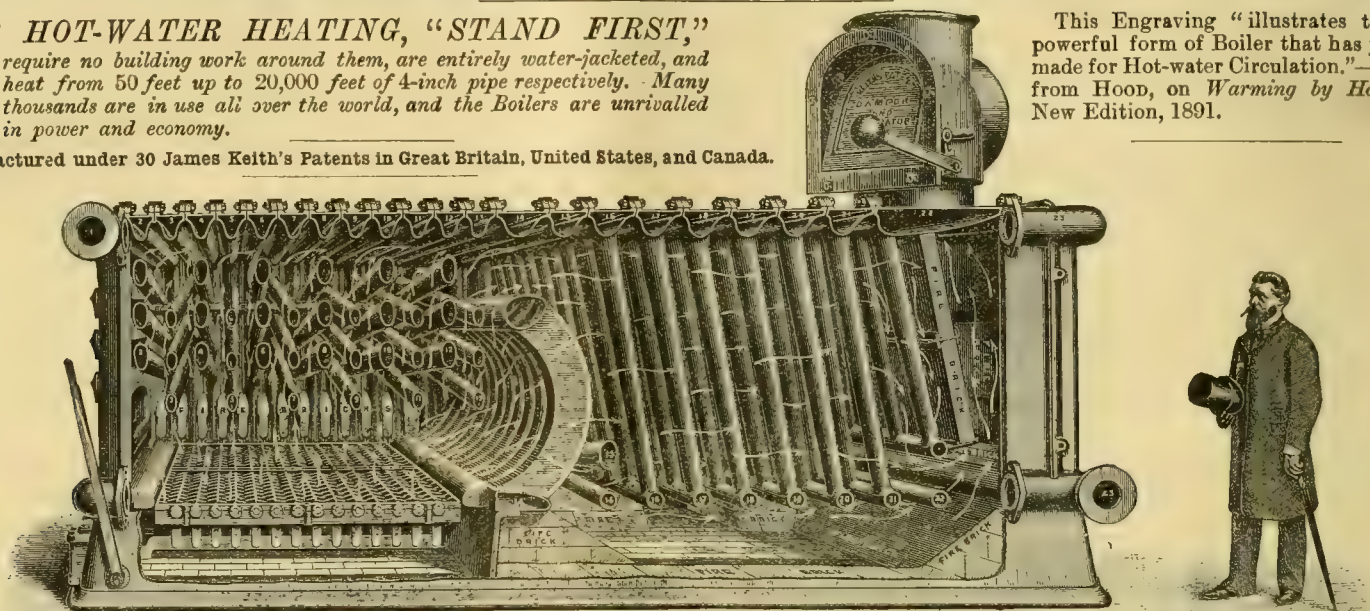
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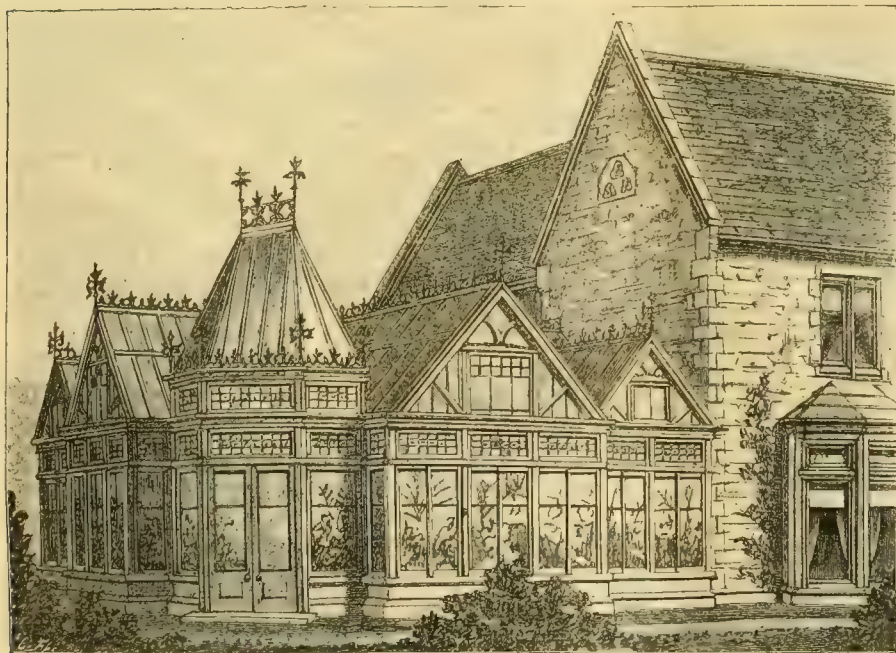


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The stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Monday Next.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY NEXT**, October 17, at 12 o'clock, 100 AZALEA INDICA, 100 A. MOLLE, DRACENA RUBRA, ARAUCARIA EXCELSA, 75 FICUS ELASTICA from Belgium, beautiful HARDY CLIMBERS, ornamental STOVE and GREENHOUSE PLANTS, choice STOVE and GREENHOUSE FERNS, hardy border PLANTS and BULBS, &c.

On view morning of Sale, and Catalogues had.

Havant.—Absolute Clearance Sale.

FINAL PORTION OF THE WELL-GROWN NURSERY STOCK, by order of Messrs. Ewing & Co., who are relinquishing the business.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Sea View Nurseries, Havant, close to the Havant Station, on **TUESDAY NEXT**, October 18, at 12 o'clock precisely, without the least reserve, 5000 ORNAMENTAL, FLOWERING, and FOLIAGE TREES, a specialty at these Nurseries; 5000 Conifers and Evergreen Shrubs, in various sizes; 5000 Standard and Dwarf roses, a few thousand Seedling Briar, Manetti, and Rose Stocks; 2000 Standard and Pyramid Fruit Trees, 2000 Currants and Gooseberries, 3000 hardy Climbing Plants, in and out of pots; thousands of small Conifers and other Stock, for growing on; Stools and Stock Plants of Roses, Ivies, Limes, Planes, &c.; Greenhouse Plants, Palms, Ferns, Azaleas, Camellias, Garden Frames and Lights, Flower-pots, &c.

On view one week prior to Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The FREEHOLD NURSERY to be SOLD. Particulars of the Auctioneers.

Tuesday Next.

IMPORTED by Messrs. WALTER KEMSLEY and CO., 147, Leadenhall Street, E.C.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **TUESDAY**, October 18, at half-past 12 o'clock, a grand Importation of

500 PHALENOPSIS GRANDIFLORA AUREA, magnificent pieces in splendid condition, the plants being perfectly fresh and full of young roots.

500 PLANTS of a NEW SPECIES CYPRIPEDIUM, 200 CYPRIPEDIUM STONEI, the true Stonei, 700 SACCOLABIUM GIGANTEUM ILLUSTRE, and VIOLACEUM HARRISONIANUM.

On view morning of Sale, and Catalogues had.

Hackney.—Absolute Sale.—Wednesday Next.

IMPORTANT to GENTLEMEN, FLORISTS, and the FURNISHING TRADE. **CLEARANCE SALE OF SPECIMEN and other PALMS**, fit for immediate use.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Amhurst Nursery, Anton Street, Hackney, near Hackney Downs Station, on **WEDNESDAY NEXT**, October 19, at 12 o'clock, Without Reserve, 250 SPECIMEN PALMS, of sorts, including a splendid batch of Latania borbonica, hundreds of Kentias, Cocos, Cor. phas, Scaforthias, and other Palms in various sizes; beautifully-coloured DRACENA LINDENI, OPHIOPOGON VARIEGATA, FICUS, IMANTOPHYLLUMS, EUCARIS, BEGONIAS, and other Plants, three Market VANS, Wrought Iron TANK to hold 500 gallons, FERN CASE, and other items.

On view day prior, and morning of Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Thursday Next

TO SEEDSMEN and MARKET GROWERS.

6000 LILIUM HARRISII.

MESSRS. PROTHEROE AND MORRIS will include the above Assignment with to hand in their Sale of Plants on Thursday Next, October 20.

Thursday Next.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **THURSDAY NEXT**, October 20, at 12 o'clock, a quantity of choice NARCISSUS, comprising Emperor, Empress, Horsfieldi, and others; well-grown PALMS, comprising Kentia Belmoreana, Fosteriana, Cocos Weddelliana, Scaforthia elegans, Asparagus plumosa nana (true); Ficus elastica variegata, Aspidistra, some Cool-house and other ORCHIDS, Hardy BORDER PLANTS, LILIUM HARRISII, &c.

On view morning of Sale, and Catalogues had.

Friday Next.

By ORDER of MESSRS. LINDEN, BRUSSELS.

NEW, VALUABLE, and BEAUTIFUL ORCHIDS,

Including Superb Semi-established Plants of a

MOST EXTRAORDINARY NEW CATTLEYA.

Collected in quite a new locality near the Pacific Ocean. (This new Cattleya is highly recommended to the attention of Amateurs.)

A splendid Importation of well-leaved Specimens (one over 100 Buds) of

LÆLIA PURPURATA?

Collected in a region never before explored. Some fine plants of

LÆLIA ELEGANS,

from the same locality.

Excellent plants of the following desirable ORCHIDS:—MILTANIA CLAUSIANA, TRICOTOSIA FEROX, BLETIA CATENULATA, ODONTOGLOSSUM LUCENIANUM, ODONTOGLOSSUM BOBBAERTIANUM, ZYGOPETALUM LINDENI, STANHOPEA Eburnea, PAPHINIA GRANDIS, AGANISIA TRICOLOR, &c., for SALE by AUCTION by

MESSRS. PROTHEROE AND MORRIS, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT**, October 21, at half past 12 o'clock.

On view morning of Sale and Catalogues had.

Friday Next.

DENDROBIUM CHRYSANTHEM ALBUM in FLOWER. From the Collection of Henry Weetman, Esq., The Hawthorns, Little Haywood, Stafford. The plant has nine buds, three of which are new, and the flowers are large, and of good substance, pure white.

MESSRS. PROTHEROE AND MORRIS will include the above Plant in their SALE of **FRIDAY NEXT**, October 21.

On view morning of Sale, and Catalogues had.

Sunningdale.

A few minutes' walk from Sunningdale Station.

THREE DAYS' ABSOLUTE CLEARANCE SALE, WITHOUT RESERVE.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. C. Noble, to **SELL** by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on **WEDNESDAY**, October 19, and **TWO FOLLOWING DAYS**, at 12 o'clock precisely, a choice Assortment of beautifully-grown NURSERY STOCK, including Standard and Bush Rhododendrons of the best named kinds, Hybrid ponticum and other Rhododendrons, 2000 Azalea pontica, 4000 Aucubas, 2500 Portugal Laurels, 15,000 Conifers in various sizes, comprising 4000 Thuja americana, 3 to 6 feet, fine for hedges and planting; 4000 Thuja Lobbi, 3 to 7 feet; 2000 Spruce Fir, 1½ to 2 feet; 6500 Berberis; 6000 oval-leaved Privet; 8500 Limes and Planes, 6 to 10 feet, fine and straight trees, particularly suitable for Avenue, Park, or Street Planting; many thousands of Ornamental Trees for immediate effect, several thousands of Standard and Pyramid Fruit Trees, 200 Webb's Cob Nuts, Flowering Shrubs, Climbing Plants, and other STOCK.

Purchasers can arrange with Mr. NOBLE to lift and forward any Lots to all parts of the Kingdom at cost of labour incurred and material used.

The Stock may be viewed any day prior to the Sale.

Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Annual Sale.—Tottenham, N.

Adjoining the Tottenham Hale Station, Great Eastern Main Line, close to the Bruce Grove Station, on the Great Eastern, and also South Tottenham Station, on the Tottenham and Hampstead Railways.

IMMENSE SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Hale Farm Nurseries, Tottenham, N., on **TUESDAY**, November 1, at 11 o'clock precisely, in consequence of the unusually large number of lots, by order of Mr. Thomas S. Ware, an enormous quantity of well-grown

NURSERY STOCK,

comprising 30,000 named CARNATIONS and PICOTEES, consisting of all the finest varieties including Germania, the best yellow; Mrs. Reynolds Hole, salmon-apricot; Mrs. Frank Watts, the best white; Redbraes, purple edged Picotee; Sir Beauchamp Seymour, orange-buff; crimson Clove, Gloire de Dijon, large white Clove; Alice Ayres pure white, striped carmine; Princess Alice, rich bright salmon; Napoleon III., bright scarlet, one of the best; Eremman, rich bright scarlet; and many other first-class varieties in the finest possible condition. Also

5000 NEW CARNATIONS,

offered for the first time, consisting of Florence Emily Thoday, new white; Danger, new scarlet, a grand market variety; Mrs. Rieffel, glowing apricot; Lord Byron, bright scarlet, very large; and Horace, rich scarlet.

25,000 HER MAJESTY PINK,

the finest variety ever raised. Thousands of

SOUVENIR DE LA MALMAISON CARNATIONS, both blush and crimson, in the finest possible condition; strong plants in pots.

20,000 HOLLYHOCKS, PYRETHRUMS, &c.

25,000 CLEMATIS,

and other Climbers, fine strong stuff, including Jackmanni, Jackmanni alba, Beauty of Worcester, Countess of Lovelace, Anderson Henri, Gipsy Queen, and other first-class varieties. Also 2500 Ampelopsis Vitici, 4 to 5 feet; 1000 A. hederacea; 5000 A. hirsuta, 3 to 5 feet; Moggi, 2 feet; humifolia, 2 feet; and purpurea, 3 to 4 feet; 500 Escallonia, including montevideensis, 3 to 4 feet; macrantha, 2½ feet; Ingrami, 3 feet; 200 Bigonias, including coccinea, radicans, sanguinea, and Thunbergi, fine strong stuff, 3 feet; 1000 Hedera maderiense variegata, 3 to 4 feet; 5000 in variety, including H. digitata, 4 to 5 feet; H. Donierlense, 3 to 4 feet; H. taurica, 3 to 4 feet; H. Cavendishii variegata, 3 feet; H. latifolia maculata, 5 feet; H. marginata rubra, 3 feet; H. marginata minor, 3 to 4 feet; and many other varieties. Many thousands of Akebia quinata, Cotonaster Simmondsii, strong, 2 feet; Plumbago, of sorts; Cydonia japonica and Maulei, fine stuff, 2 feet; Jasminum nudiflorum, 2 to 3 feet; J. n. aureum, 3 feet; Lonicera, in great variety, aurea reticulata, 3 feet; brachyloba, 3 feet; flexuosa, 3 feet. Passiflora, cærulea and Constance Elliot, very strong stuff, 3 feet; Tacsonias, of sorts; T. Van Volxemi and exoniensis, 3 to 4 feet; and many other popular varieties.

5000 LILIES, &c.

Choice Home-grown Lilies, named Narcissus, Iris, and many others; among the Lilies will be found extraordinary fine roots of Liliun colchicum, Browni chalcidicum, Humboldtii, the new Bloomerianum magnum, from Mexico, Martagon album, pardalium, dalmaticum, Washingtonianum, the rare Wallichianum superbum, Wallacei, speciosum in great variety, and numbers of other rare and beautiful varieties;

250,000 BERLIN CROWNS LILY of the VALLEY.

Fine forcing Crowns, and all the true German varieties; 1000 New Dwarf ROSES, 1000 BAMBUSA GRACILIS,

100,000 FORCING PLANTS and BULBS,

All first-class forcing-stuff, including 5000 Spiraea multiflora compacta, S. palmata, palmata alba, japonica, Lily of the Valley, Clumps and Crowns; Dielytra spectabilis, Narcissus in great variety, Lilies in variety, Christmas Roses in variety, fine Clumps for Forcing, and numbers of other plants and bulbs adapted for forcing purposes;

100,000 SEAKALE and ASPARAGUS,

Exceedingly fine forcing crowns;

ROSES, ORNAMENTAL TREES, and SHRUBS;

A grand lot of Marechal Niel in pots, 10 to 12 feet; Gloire de Dijon, 6 to 8 feet; White and Yellow Banksian; Common China, Pompon de Paris, W. A. Richardson, fine stuff, in 18's and 32's, 3 to 6 feet; Bouquet d'Or, and many others; Maiden's Blush, Lunel, York and Lancashire; Standard and Dwarf Roses in variety, including all the popular varieties; 2000 Veronica Traversi, buxifolia, carnosula; Cistus, of sorts; 500 Olearias in variety, Lombardy Poplars, fine stuff, 10 to 16 feet, well furnished; Hydrangea paniculata grandiflora, good stuff; American Blackberries, hundreds of Black Italian Poplars, and many other useful stock; PERENNIALS, including thousands of Eulalia, a d other Ornamental Grasses, Everlasting Peas, Anemone japonica several varieties; Hemerocallis, Sunflowers, Galliarthas, Poppies, Centaureas, Doronicums, Lychnis viscaria splendens plena, Campanulas, Rudbeckias, Yuccas, a grand Collection of IRIS, fine strong clumps, including the best forcing varieties; Pumila of sorts, Ottoensis of sorts, Siberica of sorts, Florentina, the sweet-scented variety; Germania, in great variety; Kämpferi, and many others; Delphiniums, thousands of Hollyhocks, and hundreds of other important plants, too numerous to mention.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Bagshot.—Preliminary Announcement.

By order of Messrs. John Waterer & Sons.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at the renowned American Nurseries, Bagshot, Surrey, on **TUESDAY**, November 8, and **TWO FOLLOWING DAYS**, large quantities of splendidly-grown NURSERY STOCK.

Descriptive particulars will duly appear.

Wandsworth Common, S.W.

UNRESERVED SALE of well-grown and thriving NURSERY STOCK, growing upon a portion of the Land held under Her Majesty's Government, by order of Mr. Robert Neal, who has received short notice to give up possession.

To GENTLEMEN, BUILDERS, NURSERYMEN, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Nursery, Trinity Road, Wandsworth Common, S.W., on TUESDAY, and WEDNESDAY, October 25 and 26, at 12 o'clock each day, thousands of ACUBAS, HOLLIES, and LAURELS, PRIVET, BOX, and CUPRESSUS, large quantities of Standard Ornamental TREES, including Planes, 10 to 12 feet; Chestnuts, Poplars, Limes, Thorns, Laburnums, &c.; Deciduous Flowering Trees, a fine lot of Standard and Pyramid Fruit Trees, comprising Gooseberries, Currants, Raspberries; a quantity of Fruiting and Planting VINES, all well-ripened Canes; ASPARAGUS, SEAKALE, and RHUBARB.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Cliffe, near Rochester.

IMPORTANT TO FRUIT GROWERS, MARKET GARDENERS, and OTHERS.

GREAT ANNUAL SALE, by order of Mr. W. Horne. **MESSRS. PROTHEROE AND MORRIS** will SELL by AUCTION, on the Premises, Cliffe, near Rochester, adjoining Cliffe Station, South-Eastern Railway, on WEDNESDAY, October 26, at half past 11 o'clock, 100,000 FRUIT TREES,

comprising 35,000 one, two, and three-year old Apples, Pears, Plums, and Cherries; 1000 Lady Sudeley and Bismarck Apples; 5000 of the new dessert Apple, Beauty of Bath; 50,000 Birdwin Black Currants, 4000 Red Currants, 10,000 Bob and Lad Gooseberries, 5000 John Ruskin Strawberries, also Noble, and other varieties, in large and small pots; 45,000 Paxton, Noble, and John Ruskin Strawberries, from open ground; 20,000 three-year Conover's Colossal Asparagus roots, from French seed; 50,000 early Rauhham Cabbage plants, &c.

May be viewed. Catalogues may be obtained on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Hampton, Middlesex.—Absolutely without Reserve.

CLEARANCE SALE of the FINAL PORTION of exceptionally well-grown FRUIT TREES and General NURSERY STOCK, by order of Messrs. Mahood & Son, the Ground having to be cleared for other purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Tangley Park Nurseries, Buckingham Estate, Hampton, about 1 mile from Hampton Railway Station, on THURSDAY, October 27, at 12 o'clock precisely, without the slightest reserve—

2,000 STANDARD APPLES	2,000 MAIDEN APPLES
1,000 " PEARS	10,000 DWARF ROSES
3,000 STANDARD ROSES.	

A quantity of dwarf-trained FRUIT TREES, consisting of Apples, Pears, Plums, Peaches, &c., Standard-trained Peaches, Scarlet and Pink THORNS, Green HOLLIES, LABURNUMS, large quantity of Standard LIMES, young clean stub with good heads; WEEPING WILLOWS, CONIFEROUS SHRUBS, ACUBAS, and other STOCK.

May now be viewed. Catalogues may be had on the Premises, also at the Nursery, High Street, Putney; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Groombridge, near Tunbridge Wells.

HOLLAMBY'S NURSERIES.

GREAT UNRESERVED SALE of valuable NURSERY STOCK, all recently transplanted, and carefully prepared for removal.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, as above, close to the Groombridge Station, on THURSDAY and FRIDAY, October 27 and 28, at 12 o'clock precisely each day, by order of Mr. Edwin Hollamby, enormous quantities of CONIFER, Standard, Dwarf, and other ROSES, 10,000 Larch and Scotch Firs, Ash and Spanish Chestnut, 100, 00 strong transplanted Quick, 300 named and other Rhododendrons, Azaleas, Andromeda floribunda, Seakale (extra strong for forcing), 10,000 Pinus austriaca, &c.

May be viewed any day prior to the Sale. Catalogues may be had at the Nurseries, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Knockholt, Kent.

SALE of well-grown and thriving NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. A. Waterman to SELL by AUCTION, on the Premises, the Hickmads Nursery and Fruit Grounds, Knockholt Kent, 2½ miles from Halstead Station, S.E.K., on WEDNESDAY, November 2, at half-past 12 o'clock, a portion of the well-grown and splendidly-rooted NURSERY STOCK, including 2000 Pines in variety, 650 Spruce Firs, 2 to 9 feet; 1500 Laurels, of sorts; fine lot of specimen Conifers and Evergreen Shrubs, Rhododendrons, Yews; 6500 Standard Ornamental Trees, 6 to 11 feet; 500 Ash, Copper Beech, large quantity of Standard and Pyramid Fruit Trees, including Lord Suffield, Wellington, and other Apples, Pears, Plums, and Cherries; 5000 Raspberry Canes, 300 Strong Cob Nuts, 1250 Vines, 4 to 5 feet; flowering Shrubs, Clematis, Herbaceous Plants, &c.; Light Spring Pony Van, Pony Cart, Artillery Wagon, in first-class condition; Chaff-cutting Machine, Manure Pump, Set of Harness, and other items. Conveyances will meet the morning trains at Halstead Station on day of Sale to convey intending purchasers to the Nursery.

May now be viewed. Catalogues had on the Premises, of the Station Master at Halstead Station, at the Crown and Horse Shoe Hotels, Knockholt, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

The Barnham Nurseries, near Bognor.

PRELIMINARY NOTICE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, by order of Mr. S. S. Marshall, on TUESDAY and WEDNESDAY, November 15 and 16, a portion of the GENERAL NURSERY STOCK, including—

5,000 Conifers and Evergreens	1,000 Specimen Border Plants
12,000 splendidly-grown Fruit Trees	2,000 Standard and Dwarf Roses
2,500 Crab Stocks	10,000 Manetti Stocks

Catalogues are now being prepared, and will be forwarded on application.

Stafford.

CLEARANCE SALE of the whole of the NURSERY STOCK growing at the Branch Nursery, by order of Messrs. Sandy & Son, who have disposed of the Home Nursery and Business. IMPORTANT TO GENTLEMEN, NURSERYMEN, and OTHERS engaged in PLANTING.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Farm Nursery, Stafford, on TUESDAY, November 8, at 12 o'clock precisely, without the least reserve, the well-grown NURSERY STOCK, comprising 10,000 Oaks, 16,000 Scotch Firs, 12,000 Spruce Firs, 18,500 Beech, 3500 Horse Chestnuts, 800 Larch, 900 Limes, 16,500 Pinus austriaca, 3000 Pinus laricio, 300 P. cembra, 5500 Sycamore, 300 Birch, 4500 Hollies, 150 Weeping Elms, 350 Copper Beech, 400 Double Pink and White Thorns, 350 Aucubas, 900 English Yews, 500 Azalea Molis, 200 Cupressus Lawsoni, 1500 Pears, 5500 Apples, 2500 transplanted Quick, Rose Stocks, and various other items.

May be viewed any day prior to the Sale. Catalogues may be had of Messrs. Sandy & Son, Nurserymen, Stafford; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Havant Sale.—Tuesday Next.

IMPORTANT TO THE TRADE.

MESSRS. PROTHEROE AND MORRIS beg to draw attention to the STOCK Plants, with abundant wood, for Propagating Purposes, and also to the STOOLS, with Rooted Layers and with wood for Cuttings and Grafts. Catalogues are now ready and will be forwarded on application.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. EVERY DAY, at 12 o'clock, large consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland. Lotted to suit the Trade and Private Buyers. 12 tons are sold every week.

On view morning of Sale, and Catalogues had.

Isleworth.—Preliminary Notice.

By order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Arboretum and Wood Lane Nurseries, Isleworth, on THURSDAY and FRIDAY, November 3 and 4, a quantity of DECIDUOUS TREES and SHRUBS, of all the best kinds; small Variegated and Green HOLLIES, Golden and other FOUNTAINUS, SHRUBS for Potting and Boxing, small CONIFERS, and other STOCK.

Particulars will appear in future announcements.

Feltham.—Preliminary Notice.

By order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, the Nurseries, Feltham, on FRIDAY, November 11, CONIFERS of the best kinds, Green and other Hollies, Laurels, Privet, &c.

Full particulars will appear in future announcements.

Tuesday Next.

SPECIAL SALE OF DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, October 18, at half-past 12 o'clock precisely, 300 lots of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and OTHER BULBS from well-known growers in Holland, and specially lotted for all buyers.

On view morning of Sale and Catalogues had.

Thursday, October 27.

The Valuable COLLECTION of ESTABLISHED ORCHIDS and STOVE and GREENHOUSE PLANTS, formed by the late C. B. Powell, Esq.

MR. J. C. STEVENS has been favoured with instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, OCTOBER 27, at half-past 12 o'clock precisely, the valuable and well-known collection of ESTABLISHED ORCHIDS formed by the late C. B. Powell, Esq., of Drinkstone Park, Bury St. Edmunds, comprising amongst other fine things—

A Grand Plant of SOBRALIA XANTHOEUA, probably the finest in the Kingdom

Magnificent specimens of rare CYPRIPEDIUMS, beautifully grown, a variety of choice DENDROBIUMS, CATTLEYAS, AERIDES, ODONTOGLOSSUMS, CALANTHES, LELIAS, &c. In this Sale will be included the STOVE and GREENHOUSE PLANTS in Splendid Condition.

On view morning of Sale, and Catalogues had.

Thursday Next.

COLLECTION of ESTABLISHED ORCHIDS, many in Flower and Bud; 500 AZALEA INDICA and MOLLIS, well set with Buds, from Ghent; COLLECTION of STOVE and GREENHOUSE PLANTS, 5000 Berlin LILY of the VALLEY Crowns, 500 clumps of SPIREA JAPONICA, 500 clumps of LILY of the VALLEY, 5000 LILUM HARRISII, L. CANDIDUM, 5000 ANEMONE FULGENS, choice sorts of DAFFODILS and NARCISSUS, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 20.

On view morning of Sale, and Catalogues had.

Thursday Next.

1000 GRAND PLANTS of the New CYPRIPEDIUM O'BRIENIANUM, just received in splendid condition. Without reserve.

MR. J. C. STEVENS will include the above in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 20.

On view morning of Sale, and Catalogues had.

Choice Bulbs from Holland.

MR. J. C. STEVENS will SELL by AUCTION, every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice BULBS arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Annual Sale.—Dorking Nurseries.

London and Reigate Roads, Dorking, close to London, Brighton and South Coast and South-Eastern Railways.

MESSRS. WHITE AND SONS are instructed by Messrs. Ivory & Son, to SELL by AUCTION, on the Premises, on TUESDAY, October 18, at 11 o'clock precisely, commencing in the London Road Nursery, in Lots to suit Private Purchasers, well-grown and healthy, young NURSERY STOCK, in first-rate condition for transplanting, viz., Aucubas, Box, Hollies, Portugal Laurels, Golden and Common Yews, Flowering Shrubs in varieties, assorted Thuias, Abies Douglasii, Thujaopsis, Retinosporas, and Cupressus, Pines, and Pears in variety; Spruce and other Fir, up to 10 feet, for immediate effect; Cedars, Junipers, Araucarias, Acer variegata, and Ornamental Trees, as Poplars, Birch, Plane, Maple, &c., choice Standard and Pyramid Apples, Plums, and Pears, Gooseberries, Currants, Cobnuts, and Filberts, and thousands of Laurels of various sizes.

Catalogues may be obtained at the hotels in the neighbourhood; of Messrs. IVERY and SON, Nurserymen, Dorking and Reigate; at the place of Sale; and of the Auctioneers, Land Agents, and Valuers, High Street, Dorking, and on Fridays, at Leatherhead.

Important Sale of about 10,000 Young Fruit Trees and PLANTS, at

LOVELAND'S FARM, KINGSWOOD, near REIGATE, Surrey, 2 miles from Redhill, and 1 mile from Mertsam.

By order of Mr. Richard Bunn. To Clear the Ground.

MR. HARRIE STACEY is favoured with instructions to SELL by AUCTION, on the Premises, on FRIDAY, October 21, at 11 for 12 o'clock, the above, consisting of a choice selection of Czar and Victoria PLUMS, Early Julien and other APPLES, Cox's Orange Pippins, Worcester Pearmain and Blenheim Orange; RASPBERRIES, Black, Red, and White CURRANTS, STRAWBERRY RUNNERS, Coe's Golden Drop PLUMS, and others.

Catalogues may be had at the usual Inns in the neighbourhood, and of Mr. HARRIE STACEY, Auctioneer and Valuer, Reigate and Redhill.

Hare Hill and Brox Nurseries, Addlestone.

(1½ miles from Addlestone Station on the London and South Western Railway).

IMPORTANT FIVE DAYS' SALE of exceedingly Well-grown and Healthy NURSERY STOCK, the Land being Sold.

MESSRS. WATERER AND SONS are instructed by Mr. Alfred Gray to SELL by AUCTION on the Premises, as above, on MONDAY, October 24, and FOUR FOLLOWING DAYS, at 11 for 12 o'clock each day, the whole of the excellent NURSERY STOCK, including thousands of Evergreens, Trees and Shrubs, viz., Cedrus deodara, Retinospora plumosa, Picea Nordmanniana and nobilis, Araucaria, Yew, Hemlock Spruce, Spruce and Silver Firs, 5000 Standard, Dwarf, and Climbing Roses, quantity of deciduous flowering Trees and Shrubs, 10,000 Weymouth Pines, 10,000 Thuia Lobbi, and Cupressus, 2 to 8 feet; 11,000 Fruit Trees, Standard and Dwarf-trained Apples, Pears, Plums, Cherries, Apricots, Peaches, and Nectarines; 15,000 Abies Douglasii and Pinus austriaca, 5000 Caucasian, Common, Portugal, and Rotundifolia Laurels, 2 to 8 feet; 15,000 Standard Limes, 10,000 Rhododendron ponticum, 1 to 2 feet; 1000 hybrid Rhododendrons, 1000 Aucubas, 2 to 4 feet; and thousands of Forest Trees, Horse Chestnuts, Poplars, Sycamores, Birch, Mountain Ash, Maple, and many others.

May be viewed seven days prior to the Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at either of their Offices at Chertsey, Weybridge Station, and opposite the Station entrance, Walton-on-Thames.

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WANTED, a Portable Double-span GREENHOUSE, at least 30 feet long by 13 feet wide, IN SOUND CONDITION, with or without Fittings. Also RANGE of LIGHTS, and some HANDLIGHTS. Prices and particulars to MORREY, 429, Strand, London, W.C.

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Apply to C. T., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Herts.—11 miles from London.

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TO BE LET, DETACHED RESIDENCE, and an acre and three-quarters of land, with seven substantial Greenhouses, all well-heated. Lease seventeen years to run. Rent, £78. Any reasonable offer entertained for the purchase of the Greenhouses.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C. (7788.)

MUST BE SOLD (Owner having bought a larger Business), a Small Genuine NURSERY, FLORIST, and JOBBING BUSINESS, doing an increasing Trade, Valued at £400. Every investigation courted. £350, or near offer, accepted, if sold at once.

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Apply, Mrs. BESLEY, 31, Kemble Street, Prescott.

Rare opportunity, very seldom met with.

FOR IMMEDIATE DISPOSAL, or RENTAL, as a thorough going concern, large MARKET, FLORIST, and LANDSCAPE BUSINESS. Established over thirty years, in one of the most fashionable South Coast Watering-places. Nearly 25,000 feet of Glass, all thoroughly heated on latest principle. The houses are full of Stove, Greenhouse, and other Marketable Plants. There is also a grand opportunity for Erica and Tomato-growing. Stock-in-Trade, &c., at valuation. This is a genuine affair, and only principles treated with. Full particulars will be given and every enquiry courted.

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MR. MALCOLM SEARLE is instructed by Mr. R. Clarke, of Pope's Grove, Twickenham, S.W., after an occupation of forty years, TO LET or SELL the far-famed 3 acres of LAND, well stocked with Choice Standard and Wall Fruit Trees and Bushes, with Residence, Cottages, Outbuildings, Forcing Houses, and Pits.

A valuable Plot of BUILDING LAND, adjoining, is also for SALE. Worth attention.

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TO BE SOLD, a small MARKET NURSERY BUSINESS.—Suit beginners. Six miles from Covent Garden. Close to high road and rail. Free from London fog. About 2 Acres, Glass, &c. Incoming £300.—BOXII, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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FOR SALE, the LEASE of $\frac{1}{4}$ Acre of GARDEN, 3 GREENHOUSES, making 150 feet long by 12 wide, well heated, 15 miles from London, 15 minutes' from Rail. Rent £12; small Cottage adjoining, held on agreement at 4s. per week.

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FOR DISPOSAL, a SEED, CORN, and FLORIST'S BUSINESS, in a good Market Town. Conveniently fitted Shop, Warehouse, Greenhouse, Four Frames, Garden planted with Fruit, &c.; Seven-roomed House and Furniture. Rent, only £30. Incoming about £200.—G. N., *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

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FOR SALE, a compact, attractive, old-established NURSERY, SEEDSMEN, and FLORISTS' BUSINESS (including Retail Shop); several Greenhouses, comprising 4000 square feet of glass, well-heated, &c. Magnificent opportunity. Only Nursery in seaside town of 40,000 inhabitants. Within easy run of London.

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For full particulars apply to Mr. FRED. G. HUGHES, Surveyor, The Estate Office as above.

TO BE DISPOSED OF, cheap, the ILLUSTRATED DICTIONARY OF GARDENING, and ENCYCLOPEDIA OF HORTICULTURE for Gardeners and Botanists; also THOMPSON'S GARDENERS' ASSISTANT. The Dictionary has never been used. For price and particulars, apply H. PESTRIDY, 866, Old Kent Road, London, S.E.

FOR ORCHIDS and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

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BRAZILIAN ORCHIDS supplied in large or small quantities.

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THE LIVERPOOL HORTICULTURAL CO.

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THE VINEYARD AND NURSERIES, CARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS,

FERNS, &c., &c.

CATALOGUES, with full particulars, post free on application.

Special Quotations to the Trade.

EXHIBITIONS.

BRIGHTON and HOVE CHRYSANTHEMUM SHOW, TUESDAY and WEDNESDAY, November 1 and 2. Entries close October 25. Schedules may be obtained of MARK LONGHURST, Secretary, 18, Church Road, Hove, Sussex.

CRYSTAL PALACE.

GRAND EXHIBITION of CHRYSANTHEMUMS, FRIDAY and SATURDAY, November 4 and 5, 1892.

Schedule, post free, on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close October 28.

TIVERTON CHRYSANTHEMUM SOCIETY.—The NEXT SHOW will be held in the Drill Hall on THURSDAY, Nov. 10, 1892.—For Schedules apply to K. P. COSWAY, Hon. Sec., Tiverton.

SOUTH SHIELDS and NORTHERN COUNTIES CHRYSANTHEMUM SOCIETY.

Show will be held, NOVEMBER 9 and 10, in Royal Assembly Hall, South Shields. £120 in Prize Money, £15 for 36 Japanese Blooms. £11 for 24 Incurved Blooms.

N.B.—Affiliated with National Chrysanthemum Society of England.

Harton, South Shields. BERNARD COWAN, Hon. Sec.

ROYAL BOTANICAL SOCIETY of MANCHESTER.

The ANNUAL CHRYSANTHEMUM SHOW will be held in the Town Hall, Manchester, on November 15 and 16.

SILVER CUPS of the value of £10 & £5 given for 36 Blooms. For Schedules apply to the undersigned.

Botanic Gardens, Manchester. BRUCE FINDLAY.

BIRMINGHAM GREAT CHRYSANTHEMUM EXHIBITION

Will be held, in aid of the New General Hospital Building Fund, in the Town Hall, Birmingham, on

TUESDAY, WEDNESDAY, and THURSDAY, November 8, 9, and 10.

£262 offered in Prizes, as follows:—

For CHRYSANTHEMUMS	...	...	£150 0 0
PRIMULAS	...	...	25 0 0
Miscellaneous and other PLANTS	...	...	25 0 0
FRUIT	...	...	40 0 0
VEGETABLES	...	...	22 0 0

Entries close November 1.

Schedules post-free on application to the Secretary,

140, High Street, Harborne, Birmingham. J. HUGHES.

THE LONDON COUNTY COUNCIL is prepared to receive TENDERS for the SUPPLY and PLANTING, with usual guarantee of about 50 English TREES, and about 1200 a-sorted HARDY SHRUBS, suitable for planting at the present time, at the Crossness Outfall Works, on the banks of the River Thames, near Belvedere; also about 20 TREES and 700 SHRUBS, for planting at the present time, at the Barking Outfall Works, near Becton, North Woolwich. The Council does not bind itself to accept the lowest or any tender. Tenders must be addressed, in a closed envelope, endorsed "Tender for Trees and Shrubs, Crossness and Barking," to the Clerk of the Council, Spring Gardens, S.W., in time to be received not later than 10 o'clock, on Thursday, the 27th instant.

H. DE LA HOOKE, Clerk of the Council, Spring Gardens, S.W.—October 6, 1892.

THE VESTRY of FULHAM are prepared to receive TENDERS for the SUPPLY and PLANTING of LIME TREES and various kinds of SHRUBS for the Recreation Ground, Fulham Palace Road.

Tenders to be submitted on or before WEDNESDAY, October 19, 1892, on Forms to be obtained from the Surveyor, Town Hall, Waiham Green, S.W.

W. J. H. DENSELOW, Clerk to the Vestry.

GOLDEN EUONYMUS, good bushy stuff, for Potting. Splendid Colour, H. H. MOORE, Chichester.

GREEN HOLLIES.—Special offer of, for present permanent planting. Young, strong, and healthy. Have been well transplanted; chiefly bushy. Also, nice Pyramids, 1½ to 2 feet. Prices, from 12s. to 30s. per 100; £5 to £13 10s. per 1000.

Samples and Prices on application.

I. CRICK, Amptill, Beds.

CARNATION Mrs. Reynolds Hole, the popular terra cotta, strong rooted layers, 20s. per 100; £9 per 1000. Cash.

CRANE and CLARKE, Hillside Nursery, March, Cambs.

DOUBLE NEAPOLITAN VIOLETS.—Magnificent, fine large clumps, just coming into flower. Will flower all the winter; 12s. per dozen; 2nd size, 9s. per dozen; good clumps, 6s. per dozen; Czar ditto, half above prices. Cash.—FOREMAN, Stanmore Park Gardens, Stanmore.

FOR SALE, 60,000 strong one-year Whinham's Industry GOOSEBERRY BUSHES. On application. W. HUNTER, Tyne Green, Hexham.

FERNS! FERNS!!—Trade.—Greenhouse and Stove, 25 saleable sorts, 12s. per 100; out of pots, at 10s. Strong Seedling Ferns, stores, in variety, 6s. per 100, 50s. per 1000. Large Adiantum cuneatum, Arealias, Cyperus, all in 48's, 6s. per dozen. Palms, Ficus, Hydrangeas, 1s. each. Large Ferns, 10 best sorts, 6s. 6d. per dozen, in 48's. Adiantum cuneatum and P. tremula, extra size, in 2½-inch pots, 16s. and 20s. per 100. Packed free, Cash with Order.

J. SMITH, London Fern Nurseries, Loughboro' Junction, S.W.

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SEND TO

MR. ROBERT SYDENHAM

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The Largest Amateur Importer in the Kingdom.

No Nurseryman in the Country can serve you better or cheaper for

REALLY GOOD BULBS & SEEDS

AT MODERATE PRICES.

FULL LIST POST-FREE ON APPLICATION.

FRUIT TREES.

ROSES and VINES

OF UNSURPASSED QUALITY.

INSPECTION INVITED.

HUGH LOW & CO.,

The Nurseries, BUSH HILL PARK, N.

DUTCH BULBS!

FRENCH BULBS!

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See our Special Wholesale CATALOGUE of BULBS.

Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILIIUMS, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

Please compare our prices before sending your orders abroad.

WATKINS & SIMPSON,

SEED AND BULB MERCHANTS,

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"ONLY THE BEST."

THE BEST BULBS ARE THE CHEAPEST.

GARAWAY & CO.'S
HYACINTHS, TULIPS, & OTHER BULBS

ARE

THE BEST.

All Orders Carriage Paid, and FIFTEEN PER CENT. Discount for Cash with Order.

WHITE ROMAN HYACINTHS, 10s. per 100.

PAPER WHITE NARCISSUS, 6s. per 100.

SCARLET VAN THOL TULIPS, 2s. 6d. per 100.

NAMED HYACINTHS, for pots, the best named varieties, and first size bulbs, 5s., 6s., and 8s. per dozen; second size bulbs, 2s. 6d. per dozen.

OTHER BULBS at correspondingly cheap rates. Price LIST free on application.

GARAWAY AND CO.,

DURDHAM DOWN NURSERIES,

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VICTOR POTATOS

(SHARPE'S).

This favourite first early Potato, suitable for any Garden, indispensable for Forcing and Early Borders, and likely to take the first rank amongst first earlies for market use. Quality and yield all that could be desired. One well-known market grower has this year had a yield of 15 tons per acre on a large acreage. London and Manchester salesmen speak highly of their quality, and report that Victors will keep their bloom and have a fresh appearance after being in the market some days, when other early Potatoes have become discoloured and unsaleable.

The stock we offer is the true yellow-fleshed variety and not the white variety, which is often substituted.

Price per cwt. and ton. State requirements to

W. W. JOHNSON & SON,

Seed Growers and Merchants, Boston, Lincolnshire.

VEITCH'S SUPERIOR BEDDING HYACINTHS

Distinct Shades of Colour:—Crimson, Bright Red, Rose, Dark Blue, Bright Blue, Light Blue, Pure White, Rosy White, Yellow, selected to flower at the same time. 17/6 to 21/- per 100; 2/6 to 3/- per dozen.

Red, all shades, mixed	... 15/-	per 100	... 2/-	per doz.
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Crimson, Rose, Scarlet, White, Yellow, Rosy-crimson, Dark Crimson, Red-edged Yellow, Violet, all flowering at the same time, 5/- to 13/6 per 100.

Single, finest mixed	... 36/-	per 1000	... 4/-	per 100
Double, ..	... 35/-	..	... 4/-	..

VEITCH'S SUPERIOR DUTCH CROCUS.

Large Yellow	... 15/-	per 1000	... 1/9	per 100
Large Blue, mixed shades	12/6 1/6	..
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Large White	... 12/6 1/6	..
Mixed, all colours	... 10/6 1/3	..

For other Bulbs see Descriptive and Illustrated CATALOGUE, forwarded Gratis and Post-free on application.

JAMES VEITCH & SONS

ROYAL EXOTIC NURSERY,
CHELSEA, LONDON, S.W.

ROSES IN POTS

HIGHEST AWARDS, in 1892, at the International Horticultural Exhibition (Two Gold Medals); Temple Show of the Royal Horticultural Society (Silver Cup); and Royal Botanic Society (Silver-Gilt Medal).

WM. PAUL & SON

Respectfully solicit Orders for Pot Roses, their Stock being this year the *largest* and *finest* they have ever had, and unsurpassed, if equalled in quality, by any in the Trade.

Extra-sized plants of **TEA** and **NOISSETTE** VARIETIES, in 8-inch pots (including Climbing kinds for Conservatories, &c., with 8 to 10-foot shoots), 42s. to 60s. per dozen.

Extra-sized **HYBRID PERPETUALS**, in 8-inch pots, 24s. to 36s. per dozen.

Smaller Plants, in 5 and 6-inch pots, 9s. to 30s. per dozen.

Half-Specimens and Specimens, the finest collection in existence, 5s. to 63s. each.

Immense Stocks of Standard, Half-Standard, Dwarf, and Climbing Roses, in the Open Ground, ready for removal from end of October onwards.

Also large collections of Fruit Trees, Hardy Trees and Shrubs, Camellias, Bulbs, &c.


Priced Descriptive Catalogues free by post.

PAULS' NURSERIES,
WALTHAM CROSS,
HERTS.

NARCISSUS—SIR WATKIN.

Bulbs of this splendid variety, the most effective of all the Daffodils, now ready, in fine condition, and of best quality. Prices on application.

DICKSONS NURSERIES
(400 Acres) CHESTER
(LIMITED)



WEBB'S'

COLLECTIONS OF BULBS

CONSIST OF THE FINEST
SELECTED

HYACINTHS, TULIPS, CROCUS, LILIES, SNOW- DROPS, ETC

Prices, 5s., 7s. 6d., 10s. 6d., 15s., 21s., 42s., 63s., and 105s. each; Carriage Free.

FIVE PER CENT. DISCOUNT FOR CASH.

For full particulars of Contents of these Boxes, and Lists of the Best Bulbs of the Season, see

WEBB'S BULB CATALOGUE,
Beautifully Illustrated: Gratis and Post-free.

Seedsman by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales.

WORDSLEY, STOURBRIDGE.



THE Gardeners' Chronicle.

SATURDAY, OCTOBER 15, 1892.

TENNYSON AS A NATURALIST.

THE whole nation is lamenting the loss of its sweetest singer, and of the poet who, most of all, was in touch with the spirit of his time.

Those now in middle life are recalling the days when their hearts beat high and their pulses throbbed as they were uplifted by the noble trumpet-call of *Locksley Hall*, or chastened by the exquisite melody of *In Memoriam*. Whether joyfully acclaiming the signs of progress and of widening thoughts, or reverently looking forward to the unknown future, Tennyson was the idol of those treading with wonder, exultation, but withal with veneration, the paths of science in the middle of the century.

Science indeed has found no more appreciative sympathiser among the poets than it has in Tennyson. His poems teem with allusions which none but a naturalist would make. They are imbued with all that is good and beautiful, and true and hopeful in science. They manifest intelligent sympathy with its wondrous conquests, and its noblest aspirations—

"With the fairy tales of Science and the long result of Time."

Mark these pre-Darwinian illustrations of the principle of evolution?

"Yet, I doubt not through the ages one increasing purpose runs,
And the thoughts of men are widened with the process of the suns."

"Whose faith has centre every where,
Nor cares to fix itself to form."

"One God, one law, one element,
And one far-off divine event,
To which the whole creation moves."

And is not this a reflex of the teaching of Owen and of Huxley?

"So careful of the type, she seems
So careless of the single life."

These and a hundred other illustrations show how closely the great poet was in touch with the sciences of the day.

The very method he employed in his literary work, his striving after accuracy of detail and perfection of statement, the care with which he polished his exquisite melodies, are they not also indications of the scientific tendencies of his mind?

The hero-worshippers were afterwards, it is true, led to wonder at the incongruity of seeing Tennyson, "Alfred Tennyson," a lord! A peerage could confer no possible dignity on him, nor, as it proved, did he lend strength to the august assembly of which he became a member.

Williams

AUTUMN, WINTER FLOWERING,
AND

FORCING PLANTS.

Prime Quality, in Splendid Condition,
Now Ready for Delivery.

- AZALEA INDICA, finest kinds for forcing.
- " MOLLIS, loaded with buds.
- " GHENT VARIETIES, very fine.
- BEGONIAS, winter-flowering.
- BOUVARDIAS, crowned with flower-buds, including the latest novelties.
- CAMELLIAS, fine sorts, well set with flower.
- CARNATIONS, tree varieties, loaded with buds.
- CYCLAMEN, our superb Giganteum strain.
- DAPHNE INDICA RUBRA.
- DEUTZIA GRACILIS, splendidly set with flower buds.
- EPACRIS, of sorts, very fine for winter.
- ERICA HYEMALIS, GRACILIS, CAFFRA, &c.
- GARDENIAS, best sorts, well budded.
- LILAC ALBA VIRGINALIS, fine pot plants from Paris.
- " CHARLES X. " " "
- " PERSICA. " " "
- LILIUM HARRISI, extra strong, from America.
- PRIMULA SINENSIS ALBA PLENA, in fine varieties.
- ROSES, finest Teas and Hybrid Perpetuals, strong plants grown in pots for forcing.
- SOLANUM HYBRIDUM, Empress, and other kinds.

GRAPE VINES. Orders are now being executed for Vines. The canes are very fine this year and well-ripened.

For Complete List and Prices, see Illustrated Bulb Catalogue, Gratis and post free on application.

B. S. WILLIAMS & SON

Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.

Worse still, the devotees have had to wince at the depressing contrast between the original *Locksley Hall* and its sequel, *Sixty Years After*. It may be that the lesson is as true and as useful in its way as was the outpour of faith and hope in earlier times, and that the story would have been incomplete and less true to Nature if the despondency of the octogenarian had not been depicted for us, as well as the buoyant hopefulness of the youth; but for all that, it is a disheartening shock to faith. Was this the man who once could say—

"Oh, yet we trust that, somehow, good will be the final goal of ill."

A poet-naturalist, Tennyson could not fail to sympathise alike with the botanist and the gardener. Was it not he that sang of—

"The grand old gardener and his wife,"

And did he not wax eloquent over the charms of "the gardener's daughter"?

We know the sort of garden he liked—he has told of his—

"careless-ordered garden."

Some of us have been able to recognise that the phrase—

"A spacious garden full of flowering weeds," was a not inapt description of his own garden —

"Close to the ridge of a noble down."

It is clear that he had sympathies with—

"High-walled gardens green and old,"

and those wherein—

"The rusted nails fell from the knots
That held the Peach to the garden wall."

But although he sometimes looked upon ill-ordered gardens with the eye of an artist and a poet, rather than with that of a gardener, it was not always so; a casual glance through his pages shows that he was by no means insensible to the charms of a more carefully-tended garden. Here is a garden picture most of us have seen often enough—

"The garden stretches southward, in the midst
A Cedar spread his dark green layers of shade,
The garden-glasses shone, and momentarily
The twinkling Laurel leaves scattered silver lights."

And here is a sketch of the writer as he betakes himself to the home probably of the gardener's daughter—

"And cross'd the garden to the gardener's lodge,
With all its casements bedded and its walls
And chimneys muffled in the leafy Vine."

We can see the poet in imagination striding across—

"A garden-bowered close
With plaited alleys of the trailing Rose
Long alleys falling down to twilight grots,
Or opening upon level plots
Of crowned-Lilies standing near
Purple-spiked Lavender."

If by crowned Lilies the poet meant the "Crown Imperial," he was for once at fault, for the purple-spiked Lavender would hardly be in bloom at the same time.

Here are pictures of autumn in the garden just prior to the time when his—

"whole soul grieves
At the moist rich smell of the rotting leaves."

"Heavily hangs the broad Sunflower
Over its grave in the earth so chilly;
Heavily hangs the Hollyhock,
Heavily hangs the Tiger Lily."

The stately Hollyhock seems to have been a favourite with Tennyson, for he mentions it again and again. The Woodbine, the Jasmine, the Violet (a special favourite), the Acacia (Robi-

nia), Pimpernel, Rose, Lily, Passionflower, and Larkspur, all find mention in *Maud*; and throughout his poems, though we cannot stay to verify our impression, there are evidences of a fondness for flowers that are blue. But if we were to quote all the plants, cultivated or wild, that are alluded to in his poems, we should require not one, but a long series of articles. We can only mention his fondness for the river-banks and marshes—attributable, probably, to his Lincolnshire birth and Cambridge residence. Here are some pictures, the like of which must surely exist in numbers by the Cam—

"The hump-backed Willow half stands up
And bristles; half has fallen and made a bridge."

"A league of grass wash'd by a slow broad stream
That stirr'd with languid pulses of the oar,
Waves all its Lilies."

"The Oat-grass and the Sword-grass and the Bul-rush in the pool."

He frequently employs the term "marish" in speaking of the vegetation, and is full of allusions to such scenes as are afforded by "dank Willows," Poplars, Aspens, and other trees hard by—

"The sleepy pool above the dam."

The Elm, the Ash, the Oak, and the Lime, all find mention in his pages; the last tree especially was a favourite, and is more than once mentioned in connection with bees—

"The Lime, a summer home of murmurous wing."

Further illustrations might be given by the score to show how keen a sympathy Tennyson had with Nature, what a close observer he was, and what profound, yet simple, lessons he could draw from the sights and the sounds of the everyday objects that met his gaze. Enough, if we send the reader to his bookshelf, to enjoy once again the delicious melody of the Laureate's rhythm, and to be uplifted into a clearer, purer atmosphere than that which surrounds our daily tasks.

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM EDITHÆ, n. hybr.*

THIS lovely new hybrid has been obtained by fertilizing *Sel. conchiferum*, Rchb. f., with the pollen of *S. Schlimii* albiflorum. As *S. conchiferum* is the hybrid between *S. caricinum* × *S. Roezlii*, we have to deal with the characters of three very different species. The influence of the pollen parent being here, as usual, the prevailing one, the plant is in the way of the hybrids of the *Sedeni* group. Of the female parentage there have only remained the twisted petals and the compression of the lip, which in size and dimensions are about midway between the lips of *S. caricinum* and *S. Sedeni*, with the colour of a pallid variety of the latter. The foliage is about the same as in *S. Sedeni*. The plant was raised by Messrs. Sander & Co., and is dedicated to Mrs. Editha Boyle, the wife of the well-known literary orchidologist, Mr. J. Boyle, *Dr. Kränzlin*.

COLCHICUM DECAISNEL†

Mr. Gumbleton obligingly forwards us flowers of a *Colchicum* reputed to be of this species. They are relatively small, of a very delicate shade of lilac, without any tessellate markings. The oblong elliptic

* *Cypripedium Edithæ*, n. hybr.—Sepalo dorsali ovato oblongo acuto, sepalo inferiore oblongo obtuso excavato, petalis linearibus acuminatis bis v. ter tortis, labello æquilongis pilosis, labello profunde saccato subcompresso carinato margine præsertim basi profunde involuto. Staminodii quinque angulo postice sinuato longe piloso. Totus flos pallide roseus venis intensioribus striolatus, 2½ pollic diametro, labello 1 pollice et 3 lin. longum, 9–10 lin. profund., vix 6 lin. latum; roseum margine albidum roseo-punctulatum, gynostemium album. Folia linearia carinata late viridula.

† *Colchicum Decaisnei*, Boissier, *Flor. Orient.*, v., p. 167.

segments measure about 2 inches in length, by 7 to 10 inches in width. The base of each segment is marked internally by a narrow central groove, which serves to detain the pollen-grains, so that when an insect enters the flower in search of nectar or of pollen, he must necessarily get his coat dusted with the pollen, and convey some of it to the next flower visited. The stamens are of unequal length, and the filaments have at their base an orange patch. The three styles are slightly falcate at the ends, and bear at their extremities an ovate-pointed stigma. These characters do not wholly tally with those of *C. Decaisnei* as described by Boissier; neither are the segments internally hairy, nor the anthers winged. Possibly it may be *C. lætum*, with which species the one now known as *C. Decaisnei* was confused. These plants require to be studied in the living state, and, like most of the Monocots, they vary in cultivation.

IRIS NEPALENSIS VAR. LETHA.

IN the early spring of 1891, Mr. P. Barr received from Lieut.-Col. Stone a few rhizomes of "a fragrant dwarf Iris, gathered at an altitude of about 7000 feet near Fort White in Upper Burmah, on a spur of the Northern Chin Hills, called the Letha Range." These Mr. Barr kindly passed on to me; they have flowered this summer, and have proved to belong to an Iris, which from a garden point of view is very distinct and new, though for reasons which I will shortly give, I am led, from a botanical point of view, to regard it as being only a variety of the species, *I. nepalensis* of Don.

The *Iris nepalensis* of Don (*Prodr. Fl. Nepal.*, p. 54), the *I. decora* of Wallich (*Pl. Asiatic. Rar.*, i., p. 77, t. 86) (not to be confounded with the *I. nepalensis* of Wallich, figured under that name in *Bot. Reg.*, t. 818, for this is only an Eastern variety of *I. germanica*) is easily recognised by the peculiarities of the rhizome. This, in the resting-stage, consists of a small bud, sheathed, and completely covered up by the fibrous remains of the old leaves, from the base of which proceed a number of thick, fleshy, thong-like roots, so that it much resembles the root of *Hemerocallis*, or of an *Asphodel*. The flower, which is very fugitive, lasting for less than a day, is distinguished by the horizontally disposed, or even drooping but large inner segments, or "standards," by the large expanded crest of the style, and by the outer segment or fall bearing a conspicuous crest, cut up into a fringe, so as almost to form a beard. In a vigorous plant, the stem, a foot or more in height, bears, besides a terminal bud of two or three flowers, one, or even more, lateral flowers. The prevailing colour of the flower, a lavender, due largely to pale violet veins on a creamy ground, together with the gracefulness of its form, produce a very charming effect, and make one regret that the life of the bloom is so brief. The flowers appear very soon after the leaves begin to shoot, and the growth of the foliage is chiefly after flowering. In addition to Wallich's large plate (under the title *I. decora*), there is a very good figure in Sweet, *Brit. Flower Garden*, 2nd series, t. 11. It is with me one of the latest Irises to flower, rarely appearing until July is well on.

The plant from the Letha Range exactly resembles *I. nepalensis* as far as the rhizome is concerned. I do not think that I could distinguish the two, except that perhaps the fleshy roots of the Letha plant are more cylindrical, less spindle-shaped, than those of the other. The foliage, too, is almost identical, though the leaves of the Letha plant are rather shorter, broader, and of a darker green. Nor can I see any essential difference in the form, or even in the colour of the flower, though, perhaps, those of the Letha plant are more variable as to the depth of the colour, the dilution of the violet, and, on the whole, are of a deeper colour. I have, so far, observed very little variation in the colour of *I. nepalensis*, though I have raised many seedlings. The spathe-valves of the Letha plant are more distinctly navicular, and keeled; the ripe capsule (in both cases trigonal, with deeply-grooved sides) is shorter and broader, and the seed (which in both cases has a striking appearance, due to a large white strophiole) has a blunter, less pointed end; these are the only real differences which I have observed in the flower itself.

But the two plants have wholly distinct garden effects; for while, as I have mentioned, the flower in

I. nepalensis is borne on a stem of considerable length, in the Letha plant the flower is quite sessile, nestling among the bases of the young leaves. Moreover, while the former flowers with difficulty, and scantily, at last so far as my experience goes, the latter flowers very freely, five or six flowers being borne in succession by each tuft of leaves. Further, while the former (so my experience teaches me) imperiously demands special treatment, namely, to be ripened in late autumn by being covered with lights, or "lifted" during winter, and in the absence of such treatment, soon disappears, the Letha plant is much more amenable; a plant of it left exposed, save for a little mulching, all last winter, which was rather severe, bloomed freely this summer in late June. Lastly, while the odour of *I. nepalensis* is uncertain, the Letha plant is distinctly fragrant. In a word, while *I. nepalensis* as a garden plant is worthless for general cultivation, the Letha plant seems to promise to become popular as soon as a stock of it is obtained and it becomes known. A mass of it would, at flowering time, be most charming.

One cannot, however, or one ought not to, found a new species on the simple fact of the flower being sessile; and the differences mentioned above as to the capsule and seed are too recondite to serve as the basis for a new species. Hence, different as a gardener must consider the type and this new plant, I do not think that I ought to give the latter more than varietal dignity.

Considering how few British soldiers care to avail themselves of the botanical opportunities afforded to them in the course of their duties, how most of those sent into new unexplored regions scorn to gather the flowers, much less to collect the seeds, bulbs or roots, which we gardeners at home are longing to possess, knowing of them only by inference, I should have liked to have shown appreciation of Lt.-Col. Stone's zeal by associating his name with his plant. It would be a little set-off against the numerous Korolkowianas, Kolpakowskianas, Ostrokowskianas, and the like, by means of which we know that we owe bright spots in our garden to the good offices of Russian soldiers. But the advantages of a plant's name telling us as much about it as possible, where, for instance, it grows, has had the greater weight with me. I therefore propose to call it *I. nepalensis* var. *Letha*.

In a letter to Mr. Barr, Lt.-Col. Stone says of it: "It occurs at an altitude of about 7400 feet, and is not found below 6500, coming into bloom at the end of April" (at Shelford it flowered at the end of June). "It is not particular as to soil, so long as that is light. Where it grows there is a sharp frost at night from December to the end of February. There is usually no rain from the end of October to the beginning of March, from which time to June there are occasional showers, then S.W. monsoons and continuous rain to the end of October." This gives the lead for treatment. Keep the plants as dry as possible all through the turbulent uncertain English winter. Never let it lack for moisture from the time it begins to shoot until the foliage begins to ripen in September. *M. Foster, Shelford, September, 1892.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM PHALÆNOPSIS SCHRODERIANUM.

MR. JAS. CYPHER, of Queen's Road Nursery, Cheltenham, like all others who have it, speaks in the highest terms of the beauty and free habit of this fine Orchid, and sends two made-up sprays of a dozen flowers each to show how the different shades may be worked in for florists' purposes; the combinations arranged with Maidenhair Fern are very beautiful. Other examples of finely-flowered Orchids from this good cultivator are *Oncidium hæmatocilium*, *Zygopetalum rostratum*, *Z. maxillare Gautierii*, *Epidendrum xanthinum*, *Cattleya maxima*, *Oncidium cucullatum*, and *Cattleya Loddigesii*. X.

This fine introduction of Messrs. F. Sander & Co. is pronounced on all hands to be one of the most

satisfactory of recent times. It is free to grow, profuse in flowering, and the variation in the different specimens is so great that while all are beautiful, there are scarcely two exactly alike. When the plants were sold at Messrs. Protheroe & Morris' Rooms, the vendors exhibited a picture showing the great variation, and also one spike (taken from an imported dried specimen) showing thirty-two flowers; and to this most growers took exception. But already have the cultivated specimens marched closely up to the number of the drawing. Recently, the Rev. E. Handley exhibited a plant with twenty-three flowers on a spike, and now Mr. Jacques has one with twenty-six in the collection of Baron Ferdinand de Rothschild at Waddesdon.

ORCHIDS, &C., AT THE EXHIBITION OF ST. GILLES, BRUSSELS.

M. A. A. Peeters showed, at a highly successful local exhibition, a fine collection of Orchids, the season for which has been unusually favourable. We noticed among the lot several beautiful specimens of *Miltonia spectabilis* Moreliana, well-flowered; *Dendrobium formosum giganteum*, some fine *Cypripedium Wallaerti*, *Cattleya bicolor*, and *C. b. Measuriana*; a good example of *Miltonia Rœzlii*, the rare *Odontoglossum Schroderi*, with its peculiar flowers which have the scent of a Stanhopea; the no less rare and beautiful *Cypripedium Chamberlainianum*, several *C. cernanum superbum*, five *Cattleya labiata autumnalis*, of different shades, but all beautiful; *Dendrobium Phalænopsis Schroderi*, *Oncidium Papilio Kramerii*, a well-marked *Odontoglossum crispum guttatum*, *Cattleya velutina*, *Dendrobium densiflorum*, *Vanda Kimballiana*, some fine *Cattleya aurea*, and an excellent *Lælia elegans Schilleriana*. M. Peeters also showed a specimen, unique in Belgium, of *Zamia tonkinensis*, with no fewer than fourteen fine leaves; and, at the same time, an excellent plant of *Macrozamia Dennisoni*; a species of *Sabal*, showing analogies with *S. Blackburniana*, and *S. Adanson*, with a stem much resembling that of *Pritchardia filifera* attracted much attention. Its great leaves presented a remarkable appearance, being transversely cut and distinctively undulated; from all the divisions hung long thin filaments. This fine Palm was also from M. Peeters.

M. A. VAN IMSHOOT'S ORCHIDS.

We noticed lately the following rare specimens in this collection:—1, *Ada Lehmanni*, with a white lip, and a central line of orange; it blooms in autumn, not in spring, as does *A. aurantiaca*. 2, *Epidendrum nocturnum*, rather rare, a native of Surinam, the stems put forth flowers in various places, the flowers resemble those of *E. falcatum*; the leaves are large, curled round a little at the base. 3, *Eulophia pulchra*, rare, lip bilobed, the lobes pointed, divided by a yellow band; the background white, with reddish-purple spots. *C. de B.*

BOTANY AND PLANT-CULTURE.

[The following extracts are taken from an address by Professor W. J. Beal at the laying of the corner stone of the new botanical laboratory of the University of Michigan, June 24, 1892.]

Planted on yonder knoll by the wisdom of the State Board of Agriculture, between the laboratories of agriculture and horticulture, this second and better botanical laboratory is to stand. It was doubtless so located with the notion that botany is the right hand support of one and the left hand support of the other; or perhaps with a notion that botany is of a greater importance, and that agriculture and horticulture are her foremost allies.

In 1859, a third of a century ago, when I took my first degree at the University of Michigan, there was but one institution of learning in the United States that employed and paid a man for devoting all of his time to the science of botany. The person referred to was the late Dr. Asa Gray, who was for many years the Professor of Botany at Harvard University.

For the rapid and wide-spread interest and attention which botany has attracted in this country

within the past fifteen or twenty years, nothing in my opinion has done so much as the work performed in our colleges of agriculture, and in the United States Department of Agriculture.

In these days a well-equipped agricultural college cannot get along, so far as botany is concerned, by employing a man to teach botany who shall also be required to teach other subjects.

LABORATORY AND HERBARIUM.

Under good management a botanical department will advance just in proportion to the means at its disposal. This may be a suitable time for a little indulgence in considering an ideal plan for a botanical department of a college with as good an endowment and as great pretensions as this one. To attract students and give them good opportunities, the department should be many-sided and symmetrical. One or more of the teachers should be enthusiastic in field work—a good collector and well skilled in preparing plants for the herbarium. Very much yet remains to be done in systematic botany, as studied by those of the "old school," with all the aids that have come from histology and physiology, and embryology. The latter are indispensable in any course of botany. In an agricultural college, especial attention should be given to the study of grasses and other forage plants, to trees, shrubs and weeds.

Another broad and fertile field is the study of variation and description of our cultivated plants, subjects which have been receiving little attention from naturalists. There are many sections of cryptogamic botany of great interest and importance; among the most prominent of which in an agricultural course are the study of parasitic fungi and bacteria. For several years we have added annually 5000 or more plants to our herbarium. This should include specimens of cultivated plants, such as grown in the vegetable gardens, orchards, and those which are grown for flowers or foliage.

Such a college must have a good supply of compound microscopes, so that only one person shall have access to the same instrument during any term. New and improved instruments are all the time appearing, and we must have them or suffer the consequence of falling behind the times.

Microtomes, a host of re-agents, apparatus for experiments in plant physiology, maps, charts purchased or made to order, must be all the time accumulating, even though the garret become replete with old rubbish. Lantern views and means to use them, and conveniences for photographing objects large or microscopic are indispensable in 1892.

For years I have been experimenting and watching the effects of numerous lectures given to students on botanical subjects. I have kept reducing the lectures, and instead have given the students references to first-class books, in which they could in connection with original work, read and take notes to better advantage than when following a lecture. Our botanical books are far better and more numerous than they used to be. As nearly all of you know, for some time past, we have kept on the shelves or on the tables of the botanical class-rooms, from five to ten or more copies of such books as, *Sach's Text-Book and Lectures on Physiology*; *De Bary's Comparative Anatomy of Phanerogams and Ferns*, his *Morphology and Biology of the Fungi, Mycetozoa and Bacteria*; *Goebel's Outlines of Classification and Special Morphology of Plants*; *Strasburger's Handbook of Practical Botany*; *Bessey's Botany for High Schools and Colleges*; *Plowright's Monograph of the British Uredineæ and Ustilagineæ*; *Burill's Uredineæ, Erysipheæ and Bacteria*; *Bower's Course of Practical Instruction in Botany*; *Campbell's Elements of Structural and Systematic Botany*; *Cryptogamic Botany* by Bennett and Murray; numerous bulletins of the U. S. Dept. of Agriculture, especially those of the section of vegetable physiology; *Goodale's Physiological Botany*; *Gray's Text Book*, and *Plant Dissection* by Arthur Barnes and Coulter. The plan of freely using these books as needed in place of numerous lectures works admirably. A good library is one of the requisites of our ideal Botanical Department.

Our thrifty Botanical Club of thirty members, meeting voluntarily three or four times a month, demands some hints and some time at the hands of the teachers in this department.

BOTANIC GARDEN.

Greenhouses in variety we have already. Some day we should have one for use in summer in which to grow plants of cold regions. In these houses, to serve botany best, should be placed a greater variety of plants to illustrate certain points of culture, or

plants of economic importance. We have a botanical garden, recently much enlarged, but still with room enough for far greater extension. In such a garden there are, or will be, sunny slopes and shady banks, ponds and bogs, and an arboretum for specimen trees and shrubs.

Here we have, perhaps, 200 acres, which contain our buildings, the orchards, gardens, lawns, groves, and playgrounds, saying nothing about experiment plots and the fields to the south of us. Let us imagine the valley along our lazy brook filled to the top of its banks on either side with hardy herbs and shrubs, with extensions in suitable places along the flats of the Red Cedar, and on the north bank of this quiet stream, from the boiler-house to the west entrance at the foot of the hill, a distance of nearly three-quarters of a mile. The plants in question should be to a great extent grouped by families and genera, each plant occupying a much larger space than is customary in any botanical garden which I have ever seen or read about. For example a patch of *Viola pedata* should be well grown, and not less than 3 feet in diameter; of *Helianthus orgyalis*, 6 to 10 feet; *Peltandra undulata*, 8 feet or more. So of sedges and grasses, which have not been introduced for use in masses, as they might well be. In numerous cases, whether we wish it or not, it is better to grow plants much alike each other a little way apart, with something else between them, especially where they are inclined to mix by seeds or root-stalks.

Again, I have learned by experience, that in very many cases it is easier to shift plants to other places every few years than to take up and change the soil and reset in the same spots. A rotation of crops is a good practice for a botanical garden, as well as for fields of grass and grain for the farm, or berries and vegetables for the garden. This occasional shifting of plants may seem to some too unstable for a well-planned botanical garden. On the campus, in connection with our large groves and groups of trees and shrubs, could be planted one or more good specimens to represent many families or genera of hardy woody plants. The scattering of duplicate trees, shrubs, or herbs is unnecessary, and tends to confusion in a botanical garden, but it may often be just the thing to produce the best effect for ornamenting a campus, a park, or a cemetery. For such a garden, we should need a map, lists of plants in alphabetical order, and everything well labelled.

With a course of instruction like ours, extending through the summer months, a botanical garden is of much greater value if possible than it can be to a college which takes a long summer vacation. Such a garden, with all the accompaniments to which I have referred, could not fail to make itself felt in advancing agriculture and horticulture as well as botany. This campus would more than ever interest visitors from all parts of the State, but would be of great value to the neighbouring city, and serve the place of one of its parks. In more than one of my former reports I have dwelt at length on the relations of botany to agriculture, and attempted to show the great value of botany as a study to cultivate the observation and strengthen the reasoning powers.

We have already made a good beginning towards such a garden in the broadest sense; including species and varieties in the experiment station, we now have not far from 5000. To maintain an establishment in a creditable manner money is needed, I will not say how much, but considerable, the more the better.

This college is supported mainly by the United States government, and to a considerable extent also by the State. Perhaps this condition of things may tend to prevent endowments by wealthy persons. The endowment of a botanical garden is comparatively a new way of spending a fortune in this country, and perhaps in any other country. The only instance that has come to my knowledge of a person liberally endowing a botanic garden is that of the late Hon. Henry Shaw, of St. Louis, Mo.

The chief use of a botanical department here is to give instruction to students, especially the sort of botany of greatest value to the farmer.

RESEARCH.

Another object should not be lost sight of, viz., original research. If the teacher's time, and that of his assistants, is fully occupied with routine work, nothing can be done by way of investigations. A college will fail in a very important part of its work, if no provision is made for research by its teachers. This gives them a chance to grow, inspires them with enthusiasm, and is a great help to the students, and to the world at large.

On this subject, Dr. Farlow, one of Harvard's brightest men, says, "What does investigation mean?"

It does not mean anything which is of necessity capable of partial application at first sight. The investigator is a dull, plodding mortal, working away year by year. But, at last, he discovers something which is of benefit to all mankind. You should not hurry the investigator—we must have a report in six months; we must have a report in a year; tell us about this thing, about that thing, or about the other thing. An investigator is one who knows what he is about, and he knows a great deal better than you do. He is one who has been trained, who has studied deeply, who is thoroughly in earnest."

Dr. Trelease, the director of the Shaw Gardens, says, "No one who has not himself done original work can appreciate the slowness with which results are obtained." I have often heard similar remarks from Dr. Gray, one of the most industrious and successful of investigators of the present century.

To summarise: I note the rapid progress which botany has made in this country, attributing the increased number of workers largely to the agricultural colleges and the United States Department of Agriculture. At present, botany is recognised in all of our best colleges as an important part of instruction, for the knowledge, culture, and discipline it affords. In these institutions investigations in great variety are carried on in all families of plants, from the highest to the lowest. For the best results a botanical department must be many-sided, with teachers who are experts in numerous directions. We must have a well-kept and continually-growing herbarium. Such a department should have as many compound microscopes as there are students using them in any term, and much other apparatus for experiments and photography. Duplicate volumes of books are needed, besides a generous library. A botanical club or society, which shall meet as does the one here, every week. The department will not be complete without a museum of plant products. There must be numerous greenhouses, varying in temperature and light and moisture; also a botanic garden and arboretum. Original research must not be neglected nor crowded out, nor should the study of varieties of cultivated plants.

A liberal and uniformly increasing and permanent endowment is indispensable. In addition to what the nation and the state are likely to afford for this purpose, we seek a cultured gentleman or lady of wealth, who shall interest himself in a most substantial manner. In aiding such work follows a guarantee that the name of such person shall be kept green, bear frequent blossoms, and a liberal harvest of fine fruit for centuries to come.

UNITED STATES.

THE COLUMBIAN EXPOSITION.—A highly-interesting consignment of plants was recently received from the Australian Government, comprising Tree Ferns, Stag's-horn, and Filmy Ferns, the majority of them arriving in excellent condition. The specimens of *Platycerium alcinorne* are very fine; they are established on the trunks of trees, and being admirably packed, they bore the journey well. Twelve specimen plants of *Macrozamia spiralis* accompany this exhibit, and three plants of *M. Denisoni*. Among the Tree Ferns, there is an interesting twin, consisting of two large plants, *Alsophila australis* and *Dicksonia antarctica*; these two plants are joined closely together for about 3 feet up above the roots. It is Mr. Thorpe's intention to make a display of Filmy Ferns in the grotto composing the interior of the artificial mound, now being erected under the main dome of the horticultural building. This building certainly occupies the most charming site on the grounds, with the lagoon and island in front. It is a vast structure, dwarfing, by comparison, the Horticultural Hall at the Centennial Exposition.

At present preparations are being made for the dedicatory ceremonies in October. Owing to the immense space to be adorned, the decoration must consist of showy plants in masses. Early Chrysanthemums will be used, huge plants of the African Marigolds, planted in boxes; *Salvias*, *Cosmos*, and *Coleus*, in addition to the Palms and other decorative plants. Some of the Pansy beds in front of the building are now being planted; they will be protected during the winter by frames. Some 80,000 plants are now put out in temporary beds at the back of the building. These plants will all be wintered in cold frames.

The heating apparatus, now being arranged in the Horticultural Building, is new to us here, though Mr. Thorpe says it was tried at Chatsworth years ago. It is the Polmaise system of hot air, and, with new and improved apparatus, is said to be thoroughly efficient.

The *Calceolaria* display will be looked for with much interest, especially by those who have seen it as it is grown in Great Britain. It is a very difficult plant for American growers, suffering severely from our hot summers. At the Exposition grounds, Mr. Thorpe has the young plants plunged on a bench having a false bottom, in which ice is stored; this gives the cool-bottom temperature needed, which cannot otherwise be secured. *Calceolaria* seed has been provided by many prominent European firms, and it is all being grown under precisely the same circumstances, giving a fair test to the different strains. *Primulas* are being grown in the same way, and we expect to see a superb display during the winter. A quantity of Cacti and Agaves, including a picturesque lot of *A. aloifolia* from Florida, will be utilised in forming an Arizona garden next year; fine decorative specimen plants are being frequently received from private collections in America, and we are promised a large display from Canada.

The West Indies furnish an interesting display of economic plants, already received; it includes Sugar-cane, Annatto, Coffee, Cocoa-nut, and other plants of commercial value. The Californians promise a special display of Pampas-grass, which forms an important industry in that State. *E. L. Taplin, Chicago, U.S.A.*

DAMPING-OFF OF THE BLOOMS OF CHRYSANTHEMUMS.

Now that the blossoms are fast developing, complaints of damping will soon reach us from growers of exhibition blooms. This is an evil which the cultivator has to contend with, and than which nothing is more troublesome in the whole range of Chrysanthemum growing, and many hours of anxiety would be spared us if damping-off were unknown. I have not yet met anyone who grew ever so few plants on the large-bloom principle, but had experienced loss of bloom from damp.

Opinions differ very much as to the cause, but I will explain how it affects the flowers and its cause, and show the best method of checking it. It will perhaps be best to state, at first, how the flowers are affected, for the information of those who may have had no experience of it, owing to their not cultivating plants for large blooms for exhibition, or for home decoration. There are two sorts of damping, one which affects the entire flower in its earliest stage of development, and the other which causes its more gradual decay. The former is often caused by a sudden burst of sunshine coming after a period of dull weather, which has made the petals soft, immature, and have only just commenced to unfold. I have seen partly-expanded blooms go off entirely on the morning following a bright day, just as though they had been parboiled. The most annoying form of damping is the following: Take for instance a large, three-parts expanded bloom of *Empress of India*—the florets appear quite solid, and the prospect of securing a handsome bloom very probable; but a close examination will disclose several brown specks, which a cursory glance would overlook, that resemble dust in appearance. In a short time—the next day, perhaps—the dust-like specks will be found to have increased considerably, quite half the florets being attacked; and after the lapse of a few days the disorder will have spread so rapidly that large holes can be seen in them, and if this continue a few days longer the flower is spoilt entirely. It attacks the Japanese varieties in exactly the same way. If a floret in the first stage of damping were placed under a strong lens, a tiny blister-like bubble pushing up under the surface of the petal would be observed, and if the epidermis is broken carefully, a liquid would run from the wound. I have pointed out the manner in which the blooms

are affected by damping; I will now explain my views respecting the cause.

I am decidedly of the opinion that the main cause lies at the roots. I have repeatedly proved that those plants on which the flowers damp are not in a healthy state at the roots. It may not always be that defective root action is caused by excess of stimulants applied to the roots, but in the majority of instances it is so. The plants are gorged with artificial stimulants to make them as gross and thick as possible, to produce the extremely large blooms there is such a hankering after nowadays, that the

heard of was in a place whence show blooms went to exhibitions. Here the Japanese varieties were in the charge of one man, while another attended to the incurved. The former, thinking to outdo his rival, incautiously applied a too-strong dose of chemical manure, which the plants would have been better without, as it caused a serious check. The blister-like spots on the petals previously alluded to go a long way to prove that damping is, in the main, a constitutional disorder. Who ever heard of blooms damping that were produced on plants grown for no other object than home decoration, and which

thus it is that it is more prevalent in wet or foggy than in dry frosty weather. Where houses are not tightly glazed, and rain drips in upon the plants and flowers, the evil is also sure to be felt. Plants that have been grown within the shade of trees, or too near high walls, often lose flowers by damp, which proves that the want of maturity in the growth of such plants is in their case a cause of damping. Now as to the best treatment, not only to prevent damping, which arises from preventable causes, but to check it when brought on by means of manures acting on the roots. At all times—day and night—



FIG. 72.—TENNYSON'S HOUSE, FARINGFORD, ISLE OF WIGHT. (SEE P. 457.)

roots are crippled, and are thus prevented from carrying out their proper functions. I have seen and experienced many cases of the kind, but one which was, perhaps, more striking than any other, occurred during the season of 1891, and may serve as an illustration. A well-known cultivator of Japanese blooms in the South of England had amongst his many fine blooms one of Mrs. Alpheus Hardy, and, wishing to improve the already fine flower, applied an extra strong dose of sulphate of ammonia, with the result that in two days the bloom was entirely spoilt, whereas if he had been content with an already good enough bloom, this experience would not have been obtained. Another instance I

had never received anything but clean water, with, perhaps, an occasional application of liquid manure from the farmyard?

Damping can be produced by atmospheric conditions only, but no one would so wilfully ignore simple details of management who had the least experience so as to spoil them in that way. If the temperature of the inside of any house is allowed to fall too low during the night, thus rendering the surface of the petals cold, the moisture in the house will naturally condense on it, and when in this state the sun should shine on them before the air in the house has been ventilated and artificial heat applied, damping is almost certain to follow, and

the air of the house in which the plants stand should be buoyant, and this can be secured by warming the hot-water pipes in dull or foggy weather, or furnishing a proper supply of fresh air when the weather permits. It is difficult to fix a certain temperature for Chrysanthemums, houses and situations varying so much, and it is much better if the grower be guided by the "feel" of the air on entering a house. If neither stuffiness nor chilliness strikes one upon entering, the air is all right.

Too much artificial heat renders the petals soft and flabby, and the flowers are spoilt in their final development, the grower ignoring the fact that Chrysanthemums are hardy plants and should receive

suitable treatment as such. Some persons think damping is caused by a lack of ventilation, and at once throw open the ventilators and doors as wide as possible, causing a direct draught. My advice is almost the reverse of this: Afford a fair amount of air, but in such a manner that draughts are avoided. Warm the hot-water pipes, so as to render the air buoyant, admitting fresh air freely, at the front if a lean-to house, and a little at the top, to let out excessive moisture. It is not the quantity of air that is applied that answers best, but the manner in which it is admitted. Shade is very important. The sun should not be allowed to shine directly on the plants after they commence to unfold their florets, especially if they have been highly fed, or the weather has been dull, rendering the florets flabby. The best kind of shade is a roller blind placed outside the house, no permanent shade being employed, or the colour of the blooms, if they are far from the glass, will be spoiled to a certain degree. The rule should be, no sun no shade.

The water draining from the pots, if the floor is non-absorbent, should be dried up as quickly as possible after watering. Decaying leaves and petals should be removed as soon as noticed, everything being done to render the air sweet and pure. It has been said that unslaked lime, kept in boxes or big flower pots, placed amongst the plants, would act as an absorbent of moisture, and in this way exert a beneficial influence by preventing damping, but not having tested its efficacy in this way, I am unable to say anything about it. Where damping is caused by the injudicious application of artificial manures, I should doubt the advantage of lime used in this way. *E. Molyneux.*

ROUND LIVERPOOL.

(Continued from p. 433.)

MESSRS. R. P. KER & SONS, AIGBURGH.—In this neat and well-kept nursery, we find a model of what a nursery should be when it is intended to grow well such things only as are in demand, and which can be grown to perfection in that particular nursery. The bane of many nursery gardens is the struggling continually to grow things which repeated trial has proved are not adapted to the place, or rather, for which the place and its accommodation are not adapted.

The outdoor and indoor departments are fairly balanced, so that it is difficult to say which is the more important, as Mr. Ranger, the clever manager to the firm, allows nothing to be neglected or carelessly done. At the entrance is a bright flower garden, about which stand some large standard and pyramid Bays. Beyond are the well-kept borders, and banks of rare shrubs, fronted by specimens of *Retinosporas*, and displaying a great wealth of variegated foliage, among which, remarkably striking, were *Syringa Emodi variegata*, *Cornus sibirica*, *C. Späthii*, *Corylus avellana aurea* and *C. purpurea*, *Hamamelis aurea*, and various forms of golden-leaved Alder, and other shrubs and trees. Among berry-bearing shrubs, *Cotoneasters* were remarked, and of the pretty genus, the purple-berried *C. Fontainesii*; while in all the broad beds the wealth of perfect, clean, and well-grown *Hollies* pointed to valuable stock, and gave present effect.

In the quarters are large quantities of things for forcing or for decoration in town. Among these, one of the most striking is a large patch of neat plants of *Rhododendron blandum*, a specialty here, and which is said to force easily to be in bloom at Christmas. The flowers, when forced, are nearly white, and the plant is distinct, and most floriferous. Other *Rhododendrons* are grown in quantity for the same purpose, but none come in so early as *R. blandum*. *Azalea mollis*, too, receives much attention, and the plants are compact, and covered with buds; and among the quantities of things grown for potting-up, were numbers of tree *Ivies* and other plants of a dwarf habit. A long row of young plants of the true *Balsam Poplar* was remarked. It is said that that usually planted under that name is the Ontario *Poplar*, which is inferior to the true one in many respects.

Glass-houses.—The main block consists of a lofty dome-topped central structure, and six ranges radiating from it, and communicating with the potting-sheds and other offices. The other houses in special blocks are of various heights and aspects, filled with sound, saleable plants. In the first large span-roofed house leading to the one in the centre, a fine lot of large *Camellias*, chiefly double whites, for cutting, *Carnations*, *Heaths*, *Heliotropes*, and other plants in flower, were found. In the second division, decorative *Palms*, *Grevillea robusta*, and some pretty plants of the variegated *Ficus elastica* which was sent out from this nursery.

Cyclamen persicum are done here equal to those seen in the London market, and several houses were full of these plants in a superb condition, the earliest of which were just beginning to flower. For the strain, it may be said that it is of the *C. p. gigantea* type, and the crimson varieties of an intensely bright shade of colour. *Amaryllis* are cultivated in large numbers, and show signs of careful hybridisation, the Aigburth stock exhibiting marked improvement, especially in the light colour, on some of the English and best continental strains which were bought to work upon. Of these bulbs, there are some thousands, in various stages, and in fine condition.

Pot and climbing Tea Roses follow in other houses entered; and in the tall central house, and in some of the other houses, *Kentias*, ranging from 1 to 10 feet in height, and in all the sizes, well-furnished, and wide-spreading in proportion to their height, were observed—a large and fine stock of plants.

The Aigburth *Crotons* are known all over the country for their fine colour and healthy development, and the houses are filled with such a great variety of brilliantly-coloured kinds that a selection becomes difficult. *Croton Golden Ring* is a charming thing, with foliage bright red and green at the base, which gradually change until the golden-yellow top is reached. *C. Aigburth Gem* is a very compact form of *C. interruptus*, with red, yellow, and green, beautifully blended in its graceful foliage; *C. Aigburthensis* has very handsome narrow, golden and green leaves, and is the best of the *C. angustifolius* class; *C. Hawkerii* and *C. Madame Heine*, which some complain of as being awkward growers, here branch out from the ground-level, and the foliage colours well; *C. Reidii* is very fine, and, indeed, grown as the *Crotons* are here, all were good.

Among the rest of the general stock, were noticed quantities of *Araucaria excelsa*, *Asparagus plumosus*, *Dracenas*, *Caladiums*, *Gloxinias*, *Begonias*, *Adiantum cuneatum*, and other Ferns, *Tillandsias*, *Ixoras* in bloom, *Pandanus Veitchii*, white and red *Lapagerias*, *Azaleas*, and *Heaths*.

Mr. Ker and Mr. Ranger, who conducted us round their well-appointed establishment, evidently had faith in the quality of the stock, for no word of praise was offered on their part, unless in reply to a question as to the merits of certain plants.

(To be continued.)

FORESTRY.

TREES FOR MARSH AND MOUNTAIN.

THE Cluster Pine, *P. pinaster* (Aiton), is indigenous to different parts in the South of Europe and elsewhere, and was introduced into this country by Gerard about the end of the sixteenth century; and, although it has never been planted to any great extent as a timber tree for utility and profit, yet it possesses some qualities of no mean order, which ought to recommend it to the notice of the planter. Although it is one of our best Pines for planting on dry, sandy ground in marine situations, yet it is by no means confined to such, as I have planted it with perfect success on reclaimed marsh ground, peat-bog, and cold, stiff, adhesive clay-soils in inland districts of the country. I have seen it repeatedly stated that the Cluster Pine would not grow to a useful size on peat-bog and stiff clay soil, but this is an error, as I find trees that I planted on both classes

of soil upwards of thirty years ago to be in perfect health, and making rapid progress. Under ordinary circumstances, it attains a height of from 60 to 80 feet, with a uniform thickness of stem, which is generally free of knots or blemish of any kind for a distance of about three-fourths its height from the ground. When the wood is cut up for use it is found to be resinous, well-packed, and capable of being used for a variety of purposes. When planting this tree on loose sand, soft mossy ground, and peat bog, I have experienced considerable difficulty in getting the plants established, as they are generally deficient in side-roots, and are thereby easily upset by the wind; and when trees are not kept in a perpendicular position during the early stages of their growth, they are apt to form crooked stems, which detracts from their value for ornament and utility. Instead of planting this tree on such situations, I have found the best results by sowing the seed on the spot where the trees are to remain, as their strong tap-roots anchor them firmly to the ground, and they give no further trouble in this respect. On the other hand, when it is desirable to raise the plants in the nursery, the seed should be sown about the end of April on loose sandy soil, formed into beds 4 feet wide, and as it is best to allow the plants plenty of space to promote a bushy habit of growth, 1 lb. of seed should be allowed for every eight lineal yards of a bed the above size, covering them with about half an inch of fine pulverised soil. The seedling plants should be removed from the bed, and planted into nursery lines about 10 inches asunder, and the plants about 3 inches apart in the rows. This planting-out should always take place during the first autumn or spring after the sowing of the seed, and when the plants have been one season in the lines, they are then in condition to be transplanted to the forest ground, where they are to remain, but on no account should they be allowed to remain in the nursery for a longer period than two years after the time of sowing the seed. The contour of this tree is sharply conical, and when planted in blocks by themselves, they should be allowed more space than the Scotch Fir or Larch, otherwise they will spindle up into tall bare poles, which are comparatively useless as timber trees.

There are several interesting varieties of the Cluster Pine, one of the best of which is *P. P. Hamiltoni* (Tenore), which was first introduced into this country in 1825 by Lord Aberdeen. It is a true Mountain Pine, and is indigenous to the hilly parts of the country about Nice. As a variety, it certainly differs widely in many respects from the species. It makes a splendid specimen tree for the park or lawn, and as it is well clothed with leaves, branches, and spray, it is very attractive and ornamental all the year round, more especially in winter, when loaded with its large ovate-shaped cones, which are generally produced in pairs, whereas the cones on the species are of a smaller size, sharp-pointed, and generally produce in clusters, hence the name. Gordon, in his *Pinetum* (p. 250), tells us that the leaves of *P. P. Hamiltoni* are of a paler green colour than that of the species, but I have raised both kinds from home-saved seed in the nursery side by side, and found the reverse to be the case.

No doubt soil and climate may alter the appearance of the foliage to a certain extent; but in Great Britain and Ireland, under very different conditions as regards soil and climate, I have found the leaves of the species to be of a lighter green colour than that of the variety under consideration. The roots of this variety, however, are generally better furnished with small fibres than that of the species, and in order to promote its best form of development, the ground should be well broken up with a pick, and thoroughly drained, where requisite, before planting the trees, as they are very impatient of stagnant water at the roots. This variety is so widely different in its roots, stem, branches, foliage, size, shape, and arrangement of its cones, that I am strongly of opinion that it is no variety at all, but a very distinct species of itself. I have, however, had a very distinct variety of this Pine sent me under the name of *P. P. maritima*, which is very like the

species in many respects, and as it grows equally well under the same conditions, it is well worthy of being used by the planter. The cones of this variety are of a lesser size, and are produced in larger numbers than that of the species; its leaves also are less than those of the Cluster Pine. All the varieties are highly suitable for shelter, ornament, and utility in marine situations in the congested districts of Ireland, where it is desirable to establish covert and shelter within the influence of the sea breeze. When the trees are to be raised from seed sown on the spot where they are to remain, two people should be employed, one of whom should

Dormer family, but now in the occupation of Mr. Alderman George Nelson, of Warwick. The boundary of the parish is somewhat unique; its eastern one appears to be the middle of the track of the Great Western Railway, which occupies the old bed of the river Cherwell, for the accommodation of whose waters an entirely new channel was made by the railway engineers. Rousham is an ancient place, the Domesday Survey of 1086 mentioning it as being one of the possessions granted by William the Conqueror to certain of his followers. In the reign of Henry VI., Sir Thomas Chaworth is described as holding the manor of Rousham, and the

walks at Rousham in the garden of the Worshipful John Dormer, Esq., where there are no less than five, one under another, leading from the garden above down to the riverside (Cherwell), having steps at each end, parted with hedges of Codlings, &c." These terraces, it is said, have ceased to exist, but there are still walks under noble trees leading down to the river banks.

An illustration is afforded at Rousham Park of a taste that at one time prevailed among noblemen and persons of wealth, viz., to adorn their estates with sham ruins, the Earl Bathurst of the period being in the van of this singular movement. Accordingly Sir Charles

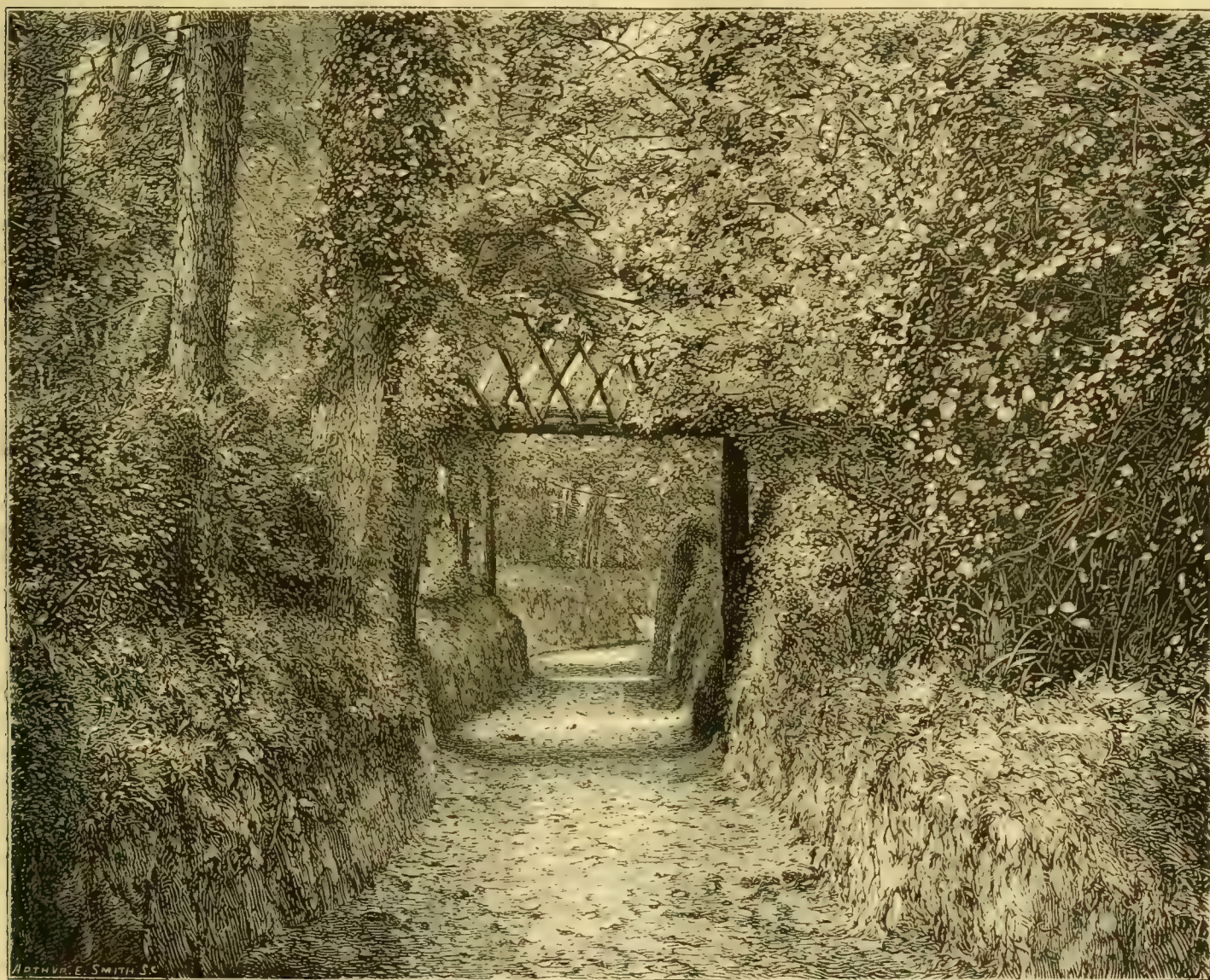


FIG. 73.—BRIDGE IN THE LATE POET LAUREATE'S GARDEN, FARINGFORD. (SEE P. 457.)

break the surface of the ground here and there with a draw-hoe, while a second person drops a few seeds on the spot thus prepared, and finishes by giving the soil a scuffle with the foot, which is all the covering the seeds require. I have found the month of April the best time of the year for performing this operation. *J. B. Webster.*

ROUSHAM PARK, STEEPLE ASHTON, OXON.

THE village of Rousham borders on the Great Western Railway a few miles north of Oxford, and close by is the Park, and the family mansion of the

local chronicler, with a touch of sarcasm, remarks that "Chaworth appears to have somewhat resembled Lord Overstone, of whom it is said the difficulty is not to say in which counties he has real property, but in which he has not.

In May, 1635, the estate of Rousham was conveyed to Robert Dormer, and, notwithstanding the troublous times of the great rebellion, Rousham was speedily improved by its new proprietors, for in 1676 Dr. Plot described it as "one of the structures of the minor nobility," meaning, no doubt, the landed gentry, "that show a great deal of either of past or present magnificence." It was then the property of John Dormer, Esq., whose garden walks are thus described:—"For a descent, there are none like the

Dormer, the then owner of Rousham, erected on a piece of his freehold land a pile of rough masonry with three lofty arches, the centre one being the tallest and widest, intending, it is thought, to represent a part of the gate-house of a castle, or of a monastic building, though it was overlooked that semi-circular arches are inconsistent in structures of that date. This erection, which is visible from the railway, appears to have had a further utilitarian purpose, as, being in a direct line from Rousham House to Aynho House, it directed the eye to a system of flag signals, which the families adopted to signify absence and presence, and other telegraphic signals. Beyond this erection stands the mansion, which occupies the rising ground, and contains a mixture

of the ancient and modern. It is low, and somewhat heavy-looking; it occupies a considerable space of ground, and on one side lie the kitchens and other outbuildings, the laundries, stables, &c.; and, immediately contiguous to these, the church and small villages, the principal street of which is a cul-de-sac.

In the pleasure grounds and park are fine examples of Beech, Elm, &c.; Horse Chestnuts are also very fine indeed. The trees along the banks of the Cherwell were already taking on to their foliage warm autumn tints. A broad stretch of sward on the north-east front of the mansion falls away to the pleasure grounds; on the south-west there are riband borders of bedding plants, with beds of Begonias that do admirably. The walls of the mansion are clothed in various places with creepers. A spacious conservatory is on one side of the mansion.

Rousham boasts an excellent kitchen garden, well walled-in, and, like the remainder of the grounds, admirably kept by Mr. H. Wingrove, the gardener. As a successful cultivator of kitchen garden crops, Mr. Wingrove takes high rank. It was here the famous Rousham Park Onion originated, which is a very fine form of the White Spanish or Reading. This and the Improved Wroxton are the two main varieties grown; the latter a fine reddish-brown Globe Onion, solid in the flesh, and an excellent keeper. Globe Artichokes do well at Rousham; the Ne Plus Ultra Runner Bean was very fine; near the Bean was a fine breadth of New Zealand Spinach. A line of Ne Plus Ultra Pea from a late sowing, and just coming into bearing at the middle of September, was remarkably free from mildew. Mr. Wingrove said it put in appearance, but by dusting the soil about the roots and the lower foliage with soot, it not only removed the mildew, but greatly helped the Peas. A large piece of the Improved Wroxton Brussels Sprout was very fine; and of Celery, Wingrove's Selected Aylesbury Prize Red seemed to be perfect.

On the walls Plums, Pears, Peaches, Nectarines, Apricots, &c., were largely grown. The Apple and Pear crops were thin. Bush fruits do well, and are somewhat largely grown. Strawberries grow well, and bring heavy crops; the two varieties mainly grown are Vicomtesse Héricart de Thury for an early forcer, and President to succeed it. These two are prominent in the open ground. Mr. Wingrove highly praises Vicomtesse as a forcer, and states that he can get thirteen and fourteen fine fruits on a plant at a time, not large, but well-coloured and finely-flavoured. The station for Rousham is Heyford, and the grounds are reached in a short time by a pleasant road. *R. D.*

THE ROCK GARDEN.

ERIGERON MUCRONATUM.

This is one of the most peculiar autumn-flowering plants I am acquainted with. When the blooms open, they are for all the world like common Daisies, but gradually the petals assume a pink tinge, which gradually deepens into a full rose colour, which renders it really a pretty object, with several colours on a plant at the same time. This Erigeron is very suitable for the rockery, growing but 4 inches high, with a somewhat straggling habit. *E. M.*

FRUIT REGISTER.

COE'S GOLDEN DROP PLUM ON A NORTH WALL.

THE heavy crops of excellent fruit lately gathered from two trees of Golden Drop Plum growing against north walls, go to show the wisdom of the proverb, "Never to place all your eggs in one basket," inasmuch as trees of the same excellent Plum growing on south and east walls bore no fruit this year, the blossoms having been destroyed by frost, whilst the trees on the north walls, being late-flowering, escaped injury. *H. W. W.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

SHOW AND FANCY PELARGONIUMS.—Plants which were cut back after blooming, and have broken away freely, may now be shaken out and repotted, before the young growths get much advanced. The older specimens should have most of the old soil shaken from them, and at the same time cut back any of the straggling roots, afterwards repotting them into pots one or two sizes smaller than those they previously occupied; and when the roots have penetrated freely to the sides of the pots, they should be shifted again into larger ones. A good compost for these plants is made of three parts turfy loam, one of decayed manure, which has been previously run through a fine sieve, and one of leaf-mould, with the addition of a little soot and sharp sand in sufficient quantity to keep the whole porous. Before potting, have the pots washed thoroughly clean, and perfect drainage added. Guard against overwatering until the roots have taken possession of the fresh material, as with light syringings overhead early in the afternoon on fine days, very little water will be required at this season of the year. Keep a sharp look-out for green-fly, and as a preventive, a light fumigation occasionally will keep them clear. Place the plants in a cool-house or pit, well up to the glass, giving them plenty of air on all favourable occasions.

ZONAL PELARGONIUMS.—Plants which have been grown specially during the summer for winter blooming should be removed forthwith into their winter quarters, taking care to clean plants and pots before taking them inside. Avoid overcrowding; leave sufficient space between each plant, that they may be examined before water is given. Keep the plants well up to the glass, and assist them occasionally with doses of clear manure-water. A temperature between 50° to 55° will be found suitable for them during the winter months.

LACHENALIAS.—These most useful bulbous plants may be grown by anyone having a structure where the temperature can be kept from 40° to 50°. No time should now be lost in turning the bulbs out of the pots in which they have remained during the resting period. Sort them into different sizes, which will ensure a uniform growth in the different pots. Three parts rich friable loam, one of leaf-soil, with a little decayed manure, and sufficient sharp sand to keep it porous, will suit them. Place the bulbs about three-quarters of an inch apart in the pots, afterwards covering them with about half an inch of the finest of the compost. When the potting is completed, plunge them in a cool frame, giving only sufficient water to keep the soil moist; and as soon as they commence to throw up leaves, give them plenty of air on all favourable occasions.

CALADIUMS.—These will now be getting past their best, and should be allowed to ripen off, withholding water for a time, so as to check the growth of the plants. Place them all together in a structure where the temperature during the autumn and winter months is not allowed to fall below 60°, as should they be kept in too low a temperature, the tubers will assuredly decay. Gesneras, also Alocasias (which die down to the root), Achimenes, and Gloxinias survive the winter best when treated like the Caladium.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

POTATOS.—These will require more attention the first few weeks after storing than later in the year. If at all diseased when lifted they should be gone through weekly, as this work can be done in inclement weather. Early kinds, such as Myatt's Ashleaf and second earlies, especially large tubers, are often the worst keepers. Seed tubers should now be on their shelves, and kept cool by free exposure in fine weather.

CELERY should be earthed up on all favourable occasions, though, as I have previously explained, there need be no hurry with late kinds for spring use, as the frost does not injure the green tops when well hardened so much as it does blanched heads. A dressing of soot, salt, or fish manure will do much good before earthing up. I know of no better protecting material than thatched bundles made to fit the rows. If the weather is severe, dry leaves or

litter may be used in addition. For late rows I do not advise protection if a hardy medium-sized kind is grown.

CHICORY should be lifted, and stored up in the root shed, and they will give a supply of tops all through the winter if a few roots are placed in the Mushroom-house weekly. The Witloef is excellent for this purpose, and should be grown in all gardens, being one of our best and most readily grown winter salads, and of fairly good quality when cut about 4 to 6 inches, and served like Seakale. Leave about one inch of the base of the leaf stalks of Chicory. Salsafy and Scorzonera should be placed in the root store in moist soil, sand, or ashes. These are excellent vegetables, as they can be kept till late in the spring, and when used at that time are most valued. When stored in a warm place they shrivel badly, so that an outhouse is best, and the roots stocked with plenty of soil between them, just protecting from severe frost.

ARTICHOKES of the Globe section should have the loose leaves removed, and some short litter placed over the roots, cutting down the old flower-stalks to the ground; and in case the roots are large or weak, a dressing of manure or wood ashes before adding the litter will do good. Jerusalem Artichokes will now have completed their growth, and the tops may be removed, and the roots lifted for use if required, but these are best left till later. If protection can be given by covering the surface with litter to keep out frost, or a portion may be lifted and stored like Potatos, as then they can be readily got at in severe weather. The newer Artichoke, or Stachys tuberifera, is likewise best when left in the soil. It is quite hardy, but for convenience should get a little litter over the surface in severe weather.

CABBAGES, ETC.—No delay should take place in planting out the succession lot of Cabbages. These will be found serviceable in case any of the earlier sowing run. It is advisable to finish planting as soon as possible, and to plant a good number now, as this lot usually turns in early in May. Coleworts now will be plentiful. Some soil should be drawn up to the rows of those planted late for spring cutting. If any of the hardy green remain in the seed bed, they may be planted 6 inches apart each way, and will be useful in the spring, as these do not run so quickly as the Rosette.

The last planting of Endive should be made in places where protection can be afforded. The large-leaved Batavian sometimes succeeds in ordinary winters at the foot of a south wall or on a raised border. They are worth a trial, and in severe weather may be covered with boards, bracken, or litter. Those planted early will now be ready for use, and may be blanched by means of tiles, pots, or boards, or tied up, lifted, and placed in a dark house. The Endive in frames for later use should now be covered at night, and heavy rains kept off by the lights, at the same time giving abundance of air whenever possible.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

DOUBLE-GLAZING FOR THE PHALÆNOPSIS-HOUSE.—Writing on protection from cold last week, I omitted what seems to me to be an important matter, so far as the general culture of Phalænopsis is concerned. We have the system of double-glazing here, both for Phalænopsis and East Indian Orchids, and find it invaluable as a means of keeping the temperature of a uniform warmth without the use of much artificial heat, and in completely preventing the condensation of moisture on the inner surface of the roof-glass—a frequent cause of watery spots appearing on the leaves, and which lead to loss of leaves or parts of them. Those who have hitherto been unsuccessful with these Orchids, should try this method of double-glazing, under which our plants do so well, of which there will be no doubt when I state that many of the leaves of Phalænopsis Schilleriana are from 12 to 15 inches long, and from 3½ to 4½ inches broad; while those of *P. amabilis* and *P. grandiflora* are proportionately large, and spotting of the leaves rarely occurs. In the south of England, or other favoured places, or where the houses are sheltered by art or Nature, double-glazing may seem superfluous; but in the Midlands and the North, if the houses are much exposed, double-glazing has great advantages. In this case, the lights should be constructed—using squares of glass of a large size—so as not to have a great number of sash-bars to obstruct the light; these should be fixed so that a space of 4 or 5 inches is left between the two roofs,

provision being made for top ventilation [and for thorough cleaning of the inner space, which becomes very dull in time, and which no amount of syringing will free from dirt. *ED.*]

MANURING ORCHIDS.—Our plants, growing, as they needs must, under conditions more or less artificial, require something in the way of a stimulus to growth, and if this be afforded in moderation, and with due regard to the quality of the water used, whether it be river-water flowing through fertile lands, and necessarily more nutritious than well-water, or merely rain-water, much will depend on the health of the plants, and the nature of the compost in which they grow. Taking all these points into consideration, manure may be applied with advantage to Orchids, provided their ventilation is properly attended to. The important questions of when and how to apply it necessarily arise, and here, I fear, we too often work in the dark, and much has yet to be learned by observations and experiments carefully made. However, it has so far been proved beyond a doubt that weak manure-water made from cow-dung or sheep's droppings is of benefit to most Orchids during the growing season, and I have in previous *Calendars* recommended the use of this; but as the time is at hand when but little watering at the roots is required, the use of any kind of manure (unless in exceptional cases) should be stayed as far as using it in the water goes, merely sprinkling the paths the last thing at night with weak manure-water, which the plants absorb. For *Odontoglossums* and *Oncidiums*, there is no better stimulus than that afforded by soot and lime water in equal parts, about half a bushel of each being tied in a bag and put into a large tank or butt of water. Decaying sea-weed, tan, and hard tree leaves give off something that is much liked by *Phalenopsis*; and guano-water sprinkled on the floor of the *Cattleya* and *Lælia*-house assists the plants in finishing up their new pseudobulbs.

FRUITS UNDER GLASS.

By J. RIDDELL, *Gardener, Castle Howard, York.*

VINES that were early forced are now ready for their winter dressing, and may be proceeded with at once. Finer wood or more plump buds I have rarely seen than are met with this year, which may be taken as a good promise of fruit next summer. Where young rods are being run up to replace old ones, 3 or 4 feet of the current year's cane may be left, according to the strength of the wood, and all the spurs on the old canes corresponding with the same lengths may be cut off. Shorten all lateral growths to a plump bud, as near their base as possible. I may be allowed to remark here that the position of good buds on the shoots of Vines depends a great deal on the manner in which they have been trained. When the laterals are laid in at right angles from the main cane, the leaves at the nodes nearest to the spurs will retain their vitality throughout the season of the Vine's growth, and promising eyes for a future yield will be found close home. On the other hand, however, when the shoots have been placed in a slanting position towards the apex of the house, the leaves referred to fail to perform their functions during the time stated, with the result that their early decay is a bad augury of large bunches being obtained from shoots emanating from eyes formed at their base. The most striking examples of early leaf-falling of this kind are to be seen on young and vigorous plants, therefore it behoves the pruner to consider well the subjects upon which he is plying his skill, in order that the best crop obtainable may be secured. Thoroughly cleanse all wood, iron, and glass, with a hard brush and soapy water, and should mealy-bug have found a home within the structure, the canes may be got into bundles, and protected with waterproof waggon-sheets, and the whole of the roof-trellising, walls and ends, be well drenched with hot water, in which a fair proportion of soft-soap and petroleum has been added. In applying this cleanser, care must be taken to keep it well mixed by returning every alternate syringe-ful into the vessel containing it. In removing the sheets, see that the liquid remaining upon them is safely carried beyond the canes before it reaches the border. The oil is volatile, and quickly evaporates from the surface-soil. Strip the canes of all loose bark, but be careful not to injure the green layer beneath; then go over them with a stiff brush and Fir-tree oil. Paint the framework and trellising of the house, when it becomes dry, with white lead, sealing up all crevices to prevent the escape of any bugs which

may be concealed within them. All walls may be whitewashed with hot lime, and an endeavour made to fill every cranny with it. After slinging the Vines in their places, the next question to consider will be "what amount of surface soil should be removed from the border." This will have to be decided in each case by the condition of the border itself, and the position of the roots in it. In some instances the soil may be in anything but a congenial state for plant roots, and its almost entire removal become indispensable to success. In adopting this course, the first step should be to clear away the loose materials from the surface, to get quit of any bugs resting there, and gradually work downwards with forks, preserving all roots that are met with, keeping them moist and covered with mats, and finally relaying them in a bed of new materials, and well watering the bed. The roots can thus be got to within 6 inches of the surface, and if Thomson's Vine Manure has been freely mixed among the fresh ingredients, a happier state of things will be the reward of such labours when next time the plants are called upon to finish their crops. When an extreme renovation of this kind is taken in hand, it is better to change the soil by sections of something like 6 feet by the width of the border at one time than by gradually lowering the whole length and width at once, as their roots can be a shorter time exposed. Borders in better form need only be reduced a few inches, till roots are found, and then be surfaced with a layer of lime, and then fairly well-rotted leaves, mixed with Vine-manure. Finish all such work by giving the borders a watering in keeping with their requirements.

THE FLOWER GARDEN.

By H. W. WARD, *Gardener, Longford Castle, Salisbury.*

RE-ARRANGING HARDY PERENNIAL PLANTS.—It takes some years to get hardy perennial plants properly distributed in herbaceous borders; the dwarf subjects may require to be brought nearer to the front, and the taller placed further back. The colours of the flowers must also be borne in mind in re-arranging the plants, and the clashing of colours in plants in proximity to each other averted as much as possible. These matters alone require a re-distribution of perennial plants; and then the height to which the plants grow must be considered. The present is a suitable time for doing this kind of work, the plants being in many cases still in flower, rendering replanting an easy matter. Take up the placed plants with good balls, and drop them carefully into holes made large enough to take the balls of earth and roots comfortably; tread the soil round about them, and afford water at the roots immediately afterwards. When the work is so performed, the plants feel their removal very little.

LIFTING AND STORING ROOTS.—Take up and store in a dry, cool place, in sand, the roots of *Dahlias* and *Cannas*. If the latter are growing in a high, dry, and well-drained situation, and the beds can be covered with a layer 3 or 4 inches thick of sifted coal-ashes, they will generally survive the winter. The tubers of *Begonias* are best wintered in a cold pit, laying them in sandy soil, with a good length of the tops adhering, and covering the glass with Fern in severe weather.

GENERAL WORK.—Gravel and turfed walks must be kept free from weeds, moss, and leaves, advantage being taken of moist weather to weed, and roll the weeded walks directly after the work is done. Where domestic fowls, pheasants, &c., frequent the walks, poisonous weed-killers must not be applied.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, *Gardener, Mereworth Castle, Maidstone.*

STRAWBERRY BEDS.—These should be put in good order when the soil is in a moderately dry state, removing all late flower-spikes, runners, weeds, &c., so that no further attention will be needed till the spring. If the beds were thoroughly mulched with good manure, the plants will have made good crowns, and a fine crop of fruit next year may be anticipated. But where this precaution has been neglected, it should be done without delay. On light soils, the beds should be heavily manured twice yearly, i.e., in the early spring, and again when the crop is gathered. When mulching the beds, place some manure as close as possible to the plants. The beds should be relabelled with stout durable labels.

CUTTINGS OF BUSH FRUIT.—This is the best month in the year in which cuttings of Gooseberries,

Black, White, and Red Currants, may be put in, the cuttings callusing early, and making rapid headway the first year, and with but little loss. The cuttings should be made of the matured wood, shortened to 14 inches in length; if a heel to each, so much the better. Take out a few of the lower buds of all except those of Black Currants. Prepare a bed in an open spot, and set out the pieces at 12 inches apart between the rows, and 9 inches in the rows. The cuttings may be dibbled in, resting the base of each on a firm bottom, and filling the hole firmly with fine soil. But where many cuttings are struck it is better to open trenches 9 inches apart, and as much in depth, and lay the cuttings in these in an upright position, treading the soil firmly about them before finally filling in. Red and White Currants may be prepared and put in as for Gooseberries, but the buds, which come underground, should not be cut out; and keep free from weeds.

THE APIARY.

By EXPERT.

CANDY FEEDING.—It being now too late to feed with syrup, any stocks that have been overlooked and have not sufficient stores to winter on, should be provided with candy. When made, the candy is better run into boxes, either of wood, or cardboard, which must be inverted over the feed-hole, this being more convenient than putting cakes under the quilt. It would be a good plan to make a rule of putting a narrow box, filled with candy, on all stocks, a corresponding flap, along the middle of the quilt, at right angles to the frames, being cut for it, and turned back, as by this means the all-important winter passages would be assured.

A GOOD SYSTEM.—The season having come round when little can be done for the welfare of the bees outdoors, now the long evenings are with us, it is time to think of commencing to plan and prepare for another year's work. A good system of management contributes as much to success in bee-keeping as it does in other undertakings. The following is the outline of a system which the writer feels certain, if generally followed, would be productive of the best results. It is a modification of a plan recommended by Mr. Simmins, in his book, *A Modern Bee Farm*, and its importance seems to have been overlooked. The adage so well known to beekeepers, "keep all stocks strong," is what we all aim at, but which we find so difficult to accomplish. We will first of all suppose that the beekeeper has his full complement of stocks, and does not wish to increase the number. To carry out the system advocated, he must provide as many small, or nucleus hives, to contain six frames each, to be able to stand one at the side of each stock. When a stock swarms the nucleus hive is brought into use, as four of the frames, containing adhering bees, and at least one queen cell, should be taken from the swarmed hive and put into it. This makes room for the swarm to be returned to its original hive, after, of course, frames containing full sheets of foundation have taken the place of those abstracted, and all remaining queen cells have been cut out. The swarm will soon be at work filling the supers with honey, and no after-swarms will issue, whilst the nucleus at the side will soon contain a young fertile queen, and will increase considerably by the autumn, when the old queen must be removed from the parent stock, and the two united. If this plan be followed, it ensures a young queen for each hive every year, and doubles the population after the wear and tear of honey gathering and syrup storing has taken place. Provision would have to be made for some hives not swarming, which could be done by making in some cases two nuclei instead of one.

CHICAGO EXHIBITION.—In 1822 a patent was issued to Jeremiah Bailey, of Pennsylvania, for a mowing machine, and he constructed two machines the same year. It is believed that these were the first ever made. A number of years later a patent for improvement on this machine was secured, and some fifty of the improved machines were built. Only two of the original pattern were ever made, and one of them is still in existence, owned by Samuel Worth, of Marshallton, Pa. He will exhibit it at the World's Fair, where, as a pioneer in agricultural machinery, it will attract much attention. The knife of the machine is circular, and had a combined rotary and forward motion.

EDITORIAL NOTICES.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	OCT. 17	Great clearance sale of Nursery Stock at St. John's Nurseries, Worcester, by Protheroe & Morris (five days).
TUESDAY,	OCT. 18	Clearance sale of Nursery Stock at Sea View Nurseries, Havant, by Protheroe & Morris. Sale of Dutch Bulbs and Imported Orchids at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.
WEDNESDAY,	OCT. 19	Sale of Nursery Stock at the Sunningdale Nursery, Berks, by Protheroe & Morris (three days). Clearance sale of Palms and other plants at Hackney by Protheroe & Morris. Sale of Dutch Bulbs at Protheroe & Morris' Rooms. Liliums and Lily of the Valley, at Stevens' Rooms.
THURSDAY,	OCT. 20	Sale of Dutch Bulbs and Greenhouse Plants at Protheroe & Morris' Rooms. Orchids, &c., at Stevens' Rooms.
FRIDAY,	OCT. 21	Sale of Orchids and Dutch Bulbs at Protheroe & Morris' Rooms.
SATURDAY,	OCT. 22	Sale of Dutch Bulbs at Protheroe & Morris' Rooms. Spiraeas, Plants, &c., at Stevens' Rooms.

SHOW.

TUESDAY, OCT. 18. Royal Horticultural Society at Drill Hall, James Street, Westminster, Lecture at 3 P.M. on Cycads.

MEETINGS.

THURSDAY, OCT. 20. Brighton and Hove Chrysanthemum Society.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—49°·8.

WILLIAM HARDWICK BRADBURY.—We receive the sad intelligence, as these sheets are passing through the press, of the death of Mr. WILLIAM HARDWICK BRADBURY on the 13th inst., in the sixtieth year of his age. Mr. BRADBURY was head of the eminent firm of BRADBURY, AGNEW, & Co. Ltd., Printers, Whitefriars, and one of the proprietors of this journal.

Forcing by
Electric Light.

A SHORT time since we quoted, from an American source, an account of the forcing of Lettuce plants by the electric light as a commercial speculation. The usual results followed. At first blank denial, next ridicule, then the figures were challenged, but ultimately they were found to be correct. In due time we have no doubt whatever that we shall find the electric light taking its place among the requirements of horticulture as hot-water pipes do now, and then the usual thing will again happen, and we shall be told that this matter was perfectly well-known years ago! In order to bring about this consummation, we append the summary which Professor L. H. BAILEY, the eminent American horticulturist, gives at the end of his second report upon Electro-Horticulture, published in the *Bulletin* No. 42 of the Cornell University Agricultural Experiment Station.

"1. The influence of the electric arc-light upon greenhouse plants is greatly modified by the use of a clear glass globe, or the interposition of a glass roof. Plants which are much injured by a naked light, may be benefited by a protected light.

"2. As a rule, plants are earlier under the electric light than when grown in ordinary conditions.

"3. The light can be suspended above the house with good effect.

"4. Lettuce is greatly benefited by the electric light. An average of five hours of light per night hastened maturity from a week to ten days, at the distance of 10 and 12 feet. Even at 40 feet, in only diffused light, the effect was marked. The light appeared to injure young newly-transplanted plants.

"5. Radishes were also benefited by the light, but not to a great extent. When the light was hung in the house, however, whether naked, or protected by a globe, Radishes were injured.

"6. Beets and Spinach appeared to be slightly benefited by the light.

"7. Cauliflowers under the light tended to grow taller than in ordinary conditions, and to make fewer and smaller heads.

"8. Violets and Daisies bloomed earlier in the light house. This corroborates results obtained with other flowers in our earlier experiment.

"9. The electric light does not appear to determine or modify the hours of growth of Lettuce and some other plants which have been studied in this particular. Plants which are benefited simply grow more rapidly during the customary periods.

"10. I am convinced that the electric light can be used to advantage in the forcing of some plants. L. H. Bailey."

As a further contribution to this matter, so important for the horticulturists of the near future, we subjoin a brief account of M. GASTON BONNIER's recent experiments in Paris, as given in the *Comptes Rendus*:—

We read in the *Comptes Rendus de l'Académie des Sciences*, for September 19, that two lots of similar plants were exposed, one to continuous electric light, the other to the same light from six o'clock in the morning to six at night, and to darkness from six o'clock at night to six in the morning; a third lot in the open air, growing under ordinary normal conditions, served as a control. Owing to the arrangement of the space, the plants exposed to continuous and to interrupted electric light were kept in a uniform temperature, 13° to 15° C. (55° to 59° F.), and in still air. The light was furnished by arc-lamps, in globes, and the plants mentioned in this paper were placed under glass. The surroundings rendered it impossible to experiment with every species of plants; those which were found most available under the circumstances were bulbous plants, grasses made to germinate on the spot, submerged aquatic plants, and ligneous species.

1. *Comparison between continuous electric light and normal light.*—The shoots of the trees submitted to the continuous light, Austrian Pine, Silver Fir, Beech, Oak, and Birch, were very green, the leaves less dense than under ordinary light and less firm in general texture. At first sight, the shoots appeared at once blanched and rich in green matter [?], but it is known that in blanched shoots produced in darkness, the stems are at once thicker and longer, while the leaves are fewer in number; but in this case, on the contrary, the stems were in diameter almost equal to those of the normal plants and the leaves covered an equal surface, being by compensation slightly longer.

Speaking generally, these stems, although rich in chlorophyll and assimilating vigorously (as is proved by the quantity of oxygen given out under the previous trials), showed in their tissues less development than do the normal shoots.

Certain modifications in the anatomical structure were very noticeable, and far more marked than those usually found in specimens exposed to diffused light only.

Thus, a leaf from the centre of a shoot of an Austrian Pine, when cut across and compared with a similar section of an analogous normal leaf, exhibits the following peculiarities:—The epidermis has thinner and not ligneous walls; the sub-epidermis is slightly thickened; the cortical cells containing the chlorophyll grains is less developed as regards the central tissues, and the walls of these cells have not the peculiar folds so characteristic of the genus *Pinus*, and which are highly developed in the

normal specimen; the resin-canals are less than half the size, and are close to the sub-epidermic layer; these cells of the endoderm resemble those of the pericycle near them; the areolar tissue is less defined, and the two bundles, by which the wood and liber are distinguished, are as much as five or six times further removed one from the other than they are in normal specimens. The leaves of the Silver Fir, and Spruce, showed analogous modifications; those of the Beech, Oak, and Birch showed, in the palisade, the epidermis, and the stomata, less differentiation than did the similar but normal leaves, while they resembled the latter in the construction of their conducting tissue.

As for the stem, on examination of a transverse section made in the centre of a shoot of Beech grown under continuous electric light, and comparison of it with an analogous section of a similar shoot of the same tree grown under normal conditions, this is what is remarked. The woody bundles are as large as in the normal stem, but remain longer isolated one from another; there is a complete absence of the woody cells which form, in a normal specimen, a distinct and continuous ring, and is a marked characteristic; the cuticle of the epidermis is very thin, &c. Analogous changes of structure are noticeable in the stems of the Oak and Birch. The stems of Pine and Spruce show modifications more or less similar to those noticed in the leaves of those trees.

As to the diameter of the pith, which is so much augmented in blanched plants [Rauwenhoff, *Sur les Causes des Formes Anormales des Plantes qui croissent dans l'Obscurité* (*Ann. des Sciences Naturelles, Botanique*, 6th series, t. v., p. 266)]. It is not relatively larger in stems grown under continuous light.

Further study of the organs, undertaken at a more advanced stage, showed M. BONNIER that, under continuous light, not only is there a retardation in the formation of the tissues, but the structure is even appreciably different to that observed in plants under ordinary light.

2. *Comparison between Continuous and Interrupted Electric Light.*—Without entering into details, M. BONNIER states that the structure of organs subjected to this interrupted light, 12 hours dark, 12 hours with light, manifested a tendency to resemble that of the same plants grown under ordinary conditions. This final series of observations shows that it is not merely the nature of the light employed, but also its continuity, which influences vegetable structure.

Plants grown under continuous light, which assimilate uninterruptedly, and always in the same degree, are, as it were, disturbed in the utilisation and final differentiation of the assimilated matters. This differentiation cannot be maintained, under this perpetual daylight, as it is in ordinary plants during the night, or even during the comparative obscurity to which they are subject at high elevations.

To sum up, it may be said that—1. Under continuous electric light, considerable modifications of structure are induced in the leaves and young stems of plants.

2. The plant can be induced to respire, assimilate, and transpire day and night with unfailing regularity; it then seems embarrassed by this continuous action, and the tissues become more simple in structure.

3. The interrupted electric light (with twelve hours' darkness in every twenty-four) induces in the various organs a structure more closely resembling the normal condition than that induced by continuous electric light.

With reference to herbaceous plants, M. BONNIER states that:—

"The experiments were made on very varied plants—Hyacinths, Chinese Primroses, Pelargoniums, Tulips, Crocus, Myosotis, &c.; on cereals, Flax, Cress, Potato, *Stachys tuberosa*, &c.; also on numerous species belonging to the genera *Primula*, *Ranunculus*, *Hieracium*, *Taraxacum*, *Veronica*, *Anemone*, *Polygonatum*, *Helodea*, *Po-*

tamogeton, Ceratophyllum, &c. As has been before noticed in cultural experiments made with electric light (HERVÉ MANGON, 1861; SIEMENS, 1880; DEHÉRAIN, 1881; experiments at the Cornell University, 1890-91), a certain proportion of the plants died, some even under interrupted light, but many more which were subjected continuously to the light. A certain number of plants grown under glass in continuous electric light manifested, on the contrary, an exuberant development, with much more intense green foliage and darker coloration of flowers. Analogous modifications to these are

anatomical and structural changes which his specimens underwent, which in detail would not interest our readers. The following, however, are the general results observed by him. That—

"1. When the continuous electric light, under glass, produces excessive development of an herbaceous plant, with intense greening, the structure of the organs is at first greatly differentiated; but, if the electric light is intense and prolonged for months, without interruption or diminution, the new organs formed by the plants which are able to adapt themselves to this light present remarkable modifications

hybridum seen at the Manchester summer show will not be without use:—

"A passing reference was made in the *Gardeners' Chronicle* to the magnificent display of Rhododendrons shown in the Botanical Gardens, Manchester, by Messrs. JOHN WATERER & SONS of the American Nursery, Bagshot. Those who are acquainted with the building known as the Annexe will scarcely be surprised to learn that something like 2000 plants were grouped here, down the centre in the form of circles, with here and there a huge



FIG. 74.—GARDEN VIEW, CASTLE LEVAN, GOUROCK, N.B. (SEE P. 468.)

observed in plants at high elevations, and have formed the object of researches undertaken in Norway with M. FLAHAULT, which proved that light was the principal cause of this remarkable phenomenon.

But under the conditions under which M. BONNIER worked at the Halles, where the light was intense and too prolonged, the greater part of the plants, after this rapid development, seemed to suffer from an uninterrupted excess of assimilation. However, certain species of plants were able to adapt themselves to their exceptionable conditions. These were, as before mentioned, bulbous plants, grasses raised from seed, arborescent species, and submerged aquatic plants."

The author next gives a technical account of the

of structure in their various tissues, and are less differentiated, simpler in structure, but always rich in chlorophyll.

"2. The direct electric light is prejudicial, owing to its ultra-violet rays, to the normal development of the tissues, even if the lamps are more than 6 feet away from the plants."

Rhododendrons
at Manchester
Show.

MANY of our readers will doubtless be contemplating the planting of Rhododendrons from the nursery, or rearranging those that they possess at this season, and a few notes by an expert of the fine varieties of Rhododendron

stand, and forming the central objects, alternated in a few instances with a circular group of beautiful Japanese Maples. The sides were wholly formed of Rhododendrons, the varying shades of colour being alternated with admirable skill. The head of bloom was remarkably good throughout. The best varieties in the Bagshot collection were represented here, and the whole formed a display probably never before equalled in Manchester. The intense heat of the weather in the early days of June, intensified by the absence of an awning on the roof, took rapid effect upon the plants, and somewhat affected the duration of bloom, which in a cool time would have been much prolonged.

A selection made from the large number of

varieties found at Manchester would include some of the very finest in cultivation, such as *Album elegans*, a very good white; *Baron Schroder*, plum-purple, with a yellowish centre—very distinct, and quite late in flowering; *Baroness Henry Schroder*, white, very handsomely spotted on the upper segments—large, very fine, good habit and hardy; *Broughtoni*, rosy-crimson, very fine and striking; *Campanulatum pictum*, pale lilac, with reddish markings; *Cynthia*, rosy-crimson, very effective; *Duchess of Bedford*, crimson, with light centre; *Duchess of Connaught* white, with lemon-coloured markings—flowers of very fine quality borne on large bold trusses, extra fine; *Duleep Singh*, a very distinct variety of a dark chocolate-crimson colour—extra fine; *Everestianum*, rosy-lilac—an excellent grower, and carrying abundantly large trusses of bloom; *Frances B. Hayes*, extra fine white, the upper petals marked with maroon-crimson—excellent habit; *Frank Gower Waterer*, fine dark scarlet; *Genesic*, purplish-claret, shaded with scarlet—very distinct and fine; *George Hardy*, a very good white; *Hector*, deep rosy-crimson; *John Henry Agnew*, one of the very finest, pale blush in colour, the upper segments finely marked with bright chocolate—very large truss, some will measure 15 inches across; *John Walter*, rich crimson, extra fine; *Lady Eleanor Cathcart*, an old but extremely striking variety of a bright rose colour; *Lady Olive Guinness*, clear white, with dark markings; *Lord Eversley*, intense dark scarlet-crimson; *Mrs. Heywood*, blush, edged with bright pink—very fine; *Madame Van du Weyer*, rosy-crimson, extra fine; *Michael Waterer*, probably the most strikingly coloured *Rhododendron* in cultivation, the colour bright scarlet-crimson—extra fine habit; *Mrs. Hemans*, delicate blush, very fine; *Mrs. William Agnew*, pale rose, deeper on the petal edges—a very fine and effective variety; *Nero*, rich bright purple, extra fine; *Pelopidas*, crimson, very fine; *The Queen*, still one of the best whites; *Sir Robert Peel*, very bright crimson, with dark spots; *Towardi*, pale purple; and *William Ewart Gladstone*, deep rose, large trusses—extra fine.

Of new varieties, one of the most attractive was *Samuel Barlow*, blush-pink, edged with pale rose, the upper segments marked and blotched with yellow; this is a very hardy variety, said to have been obtained by a cross with *R. maculatum*. *Charley Waterer*, vivid crimson, is also very fine and striking.

Standard *Rhododendrons* are attractive objects in positions suited to them, and especially in the case of a large exhibition like that at Manchester. It is varieties which form bushy, close and handsome heads, that are suited for standards, and only a comparatively small number are so trained. A dozen of the best will be found in *Alexander Adie*, brilliant rosy-scarlet; *Barclayanum*, clear rosy-crimson; *Brayanum*, vivid crimson; *Concessum*, lightly margined with rose; *Hector*, *John Waterer*, rich carmine; *Lady Eleanor Cathcart* and *Minnie*, white tinted with mauve, large orange spots; *Mr. John Penn*, salmon-pink; *Nero*, *Sir Robert Peel*, and *Sir William Armstrong*, very light crimson, extra fine. As *Messrs. Waterer & Son* state, "of all the plants we know for single specimens on lawns, we believe nothing can compare with a standard *Rhododendron*; thoroughly hardy as they are, with their extremely handsome green foliage, they are magnificent through the winter, and in the last weeks of May and beginning of June, they unfold their buds, with colours varying from white, scarlet-rose, &c., and when fully developed, their beauty is such as must be seen to be appreciated," and when it is remembered a large and well-developed standard *Rhododendron* will sometimes have as many as 2000 bloom buds on the plant, some idea of the effect they produce in spring may be imagined.

Going from this grand display at the Botanical Gardens to Stakehill House, some 10 miles farther north-east, one could see in *Mr. Samuel Barlow's* garden *Rhododendrons* in not a few instances almost denuded of leaves, owing to the severity of the past two winters, and yet bearing on the points of their leafless shoots, trusses of good bloom. Perhaps on

no spot within 10 miles of the city of Manchester, would there appear to be centred so many influences hostile to vegetation.

Those who will grow the *Rhododendron* well in or about towns like Manchester, Sheffield, Newcastle, and some others, must endeavour to afford the plants by means of suitable soil, either peat or light fibrous loam, every encouragement to growth. To do this, in localities with a light rainfall, the plants should receive a few thorough waterings from the time they commence to grow in the early summer till the flower-buds are prominent on the tips of the shoots. In addition to watering these shrubs, a slight mulch of spent manure, leaf-mould in a partially-decayed state, or their own foliage which has fallen left under them undisturbed, and a little peat or loam scattered over it to keep it from being blown away, would afford them a nutritive mulch. Strong manures, which are rather inimical to the well-being of the plants, should not be given, and even manure-water is not a desirable aid to growth. Neither should digging ever be done in a *Rhododendron*-bed, except when the plants are young, and the roots are still close at home. It is usual to have an edging of *Ledums*, *Kalmias*, *Veronicas*, *Ericas*, *Menziesias*, *Zenobias*, *Pernettyas*, and *Gaultherias*, as a grading down of the *Rhododendrons* to the surrounding level of the ground; and these different species will require the same kind of treatment as the latter; but, with the exception of *Gaultherias*, *Veronicas*, and, perhaps, *Pernettyas*, the other plants should not be planted where there is much soot deposit, being short-lived. In this case, the *Rhododendron*-bed may have a wide margin of ordinary soil, which may be cultivated like any other ordinary bed intended for bulbs and spring and summer flowers.

GARDEN VIEW, CASTLE LEVAN.—In our engraving under the above heading (fig. 74) is depicted a homely kind of garden scene, of which many exist in localities in which the American plants find a congenial soil, and sufficient moisture to produce a vigorous growth. Our correspondent has not furnished us with the name of the variety, but it is doubtless one of the *Rhododendron* hybridum section, and our readers may, if they please, give it any one of the names of that numerous progeny, for which thanks are due to the intelligent efforts of hybridisers, such as *Messrs. C. Noble, Standish, Smith* of Newry, the *Waterers*, and others. In the mild climate of the west of Scotland, where the conditions are so favourable for the cultivation of *Rhododendron ponticum* and its varieties; *R. Catawbiense* and *R. caucasicum*, and its varieties *albiflorum*, *flavidum*, *Nobleanum*, and *pulcherrimum*, many of the species from the Himalayas, and hybrids raised from them, are grown with success; and in the warmer spots, not much exposed to the early morning sun, Indian species, like *R. arboreum*, and its varieties *album*, *cinnamomeum*, *roseum*, *limbatum*, and *puniceum*; *R. Nuttalli*, and *R. ciliatum*, a plant with pale reddish-purple flowers and leaves 2 to 3 inches long, pilose on the upper surface, the plant growing about 2 feet high. The late Captain *Mangles* cultivated most successfully in the dry climate of Haselmere, Surrey, on high ground, most of those above mentioned, and many others of Indian or Sikkim origin, by the simple expedient of retarding the growth of the plants by means of matting spread on a frame over them, or by placing them where the sun could not reach them, and keeping the shade on the plants till all danger from late frost had passed by. For a list of some good hybrids of *R. ponticum*, we may refer our readers to preceding Article, "*Rhododendrons at Manchester*."

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Society will be held in the Drill Hall, Westminster, on Tuesday, October 18, in the

afternoon at 3 o'clock. *Mr. W. Carruthers, F.R.S.*, the chief of the Botanical Department at South Kensington Museum, will deliver a lecture on "Cycads," to which interesting class of plants he has devoted special attention. Growers of Apples, Pears, and Grapes, who intend to compete for the prizes offered in the Society's schedule, are requested to communicate the nature of their exhibit to the Superintendent, the Royal Horticultural Society's Gardens, Chiswick.

HORTICULTURAL CLUB.—The first meeting of the session 1892-93 will take place on Tuesday, October 18, at 6 p.m. The subject for discussion will be, "The Principles of Root-pruning Fruit Trees," to be opened by *Mr. George Bunyard*.

CHISWICK GARDENS.—A number of the later species and varieties of perennial Asters are still blooming in the Royal Horticultural Society's Gardens, Chiswick, where there is to be found probably one of the most complete collections of these plants in the world. They are well worth a visit from all lovers of the Starwort family. The collection of Apples has been stored in the fruit-room, and as each variety is correctly named, the attention of Fellows and others interested in the cultivation of the best kinds suitable for particular purposes, is called to the fact. The Grapes in the large conservatory are now ripe, and the big hanging clusters present a remarkably fine appearance.

OCTOBER HORTICULTURAL MEETING AT GHENT.—A Certificate of Merit for blooming was awarded to *M. Jules Hye*, for a *Renanthera Lowii* with two long racemes of fine flowers. Certificates of Merit for novelty were awarded for the following plants:—1, *Carex europæa* var., to *M. Ed. Pynaert*, little known in Belgium, though well worth cultivating; 2, *Canna Madame Crozy*, to *M. L. Desmet Duvivier*; 3, *Epidendrum Frederici Guilielmi*, to the same—an old Orchid, but shown for the first time at Ghent; much admired for its pretty colouring. 4, *Begonia striata formosissima*, to *MM. Blanquaert et Vermeire*, a pretty novelty, red, streaked and veined with white; 5, *Cattleya Gaskelliana marmorata*, to *M. Alf. Van Imshoot*, a pretty variety; 6, *Pteris cretica albo-lineata multifida*, to *MM. Duriez Frères*, remarkable for the great size of its pinnales and pretty colouring; 7, *Cypripedium Van Imshootianum* (hyb. *Chantini* × *callosum*), to *M. Moens*, of Lede, with a large and well-marked lip. Certificates for culture were awarded for—*Asplenium nidus avis*, to *MM. Duriez Frères*, an excellent specimen, in good health; *Croton magnifolius* var., to *M. Jules de Cock*, leaves large, and of a good colour; *Solanum jasminiflorum*, to *M. Alex. Dallière*. Honourable Mention was allotted for *Odontoglossum Inseayanum splendens flavidum*, to *M. A. Van Imshoot*; and *Cypripedium insigne* × *Alburtonii*, to *M. Moens*.

WEED MAPS.—It appears that the German educational authorities appreciate the desirability of hanging in the elementary schools of Germany maps of the common weeds of the district, so that the children attending the schools may become acquainted with the appearance of the plants, the flower, seed, and its method of distribution, roots and leaves, &c.; and to prevent the waste of labour now incurred by adopting the wrong methods in extirpating weeds, the children are taught the readiest means of dealing with them. The children are also taught which weeds are hurtful, which of value as food, medicine, &c. Something of the kind should be included in the teaching in our rural schools.

A PELORATE DENDROBIUM PHALÆNOPSIS SCHRODERIANUM.—A beautiful flower of a peloriate form of the above plant, resembling that illustrated in our issue for November 28, 1891, p. 643, comes from the gardens of *Geo. C. Raphael, Esq.*, Castle Hill, Englefield Green. At first sight the flower bears more resemblance to an Irid than an Orchid. Such freaks are interesting, and there is a tendency in the plants which bear them to prove constant. The double form of *Epidendrum vitellinum* sent by

the same gentleman some time ago has flowered twice since, and on each occasion the flowers have been more double than before, and the form of *Cypripedium philippinense*, with trisepalous flowers, with the lower sepals divided and divergent, in the same gardens, is reported to remain constant.

CHRYSANTHEMUMS GRAFTED ON PYRETHRUM FRUTESCENS.—A Ghent amateur, M. ALEXIS DALLIER, has grafted Val d'Andorre, Etoile de Lyon, Paul Fabvre, and one of its white seedlings, on Pyrethrum, and the results have exceeded all expectation. Val d'Andorre is 6½ feet across, and bears 380 flowering-stems; Etoile de Lyon is 5 feet across, with 150 stems; the seedlings are 6½ feet across, and Paul Fabvre has more than 300 blooms. Besides these fine specimens, M. CALLIER has grafted some fifty others, all more sturdy than those raised from cuttings. All varieties are not adapted to this style of culture. We may add that the grafts were made in January, February, and April of this year.

CHEIRANTHERA PARVIFLORA is an elegant twining plant of the Pittosporum family. Its leaves are sessile linear, 1 to 2 inches in length; the flowers are on long slender peduncles, each flower ½ to ¾ inch in diameter, with minute sepals and obovate violet petals. It is figured and described in the *Botanical Magazine*, t. 7261.

POTENTILLA SALESOVIANA.—This is a shrubby Potentilla, with unequally pinnate leaves, silky on the under surface, and white flowers. It is a native of the Kashmir, Altai, West Tibetan and Thian Schan mountains, and is illustrated in the *Botanical Magazine*, t. 7258.

MONODORA GRANDIFLORA.—This is a West African tree of the Anonad family, with oblong-acute leaves, pinkish on the under surface, and long-stalked, drooping flowers. Each flower is 3 to 4 inches in length, with three reflexed lanceolate sepals, three outer petals, each 3 to 4 inches long, green, marbled with reddish-brown, and undulate at the edges; the inner petals are about half the length of the outer, broadly ovate-acute. The flowers are beautiful, and have a striking, though quite superficial, resemblance to those of *Gloriosa*. *Botanical Magazine*, t. 7260.

LECTURE ON HORTICULTURE AT QUORN.—On Saturday evening a Lecture on Horticulture was delivered in the large room at the Quorn Mills by Mr. J. W. WALKER, lecturer to the Leicestershire County Council, this being the first of a course of four lectures to be given during the present month. Mr. JOHN D. CRADOCK, secretary to the Quorn Hunt, presided, and there was a large audience. The subject was "Soils and Manures, their Uses and Abuses." The Chairman, in introducing the lecturer, pointed out the great need for technical education.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.—The monthly meeting of the Liverpool branch of the National Amateur Gardeners' Association was held on Thursday at the Common Hall, Hackins-Hey, Captain F. W. FREEMAN in the chair. There were on exhibition in the hall the usual display of flowers, plants, &c., which were duly adjudicated on by three of the members, and marks awarded to the best exhibits. Mr. JOHN COWAN, of Garston Nurseries, delivered an interesting address on the subject of Orchids. Mr. COWAN had with him some beautiful specimens of *Dendrobium Phalaenopsis*, which were greatly admired.

THE FRUIT AND POTATO SHOW AT EARL'S COURT.—The judges, having reconsidered the awards, gave E. D. SHUTTLEWORTH & Co. a Gold Medal, instead of a Silver Medal, as reported. W. W. JOHNSON & SON received a First-class Certificate for a new Potato, Boston Quantity and Quality; and a Silver Medal, instead of a Bronze Medal, as stated in the report.

THE PRINCES STREET GARDENS, EDINBURGH.—The proceedings in the arbitration between the Corporation of Edinburgh and the North British Railway

Company as to the price to be paid by the latter for the ground taken by them in Princes Street Gardens, as we learn from the *Scotsman*, October 6, were resumed recently in Dowell's Rooms, George Street. The oversman in the reference is Lord Shand; Mr. Dunlop, Westminster, is the arbiter for the Corporation; and Mr. James Davidson, Saughton Mains, acts as arbiter for the Railway Company. The parties were again represented by counsel as follows:—For the Corporation, Mr. Graham Murray, Q.C., M.P.; M. Comrie Thomson, and Mr. C. Scott Dickson, instructed by Messrs. Macandrew, Wright, & Murray, W.S.; for the Railway Company, the Solicitor-General (Mr. Asher, Q.C., M.P.), Mr. Ure, Mr. F. T. Cooper, and Mr. G. G. Grierson, instructed by Mr. James Watson, solicitor of the Company. The case for the Corporation, who claim a sum of £150,000, was continued, and the witnesses examined for them were Mr. Washington Browne, architect, Edinburgh, and Mr. Alexander Frew, C.E., Glasgow, both of whom spoke chiefly of feuing values; and also Mr. James Watt, of the firm of Messrs. Little & Ballantyne, nurserymen, Carlisle, and Mr. John Methven, of the firm of Methven & Sons, nurserymen, Edinburgh, who both spoke principally on the question of amenity and on the laying out of the ground. This closed the evidence for the Corporation, and Mr. Hamilton Beattie, architect, Edinburgh, was then examined as the first witness for the railway company. Mr. Beattie's examination had not concluded when the sitting closed at a quarter to five o'clock.

"COTTAGE GARDENING," published at a cost of one half-penny weekly, by Messrs. CASSELL & Co., and edited by M. W. ROBINSON, makes its debut this week. It treats not only of the cottager's flower and vegetable garden, but of his bees and pigs, adding a page of miscellaneous advice on cookery, dress, and housekeeping. To further attract subscribers, prizes are offered for the best sketches or photos of cottage gardens.

LEMOINE'S HARDY GLADIOLI.—This beautiful race, originating from the cross-breeding of G. Lemoinei and G. Saundersianus, is known to many of our readers who had the opportunity of seeing them and of hearing what M. LEMOINE the younger had to say concerning them at one of the meetings of the Royal Horticultural Society. A coloured plate, representing some of the forms, is given in the *Revue de l'Horticulture Belge* for October.

"GARDENING" is the title of a new fortnightly periodical issued by the Gardening Company, Monon Building, Chicago (Editor, Mr. W. Falconer). The prospectus announces the publication as a "plain, practical paper, in plain language, gotten up with the view of aiding everyone who is interested in a garden, more especially the amateur." In the first number this programme is well carried out, the whole paper being full of information, attractively "gotten up" and illustrated.

AMERICAN PLANTS.—Under the title, "Contributions from the United States National Herbarium," various papers on systematic botany are issued, under the auspices of the Department of Agriculture (Division of Botany). The lists are of great value to working botanists. Collections illustrative of the floras of Cocos Island, the Galapagos Islands, and Patagonia, are enumerated, and a complete systematic and alphabetical index of all the flowering plants of North America published within the year, added. Some illustrations add to the value of the publication.

LILIUM SULPHUREUM.—This is the beautiful Lily lately exhibited by Messrs. Low. It resembles the Himalayan *L. Wallichianum*, but that has pure white flowers, more slender anthers, with bright yellow pollen, and does not produce bulbils in the axils of the upper leaves. The present plant has scattered linear leaves, drooping flowers 7 to 8 inches long, sulphur-yellow, tinged outside with claret-red. It is a native of Burma, and is described and figured by Mr. BAKER in the *Botanical Magazine*, sub-t. 7257.

MODERN FRUIT CULTURE.—Messrs. G. BUNYARD & Co., Maidstone, have reprinted in the form of a pamphlet various papers by themselves and others, and intended to convey information concerning fruit culture. It supplies just the kind of knowledge which amateurs want, and may be recommended as furnishing practical information without an excess of detail.

GOLDEN WEDDING.—On Wednesday, October 5, Mr. Alderman W. H. ROGERS, J.P., and Mrs. ROGERS, of Red Lodge Nursery, Southampton, celebrated their Golden Wedding. The congratulations and presents were numerous, and not the least appreciated by the recipients was a handsome present, consisting of an illuminated address by the employés.

"FERNS OF BRITISH INDIA."—A supplement to Colonel BEDDOME's most useful *Handbook to the Ferns of British India* has just been published by THACKER, SPINK & Co., of Calcutta, and 87, Newgate Street, London. The original work was published in 1883, and this brings our knowledge up to the present time. The additions made have been principally in the Malay peninsula, where SCORTECHINI, KUNSLER, and others, who have worked under the auspices of Dr. KING, have discovered a good many new species, and added to the Indian flora many other Malayan types not known previously within Indian bounds. The work contains also a new working up of the true *Nephrodium*, the discrimination of which is very difficult. The pamphlet is the same size as the original work, and contains 110 pages, without any plates.

THE ANT-BEAR.—Mr. A. C. MACDONALD, in *Agricultural Journal*, Cape Colony, says:—It is a failing with the human race that, in the pursuit of "sport," they at times attack friends as well as foes. A case in point is the war which is being waged against that peculiar quadruped, the ant-bear, "aardvark." Anyone conversant with the habits and nature of this animal, knows that it is one of the few indigenous four-footed friends of the farmer of this colony. Its food is the ant, more especially the white ant, an insect which feeds on our crops and the succulent herbage of the field, and which does much greater damage than is generally supposed. Although the ant has numerous enemies, among which is reckoned the koran, a bird which, I am happy to say, is now being preserved on some farms solely for this purpose, yet none are so destructive to its welfare as the ant-bear. It is only when on the surface of the ground that the ant runs any danger from its winged foes, but above or below ground it is always within reach of the ant-bear. But it is not only as a destroyer of ants that the ant-bear is of value to the farmer. A large percentage of the seeds of our herbage after they have dropped off the plant on to the hard ground, lose their germinating power from being exposed day after day to the scorching rays of the sun. The ant-bear, as it goes scratching about for ants, covers a large number of seeds with loose earth, in which congenial bed they will retain their reproductive power for a long period, awaiting their kind. And yet this animal, harmless in other respects, is being slowly but surely exterminated. For its skin, which is valued at about 15s., and also for its flesh, which resembles superior pork, it is sought after by the natives. With the white race "sport" is the inducement, this fun taking the form at times of forcing the poor brutes out of their holes by flooding with water, or drowning them in their holes and afterwards digging them out. The subject of the protection of the ant-bear has been brought forward for discussion by the Zwart Ruggens Farmers Association, and I hope to see other associations following the example.

PUBLICATIONS RECEIVED.—*Treatment of Fungus Diseases*. L. H. PAMMEL.—*Pollination of Flowers*. L. H. PAMMEL.—*Horticulturist's Rule Book*, 1892; 2nd edition. (Rural Publishing Co., New York.)

PLANT PORTRAITS.

- BEGONIA SEMPERFLORENS ATRO-PURPUREA, *Westnik*, September.
 BIGNONIA SPECIOSA, *Garden*, September 17.
 COREOPSIS GRANDIFLORA, *Deutsche Gärtner Zeitung*, September 20.
 COSTUS LUCANUSIANUS, *Garten Flora*, t. 1379.
 ENOTHERA CESPITOSA, *Garden*, September 24.
 PEACH GROSSE MIGNONNE, *Bulletin d'Arboriculture*, &c. September.
 POLYGONATUM AMABILE, *Botanical Magazine*, Japan, August.
 SMILAX GLAUCA, *Garden and Forest*, September 7.
 VANDA TERES, *Garden*, September 24.

A TRAVELLER'S NOTES.

(Continued from p. 400.)

CALCUTTA BOTANIC GARDEN.—Starting again in the afternoon from Dr. King's bungalow, we directed our steps towards the north, Mr. Proudlock again kindly placing his time at my disposal. On our way we passed some tall Mahoganies, with stems like great Elms at home. Opposite the bungalow is a Nipa fruticans, with long stiff leaves, which, when split, are used for thatching houses. Another winding lake, with numerous arms, all of which cannot be seen from any one point, rendering the effect very pretty, is soon reached in this part of the garden. There seems no lack of water. Great bushes of Bauhinias, covering many square yards, are near, and a magnificent Terminalia Catappa, over 100 feet high, with pretty red-tinted foliage, rises straight and tall on the edge of the grass; and a row of Mahogany, Swietenia Mahogani, with stems $4\frac{1}{2}$ to 5 feet through, is a little beyond. Sterculia alata is a fine tree, tall pyramidal head, on a smooth straight stem; there are some near the great Banyan, situated in this end of the garden.

The great Banyan, figured in *Gardeners' Chronicle*, Oct. 1, p. 409, is big—a needless remark; its main stem is 48 feet in circumference, and it is 106 years old. In 1886 it had 232 aerial roots, many big enough to form the trunk of a fine tree. Now there are, of course, many more. The space covered by this gigantic tree is about 70 yards through. On one side a huge branch, which must have been some 40 yards long, was whipped clean out by a cyclone, how I cannot imagine, and many others are supported, some by brickwork. The tree is in good condition, and apparently growing as freely as ever. As there is little vegetation in its immediate neighbourhood, there seems to be no reason why it should not go on for a long time. Philodendrons, Anthuriums, and other creepers, grow over its main stem, and along its chief arms.

I am told much alteration has been made in this part of the garden, it is now covered with grass, gently undulating, and with fine roads; whereas previously it was quite flat, and more or less overgrown. A portion near is quite English in its aspect, being planted with Dalbergias, and such like. Were it not for the stems of a few tall Phoenix, one might be looking at an English landscape from the distance. Before reaching another fine avenue of Polyalthia longifolia, nice regular pyramidal specimens, some 30 feet high, Mr. Proudlock pointed me out a bush of Lagerstroemia tomentosa. He tells me its orange-red flowers are a magnificent sight in the rains.

On the other side of the avenue we made a *détour* to look at a Cannon Ball tree, a specimen of which was recently figured in the *Gardeners' Chronicle*. It was not in fruit, but I saw some flower-buds, borne on the main trunk—a curious sight, as it was $2\frac{1}{2}$ feet in diameter—the old flowering-stalks, some of considerable length, still remain. Its name is Couroupita guianensis—a native of the West Indies. Opposite another fine Terminalia is the Brownea before referred to. They are not yet considered to be in flower—it is still too cold (though as I write the thermometer is 72° in my cool room), but I saw many hundred heads of blooms, chiefly coccinea and other varieties, but none of grandiceps. They were, however, not large, and evidently not fully developed. This avenue, or rather tunnel, about 100 yards long, must be a magnificent sight in the season. There is but little perceptible cessation of growth all the year round with these plants.

The pond or lake with its winding banks is again touched at this point—it has three islands on its surface—clothed with rich vegetation, and in the

distance a view is caught of the long Grevillea robusta avenue—some 40 to 50 feet high.

The Palm-house—a great octagon, before referred to, is now reached. Rarely have I seen a prettier sight than the interior of this place—winding walks, and low, rockery-edged beds. All kinds of what we call stove plants, Palms, and Ferns, most tastefully arranged, grow with extraordinary freedom—the great point being to keep the plants from overcrowding and to thin sufficiently. A pretty creeper up one of the pillars supporting the roof is worth naming—Faradaya papuana—with white, powerfully-scented flowers, not unlike a Honeysuckle. On leaving the house and looking north, one sees a great Parkia biglandulosa, a tall tree, with small pinnate foliage, and a Sterculia ornata, a fine sight, completely covered with creamy white racemes from top to bottom. Passing a specimen of the Log-wood tree, the Little Banyan is reached—large enough in all conscience—it is nicely draped with Philodendron and other creepers. The soil round the base of the main stem is hidden by Tradescantia.

Close here is a model plantation of the best varieties of Mangos, and in the distance I caught sight of tall pillars of Thunbergia—blue and white ones—some 70 feet high, draping old Casuarina stems—a fine sight though not in flower.

The flower garden is now soon reached, on the right of which is another large, though low house, flanked on either side by two tall Araucaria Cunninghamii. Beds of various shapes, filled with what annuals will do, composes this garden. I was too early to see any results—particularly as the coldest season is now over, and it daily becomes warmer—but Mr. P. tells me the results are good.

Within the house are all kinds of plants, which, by-the-bye, do equally well outside—Pothos, Ferns, Alocasias, Palms, Anthuriums being amongst the number. I expect these houses are most useful in the hot weather as shade, especially to Ferns.

Outside the house in front of a fine clump of Crotons is a big bush of Ixora Duffi—fine broad heads of flower are now being borne; and a little beyond is a fine group of Conifers, Cupressus sempervirens, Biota orientalis, Podocarpus chinensis, all three species of Araucaria already named, Cupressus torulosa, and some Pinus longifolia, with leaves 14 inches long, of a rich green, glistening in the sun—a very pretty Pine, and more luxuriant here, though not so tall, than I think I have seen it anywhere else.

A big bed of Euphorbia heterophylla close here, attracts notice, the verticil of bigish bracts at the end of each shoot is curiously coloured. One half of the bract is bright vermillion, the other being bright green; there is no intermediate shade, the line of demarcation between the two colours is sharp.

Near the rose-garden, not far from this house, is a fine group of Palms, but the Roses are poor; we can expect little else here. I was surprised to catch sight of a Magnolia grandiflora, Exmouth variety, in fine condition. It is shaded by a jungle of Browneas and an Amherstia, a curious mixture.

Another long house, in which are the Nepenthes in fair condition, and some Orchids hanging from the roof, as well as some on the brick beds, now comes into view. Some of the Orchids are good—Vanda Roxburghii, Cyrtopodium Spicerianum, Stanhopea eburnea, Calanthes, and several Phalaenopsis, being in flower. On the rockery near the doors are Ferns and many low-growing stove plants. A curious plant, a native of the Andaman Isles, was pointed out to me by Mr. Proudlock—Hydnophytum andamanense. It is grown as a pot-plant, and has a curious, thickened, short, round stem, and thread-like foliage.

The nursery is a little beyond, with all kinds of small plants, and several glasshouses for use in the cold season. Cattleyas, Lælias, and Phalaenopsis, are found to require this protection in the cool months, but the two former are nevertheless not good; it is also too wet for them in the rains. These glasshouses are not heated, or Cattleyas and Lælias might perhaps do better.

I noticed some magnificent plants of Anæctochilus Dawsonianus, as well as some Vanda teres, grown on teak sticks, in fine condition; they receive partial shade.

There is a fine house of Dendrobiums, certainly the Orchid genus best grown in India. All kinds are represented; densiflorum, albo-sanguineum, Dalhousianum, and moschatum, being amongst the best. Cymbidiums were also good, and Phaius Wallichii especially so. *James H. Veitch.*

SCOTLAND.

MR. JOHN FORBES' NURSERY, HAWICK, N.B.

I WAS desirous of seeing some autumn-flowering plants at their best, and with that intent, visited the above nursery on September 12. The first objects that attracted my attention were the large beds of East Lothian Stocks, white, crimson, scarlet, and purple, and white and crimson Wallflower-leaved. The strain was a good one, for the percentage of doubles to singles was very large. Carnations are extensively grown, and among the many beds (of which the old plants were layered) some fine varieties were remarked. Mr. Forbes pointed out some beds which were much stronger than the others, having more grass, more flower-spikes, and looking better in every way; these beds were planted in autumn, and clearly showed the advantages of autumn planting. Several large beds of Pentstemons were noticed, which looked beautiful, the masses of flower-spikes, and the individual blooms being very fine. Large beds of Antirrhinums were masses of bloom, and the flowers would be hard to beat for size and colouring. There were two beds of these plants of a variety called Crimson Bedder, and that is certainly well-named; it is of dwarf habit, and flowers profusely. Another of much the same habit is named White Bedder: it is equally good.

As is well known, Mr. Forbes grows Pansies to perfection, but it was rather late for these; still, there was a good number of blooms expanded. The Phloxes were represented by the best varieties, and some fine heads of bloom were observed; very dwarf late-flowering varieties were conspicuous for their numbers. Among the herbaceous plants were many good things, and of which there is a large collection.

In the glass department I will only mention a few of the good plants that I had time to note. One long span-roofed house was full of single and double-flowered tuberous Begonias, and although these were past their best, they formed still a fine display. A fine strain of excellent Cockscombs, and another of the feathered Cockscomb (Celosia pyramidalis) grown for seed-saving purposes. A number of Hydrangea paniculata were in flower. It is a fine autumn decorative plant for the glasshouse, but I doubt if it would withstand the cold of an ordinary Scotch winter. Table plants, and those for room decoration, seem to be in great demand.

A large span-roofed pit was filled with East Lothian Stocks in pots. The plants were carrying a splendid crop of seed, which was almost ready to gather. *J. R.*

DUTHIE PARK FLORAL FÊTE.

The accounts of the above—held in Aberdeen on Aug. 5 and 6 last, under the auspices of those directors of the Royal Horticultural Society of Aberdeen who did not approve of holding military tournaments in connection with flower shows—have now been made up. The entire takings amounted to £601, and the expenditure to £487, leaving a balance of £114. Of this sum, £100 have been sent as a donation to the Aberdeen Sick Children's Hospital, the remaining £14 being reserved for any incidental expenses which may occur. The committee have resolved to present one of the handsome Medals struck in commemoration of the fête to Mr. McBain, C.A., Aberdeen, for the admirable manner in which he carried out the secretarial duties; to Mr. Harper, keeper, Duthie Park, for the trouble he took in connection with the fête; and one to the bandmaster of the Royal Scots Fusiliers. The committee presented a handsome copy of the Medal in gold to the Chairman of the committee, bearing the following inscription:—"Awarded to Baillie Lyon by the Duthie Park Floral Fête Committee, 5th and 6th August, 1892."

In connection with the recent floral gala and military tournament of the Royal Horticultural Society of Aberdeen, the directors have resolved to present Colonel Sir Arthur Grant, Bart., of Monymusk, with an illuminated address and a handsomely-bound album of photographic views, depicting the

various phases of the tournament, as a slight recognition of the invaluable services rendered by him in connection therewith. Albums will also be presented to Major Wood, R.E., and Captain Forbes, R.E., who rendered yeoman service in the carrying out of the arrangements.

THE BULB GARDEN.

SOME NEW FORMS OF COLCHICUM AUTUMNALE.

THE handsomest of these free-blooming hardy bulbs is *C. Sibthorpii*, figured on plate 7181 of the 117th volume of the *Botanical Magazine*, and which is a native of the mountains of Greece and Macedonia. It was introduced into cultivation by Herr Max Leichtlin, of Baden-Baden, who sent bulbs to Kew in 1890, where it bloomed in the autumn of 1891, and it was distributed to the public for the first time from the same source at the commencement of this autumn, and it is now in full bloom in my garden. It is, however, evidently a very variable plant, as of the five bulbs sent me from two different nurserymen, the flowers of no two are exactly similar, some having thin narrow-petalled flowers resembling a dark-red form of *C. Parkinsonii* or *tessellatum*, while others are much lighter in colour, with almost white centres, and finely-cupped flowers with well-rounded petals; these latter are, of course, much the more beautiful. This *Colchicum* was figured by Sibthorp in his fine work, *Flora Græca*, under the name of *C. latifolium*; but this name is now determined to belong to the variety known as *C. Byzantinum*, which with us is the earliest to bloom of the whole genus.

Another fine deep-coloured and early-blooming *Colchicum* has come to me under the name of *C. Bornmülleri*, but this only seems to be a fine form of *C. speciosum*. Another with deep-rose coloured and perfectly-cupped flowers, which came to me under the name of *C. speciosum maximum*, seems to me in no wise to merit the latter appellation; as though very beautiful, it is by no means a specially large flower, and seems to me to be identical in every way with a form I have grown for some years under the name of *C. speciosum persicum*. The last I have to mention is *Colchicum Decaisnei*, which was first described by the French botanist, Boissier, in his *Flora Orientalis*, vol. v., part 1, p. 157; it seems, however, to be almost unknown in this country, as on making enquiries about it at Kew, I find there is no specimen of it in the Herbarium. It was, I believe, first introduced into cultivation by Messrs. Dammann, a German firm, who grow many rare bulbs in the vicinity of Naples, and who, not knowing what it was, sent it to the late Dr. Regel, of St. Petersburg, for identification, who pronounced it to be *C. Decaisnei* of Boissier. From this firm I received my bulbs, which are now in full bloom in a pot in my greenhouse, and are very pretty, though of rather small size and thin texture of petal. The flowers are of a delicate shade of rosy-lavender, and about $2\frac{1}{2}$ to 3 inches high; they are abundantly produced, each bulb yielding from twelve to fifteen. The flowers are said to be sweet-scented, but this I cannot perceive. This variety is closely allied to *C. lætum*, but is, in my opinion, well worth cultivation. *W. E. Gumbleton*. (See p. 453.)

HOME CORRESPONDENCE.

THE WHITE WATSONIA.—A communication respecting this bulb appeared in your paper under date August 20, 1892, signed "P. MacOwan, Cape Town." Your correspondent says, amongst other things, "that he does not suppose I had any intention of misleading the readers of my 'note.'" I certainly had no intention of "misleading" or leading any readers, for the reason that I never wrote, or in any way inspired the note referred to, and saw it for the first time in your journal. He twits me with my "want of information about the plant's origin." My information, on that point, however, is superior to his own. I know precisely the date when two bulbs of it were

sent to my predecessor. I further know from the finder himself the name of the farm, where he found it; and still further, I have at all times in conversation, and otherwise, on the subject given all the information I possessed to any one interested. *John T. Butters, Superintendent of Parks, Port Elizabeth.*

CARNATION MARGUERITE.—In the *Gardeners' Chronicle* for September 24 last we have read an article under the heading "Florists' Flowers," and signed J. Sheppard, in which the writer says that it would be interesting to know how the *Carnation Marguerite* originated. We have the pleasure to inform him that this plant was found by us in Sicily, and that it has been cultivated by us since the year 1882. *Dammann & Co., San Giovanni a Teduccio, Italy.*

TOMATOS AT BRIDGE OF ALLAN.—In these times, when Tomatos are grown so extensively and to such perfection, it is difficult to find any particular variety which shows a decided superiority over others. A notable example of success in the culture of the Tomato, and great superiority in the variety grown, came under the writer's observation at Cornton, near Bridge of Allan, during the past summer. Here, Mr. McGregor, who for some years was manager of extensive establishments at Waltham and in Guernsey, has recently started market gardening in general, and Tomato-growing in particular, and bids fair to maintain in the north the high reputation he won in the sunnier south. The sort grown is one of his own selection, and is remarkable for its smoothness, free-setting qualities, and the uniformity of its clusters. From 12 to 16 lb. of fine medium-sized fruit was borne on single stems, and a desirable characteristic of the variety is the simultaneous ripening of all the fruits on a cluster, thus enabling the grower to dispose of each *en masse*—a style which is becoming very popular in the market when the fruit is highly-coloured and shapely. Connoisseurs, I may add, pronounce the flavour excellent. Mr. McGregor believes in keeping the plants somewhat dry at the root until the first bunches are set, afterwards applying heavy doses of liquid manure, which in his case is sewage, and he attributes a good deal of his success to this kind of treatment. But be that as it may, the appearance of these Tomato-houses when at their best, with no trace of disease on the plants, was wonderful, and augurs well for the success and further development of this business concern. *J. M. G.*

STEAM VERSUS HOT WATER.—Before going to America in 1889 I had often heard that Messrs. Peter Henderson & Co., of New York, had most of their hothouses heated by steam, one of the first enquiries that I made at their nursery was about this subject, and I was informed that it did not answer and hot-water had been substituted for it. I am not sure what reason was assigned for the change, but it was undoubtedly a good one, or the firm would not have gone to such great expense as the change demands. I am in favour of steam-heating as practised in the American railway-cars, and wish our English companies would copy it, for there is no doubt it answers for that purpose and goes a long way towards making a railway journey comfortable in winter, but for hothouses I shall still rely upon hot-water which is perfectly efficient if plenty of boiler power is given and the apparatus is managed in a proper way, although it is quite possible steam might prove to be the cheaper in some few instances where it could be got from mills close at hand. *W. H. Divers, Ketton Hall Gardens, Stamford.*

WELL-COLOURED BLACK HAMBURGH GRAPES.—It was noticed the other day in "looking round" the gardens at Trafalgar Park, that the Black Hamburgh Grape in the two houses devoted to its culture was splendidly coloured, and carrying a good bloom, the bunches being of medium size and very compact. I have long been of opinion that Grapes colour much better in high situations than in low ones, and the fine colour of those at Trafalgar Park strengthens my conviction on this point very much indeed, as I know of no other garden that is situated at such a high altitude as Trafalgar Park. Mr. Fulford is to be complimented on the general good condition of the gardens and grounds under his charge. *H. W. W.*

A NOTABLE ELM TREE.—Within a few yards of the chapel at Trafalgar Park, Wilts, there stands an Elm tree of great size, which is however more remarkable for its girth of trunk than for its spread of branches, which is nearly 24 feet, from the ground up to a height of 6 feet, where it begins to branch. The tree is about 140 feet high, and is in fine condition. *H.*

VEITCH'S PRODIGIOUS POTATO.—This is one of the heaviest cropping varieties in cultivation, and a main crop variety of the highest quality, and remarkably free from disease. In 1891, the Rev. F. B. Dickenson, Ottery St. Mary, Devon, harvested a crop of this Potato yielding 105 lb. to each pound of seed planted. The Bishop of London's head gardener (Mr. A. J. Ballhatchet), raised 90 lb. from three tubers of seed size; and this year, Major Carew, of Elmsleigh, Exmouth, harvested 71 lb. of Potatoes, all sound and of good size, from one tuber; while his neighbour (Frederic Morant, Esq.), of Glenholme, Exmouth, raised 97 lb. from 2 lb. of seed planted. *Robert Veitch & Son, Queen's Seedsmen, Exeter.* [Veitch's Prodigious Potato was shown by the firm of R. Veitch & Son at the recent show at Earl's Court, where we had the opportunity of seeing a sample of it. It is a heavy, large oblong white tuber with rather deep eyes, like many American varieties, from which this one is derived, but this but little detracts from its value as a food producer. *Ed.*]

TREES NEWLY PLANTED.—In "D. T. F.'s" comment on my article in your last volume, p. 46, on cutting back newly-planted fruit trees, he seems to have entirely missed the main point for which I was contending. I thought I had put the case and its consequences clearly enough to most minds, but to him the picture is nothing but shadow. I need not here go into much repetition, but would like to remind your readers that my council with regard to cutting back referred particularly to newly-planted fruit trees; but "D. T. F.," in taking up the cudgels in defence of his newly-adopted theory of planting—the let alone—has endeavoured to make me an advocate for planting fruit trees for faggot-wood, and going back to the ancient "lashings and slashings" of not so long ago. He may see that I am no advocate for the first of these methods, he has only to turn to one of your issues for last February, wherein I stated that throughout the country a great many fruit trees would be found which would have more value as fire-wood than as fruit trees; and as for the latter, I am quite as much opposed to the lashing and slashing of established fruit trees as himself. May I ask "D. T. F." how many years ago it is since he gave up the "ancient lashings and slashings?" and especially how many since he gave up heading-back his newly-planted fruit trees? Did ever "D. T. F." try planting Raspberry canes without cutting back, and note the extent of successional growth made concurrently with the crop of fruit the canes may carry the following season? Or did he ever try raising, say two Cob-nut bushes of one variety, and both weakly to start with, by "slashing" one down to the ground and leaving the other alone, and then noting which was the stronger and better furnished bush, at maturity—and to go even farther, which arrived at maturity first? If not, let him try some such simple experiments as these—the results will be edifying even to him. Let me assure "D. T. F." that the time was long ago when I first made myself familiar with the influence that laying-in plants and trees by the heels had on the formation of fresh root fibres; but had I been he, and noticed such a common fact, I would, for the benefit of less enlightened readers, have endeavoured to give my reasons for this abnormal activity and I would have also said that time when done as a particular bearing and position more so upon the roots of those trees and plants susceptible to this influence; neither would I have neglected to add that there are a great many trees, shrubs, and plants, the roots of which, disturb them how you like, would not be thus influenced at all. "D. T. F." speaks of the amount of skill and capital invested in developing baby fruit trees, and wonders why they should not be allowed to enter upon their life-long business at once of bearing fruit. I suppose because people do not want them to remain babies, as they assuredly would do if allowed to bear at once, and as much as they would; or, if "D. T. F.'s" axiom of like produces like, these baby trees would only bear baby fruit. Depend upon it, most people nowadays, although they have to buy baby fruit trees, do not wish them to remain pigmies for all time, but rather endeavour to grow them into fair shape and size; they want dwarf trees, but they also want to count the crop of such by the bushel, instead of by the dozen. To hurry such trees into fair shape and size—or, in other words, into a remunerative bearing condition—cut them back at time of planting, less or more, according to the time this operation takes place, and have no fear for the results. There is no doubt at all, as "D. T. F." remarks, that the modern methods, restricted as they are to stocks and double grafting, have hastened and heightened fertility in a wonderful degree; but even

with these dwarf early-fruiting trees, there is no reason why they should not be allowed to establish themselves, and fairly fill the spaces allotted them; instead of making and retaining them as pigmies, these ought to be retained for pots. "D. T. F." may talk as he likes of faggot-wood, but the disposition to grow this in young trees—the class he means, I assume—is very easily checkmated in the way he himself mentions, or as many of our best fruit-growers prefer by root-pruning, or what is equally good in the case of small-sized trees, by lifting them. Does he therefore imagine that any sane fruit-grower who knew his business would allow his young trees to present the picture—not a whit overdrawn—I gave of those on the let-alone-system in your issue of June 4, p. 730. I think it almost needless here to point out, even to the veriest tyro in fruit-growing, the ultimate difference, commercially, between these two types of fruit trees. Many amateurs are far ahead of "D. T. F." in regard to this matter of heading back newly-planted fruit trees, and it was, therefore, a pleasure to me to meet with several who had tried the let-alone system, but had gone back to cutting-in, and this, too, in a county where the advice was invariably tendered to "let them alone for the first twelve months," in order to enable, as they were told, "the trees quicker to establish themselves by inducing greater root activity." While lecturing last winter in Kent, I visited many of the parochial clergymen, nearly all of whom are ardent horticulturists, and, as such, many stand out head and shoulders above their professional brethren. On these occasions a walk round the garden was of all things the most natural to propose and be accepted, and while in one of these gardens I noticed a fine assortment of both Apples and Pears had been recently planted (this neighbourhood being famed for its fine Pears), although a great many older trees abounded in the place. I noticed also that every one of these newly-planted trees had been pretty freely headed back, and on my remarking to the owner that I was pleased to see he had taken the precaution to do this, "Ah!" he replied, "that is the result of experience. I soon found out that if I left them to bear and grow as they liked from the first, I should never get a tree at all." And really this is the whole thing in a nutshell. This heading back does pull the roots abreast of the tops in measure, but not in time, and it certainly does improve and intensify the fertility of the top ultimately. "D. T. F." is alive to the fact that cutting back trees establishes them quickly, else how would they grow faggot wood? By this means, then, let our trees be established; it is impossible for them otherwise to carry on the dual work of bearing fruit and making good growth at one and the same time. I have hitherto confined my remarks with regard to this question of heading back to young fruit trees, but what would "D. T. F." think of moving large deciduous trees of, say twenty years' growth, and 25 to 30 feet high, with no ball and the roots horribly mutilated, and leaving severely alone, and this too in the month of February? Will he maintain that success would have attended his efforts? But what would he say to fifty trees of over thirty-five years' growth, 40 to 50 feet high, and from 3½ to 4½ feet bole circumference, being moved a distance of 2 miles with most complete success in the first week in March, and this too without any previous preparation whatever? An oft quoted dictum of "D. T. F.'s" is "nothing succeeds like success," but I think he will admit this was a success. Had these trees been left alone (their branches intact), every one of them, it is almost needless to say, would have miserably failed. The first bursts of April sunshine would have forced into momentary growth the thousands of buds to draw, like so many leeches, upon the life-blood of the branch tissues, while what little remained of the roots still lying inert, ill provided to supply even a moderate demand on their resources. Although his criticisms are welcome, "D. T. F." should, I think, have made himself master of the main points for which I was contending in the article in question, before endeavouring a reply in the way that he has. Whether I am qualified to pronounce *ex cathedra* or otherwise on the precedence of growth as between root and top, I certainly do know what evil effects non-pruned tops have upon the establishment and permanent well-doing of newly-planted fruit trees. Your correspondent had better go burrowing now, and try to unearth theories more tenable, and in the shape of reason for his adhesion to the cult of leave-them-alone, and if he will only give this matter for the future a little closer attention than he has yet done, he will be able, doubtless, to find a reflex,

with a good deal more substance than shadow in it. *Pomum.*

APPLES IN STAFFORDSHIRE, ETC.—In a season like the present, when fruit is scarce, and anything approaching a good crop is rarely to be met with, it was an agreeable surprise to me recently to find some trees cropping well at Ingestre Hall, Stafford, the seat of the Earl of Shrewsbury. The fruit was of fair size, and beautifully clean-grown, the varieties being Lord Suffield, Adams' Pearmain, Cox's Orange Pippin, Devonshire Quarrenden, Duchess of Oldenburg, Golden Russet, Lemon Pippin, Lord Lennox, Red Astrachan, Sturmer Pippin, Keswick Codling, Wykin Pippin, Cox's Pomona, Grenadier, Worcester Pearmain, Mère de Ménage, Warner's King, Golden Noble, and Bramley's Seedling. The trees were in capital health, and free from blight and aphids. The grounds and surroundings of this splendid place were in capital order. I also noticed a capital lot of specimen Chrysanthemums in vigorous health. These were being placed in their winter quarters. The hot-houses were in good order, and the specimens highly cultivated. There were a capital house of late Grapes and a good crop of late Melons. Every department bore traces of the careful supervision of the head gardener, Mr. Gilman. *Wm. M. Baillie, Flitwick Nursery, Beds.*

CHRYSANthemUM AND PELARGONIUM GRAFTING.—I noticed a curious and successful experiment in this direction recently at Boston House, Brentford (Colonel Clitheroe's), where the gardener, Mr. C. Jeffries, has grafted eight sorts of Pompons on the well-known variety Mrs. George Rundle, arranging the grafts so as to give some little arrangement as to proper balance of colour at the flowering period, which one will watch with some interest. By grafting the tricolor varieties on the green-leaved varieties, Mr. Jeffries finds that he gets a much quicker and sturdier growth, the tricolors, as a rule, being weedy and slow growing. A fine batch, observed recently, sufficiently established the truth of this statement. The plants, which formed capital little standards, were destined to form specimens for vases, and similar decorative purposes, and exhibited a clean growth, the foliage being more brightly coloured than is usually seen in plants cultivated under glass. *B.* [Pelargonium grafting to form standards for the greenhouse or flower garden, has been practised for a number of years. For stocks on which to graft strong-growing varieties, or better, seedlings which are usually great growers, are employed. Seedlings may be got up to a height of 3 or 4 feet by training the main stem and stopping, not removing the side shoots. *En.*]

SOCIETIES.

NATIONAL CHRYSANthemUM.

OCTOBER 12.—The early autumn exhibition, and the second of the season, was opened on Wednesday, in the Royal Aquarium, Westminster, and although the entries were not numerous, some very good blooms were exhibited, and also some striking seedlings and sports.

The principal prize was for a group of Chrysanthemums arranged in a space not exceeding 72 square feet, quality primarily, and general effect, to be the leading features. Messrs. Reid & Bornemann, nurserymen, Sydenham, were 1st, with a creditable group for the season, containing some very fine blooms, especially of the Japanese and reflexed sections; some Pompons, also, were very well flowered. The 2nd place was taken by Mr. Norman Davis, nurseryman, Camberwell. Both of these groups would have appeared to much better advantage had the pots at the exterior been hid with some furnishing.

Mr. H. Neary, gr. to Rev. R. W. Powell, Holy Innocent's Vicarage, Hornsey, N., was 1st for six plants of Chrysanthemums (open), with two plants each of Madame C. Desgranges, George Wermig, and Mrs. Berrell, very even flowered and dwarf plants, containing some seventy or eighty flowers on each plant. The same exhibitor was awarded 1st prize for twelve plants, any varieties. This was not so good a collection as the six, and many of the flowers, especially on Madame C. Desgranges, were past their best. Mr. W. Howe, gr. to H. Tate, Esq., Streatham Common, was 2nd, who showed twelve tall standard plants, each bearing two blooms.

In the classes for cut blooms, some of the exhibits

were exceedingly fine. The 1st prize for twenty-four blooms, in eighteen varieties of Japanese, which was secured by Mr. W. Higge, gr. to T. B. Hankey, Esq., Fetcham Park, Leatherhead, being awarded to a really beautiful collection. The varieties were Condor, W. H. Lincoln, Violet Rose, F. A. Davis, Mons. Bernard, Madame Lacroix, Avalanche, E. Molyneux, Gloire de Rocher, Mrs. Nisbet, Boule d'Or, W. Tickner, Louis Boehmer, Val d'Andorre, Puritan, Sunflower, Miss Anna Hartshorn, Excelsior, Condor, and Irving Clarke; the 2nd position was taken by Mr. C. Cox, gr. to J. Trotter, Esq., Brickendon Grange, Hertford, who had fine blooms of Avalanche, C. Cox, and Boule d'Or; 3rd, Mr. C. Ritchings, gr. to Dr. Frankland, The Yews, Reigate Hill.

For twelve blooms, distinct (open), Mr. F. Rowbottom, gr. to H. R. Williams, Esq., The Priory, Hornsey, with W. H. Lincoln, Marquis de Paris, Mr. J. S. Fogg, Stanstead White, Edwin Molyneux (good), Bouquet de Dame, William Tucker, Coronet, (very nice), Mons. Jules Hubert, Mrs. Falconer Jameson, Mons. Bernard, and Amos Perry. Mr. James Agate, East Street, Havant, Hants, was 2nd, who included good blooms of Lillian Cope and Mrs. Irving Clarke. The 3rd place was secured by Mr. C. Cox, gr. to J. Trotter, Esq., Brickendon Grange, Hertford.

In the class for twelve incurved blooms, in not less than six varieties (open), and for six blooms of incurved distinct, the only exhibitor was Mr. W. Wells, Earlswood Nurseries, Redhill, Surrey. The specimens were only fairly good, but it is more difficult to obtain flowers of this section at an early date than those of the other classes.

Mr. Norman Davis made the only appearance in the class for twelve varieties of Pompons, in bunches of threes, and also secured the 2nd place for six varieties, the 1st prize in this latter going to Mr. E. Tickner, gr. to John Watney, Esq., Shermanbury House, Reigate, with very good *Mdlle. Elise Jordan*, *Black Douglas*, *Souvenir de Jersey*, *Curiosity*, *La Vogue*, and *Toussaint Maurisot*.

In the section for single-handed gardeners only, Mr. E. Tickner was 1st for twelve blooms of Japanese (distinct), and staged *Jean Delaux*, *Fanny Bourcharlat*, *Hamlet*, *Mr. Garnar*, *Louis Boehmer*, *Madame Lacroix*, *Mons. Bernard*, *Eynesford White*, *Val d'Andorre*, *Sunflower*, *Edwin Molyneux*, and *W. H. Lincoln*. This same exhibitor was 1st also for six varieties, being followed in this class by Mr. T. L. Turk, gr. to T. Boney, Esq., Cholmeley Lodge, Highgate. Miss Debenham, St. Peter's, St. Albans, obtained a 2nd prize for twelve bunches of Pompons, in the same section.

In the balcony were some tables upon which were exhibited as beautiful display as the florists are capable of. The competitions were for the best table of bouquets, wreaths, sprays, &c., illustrating the decorative value of Chrysanthemums, each exhibitor having the use of a table of 54 superficial feet. The 1st prize went to Messrs. Perkins & Sons, nurserymen, Coventry; the 2nd to Mr. R. Chard, Stoke Newington; and the 3rd to Mr. Henry O. Garford, florist, also of Stoke Newington; and Mr. F. W. Seale, Vine Nursery, Sevenoaks, was Highly Commended.

For three vases or epergnes, suitable for a dinner-table, Mr. W. Seale was 1st, Mr. J. R. Chard 2nd, and Mrs. Walter Mole, 22, High Street, Hemel Hempstead, 3rd.

Miscellaneous.—Mr. W. J. Godfrey, Exmouth, Devon, showed some first-class blooms of new seedling Chrysanthemums. Beauty of Exmouth, a large white Japanese, was awarded a First-class Certificate. Mr. Robert Owen, Castle Hill Nursery, Maidenhead, also had a lot of seedlings of some merit, particularly a seedling from E. Molyneux, which the committee have requested to be shown to them again.

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, obtained First-class Certificates for Mrs. Hubback, a large rose-coloured Japanese, and for Felix Cassagneux, a bronze-yellow Japanese. Mr. Fowler, an amateur from Taunton, brought some superb blooms of Felix Cassagneux, but these did not arrive in time for the committee to see them; also some capital blooms of Mr. J. S. Fogg and Mr. J. Woodstock.

Messrs. Pitcher & Manda, Hextable, Swanley, had a collection of fine cut blooms of all sections of Chrysanthemums, and some Asters, &c. (Silver Medal).

Messrs. Reid & Bornemann, some trusses of zonal Pelargoniums, for which a Vote of Thanks was awarded.

Mr. Norman Davis, Camberwell, had cut flowers of Pompon Chrysanthemums, a large collection of Asters, &c. (Silver Medal).

Messrs. Reid & Bornemann exhibited many seedling Chrysanthemums, one of which, a very pretty Pompon, the committee desired to see as a plant, the name of which was Rosie Tanoke.

Mr. H. J. Jones, Ryecroft Nursery, furnished a table with some good blooms of Chrysanthemums, arranged with Ferns, Palms, &c. (Silver Medal). Mr. W. Wells, of Earlswood Nursery, showed a large number of cut blooms of Chrysanthemums, including a beautiful white sport from Vivian Morrel, which the committee are to see again when better developed (Silver Medal). Messrs. Seale, Sevenoaks, had a very fine collection of Dahlia blooms (Silver-gilt Medal). Messrs. Cannell & Son, obtained a Bronze Medal for another collection of Dahlia blooms. Messrs. Jno. Laing & Sons, Forest Hill, staged a very pretty group of Begonias, Ferns, &c., and obtained a Silver-gilt Medal. This same firm also exhibited a very large collection of Apples and Potatoes, similar to those seen at Earl's Court last week (Silver Gilt Medal).

Messrs. J. Cheal & Sons, Crawley, had another excellent collection of Apples, and a few Pears (Silver Gilt Medal).

There was a very fine display of vegetables in competition for prizes that had been offered by Messrs. Sutton, of Reading, for Celery, Beet, Parsnips, Carrots, Leeks, Onions, Tomatoes, and Cauliflowers.

Floral Committee.

As is usual on these occasions, a meeting of the Floral Committee took place, when a number of new flowers were submitted, and the following awards were made:—A First-class Certificate of Merit was awarded to Japanese Beauty of Exmouth, a seedling from Avalanche, pure white, with lemon centre, a large, bold flower, of great promise, from Mr. W. J. Godfrey, nurseryman, Exmouth. Mr. Godfrey had Duchess of Devonshire, pale pink, with silvery reverse, which the committee wished to see again. Mr. W. Wills, nurseryman, Earlswood, had a white sport from Vivian Morrel, which the committee wished to see again. Mr. Wills also had a primrose sport from Mdlle. B. Feigny, and La Cherire, a deep yellow variety of the Sundowner type.

Messrs. Pitcher & Manda, nurserymen, Swanley, had Japanese Coral Queen of a very distinct hue of coral and orange; W. A. Manda, a bright yellow flower of the M. A. Haggas type; Mr. E. Shea, a pale yellow sport from La Croix; Mrs. Jewell, a yellow Japanese; Zanzibar, a reflexed Japanese of a deep yellow colour; and Ruby King, very like President Hyde.

Mr. C. Griffin, Coombe Bank, Kingston, sent Mrs. R. Darby, a large deep pink single Japanese. Mr. H. J. Jones, nurseryman, Lewisham, had Japanese Amos Perry, a very fine yellow variety in the way of Coronet, but considerably superior; Felix Cassagneux, gold and orange—a fine, reflexed October Japanese; Madame Eugène Klein, a very pretty blush-coloured variety, of great promise; and Japanese Mrs. Ironside, in the way of E. Molyneux, but of a different colour.

From Elstree House Gardens, Mr. E. Beckett sent Japanese Mrs. A. G. Habback of the type of E. Molyneux, carmine-amaranth, with silvery reverse, extra fine; awarded a First-class Certificate of Merit.

Mr. Robert Owen, nurseryman, Maidenhead, had Japanese Mrs. Myers, white, with lemon centre; Nathan Molyneux, like E. Molyneux, but with silvery and pink reverse; and October Yellow, very fine in colour.

Messrs. Reid & Bornemann had Hybrid Pompon Rosie Tauche, orange, edged with chestnut, a very pleasing variety, which the committee wished to see again. Some other flowers were staged, but some the committee will probably see again on a future occasion.

Obituary.

MR. ROBERT BULLEN.—We greatly regret to have to record the sudden death, on the 5th inst., of Mr. Bullen, the Curator of the Botanic Garden, Glasgow. He had been in his usual health till his sudden seizure. He was recently at the Earl's Court Exhibition, and attended a meeting of the Town Council of Glasgow only the day before his death. Previous to his undertaking the Curatorship at Glasgow, some twenty-four years since, Mr. Bullen was well known as an Orchid cultivator, being

then in the service of Mr. Turner, of Leicester, and when there he frequently enriched our columns with articles on the cultivation of those plants. Throughout the dreary times at the Glasgow garden, he maintained the plants in high condition, in spite of depressing circumstances, and was regarded by all who knew him as an excellent curator and a talented gardener.

The post vacated by his death is one of the best curatorships in the country. We understand that the appointment will rest with the Corporation of the City, who recently took over the management of the garden. Among the candidates mentioned is Mr. D. Dewar, the foreman of the herbaceous ground at Kew.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

Will any reader kindly inform A. MACDONALD how it is that his Raspberries fruit principally on this year's canes, and the canes made last year are unfruitful? He has at the present time some of the canes of this season in flower, and others are bearing magnificent berries.

Would some of the readers of this Journal kindly oblige CHAS. C. HURST by giving the measurement of the largest Elm tree in Great Britain (measured by its diameter 5 to 6 feet from the ground), and if it be not an Elm, the measurement to be taken in the same manner.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.								
	Above 42° for the week ending October 8.	Above 42° for the week.	Below 42° for the week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.	More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	Inch.	Ins.		
0	2	33	0	80	215	13	195	38.1	8
1	3	32	3	274	241	14	155	22.2	10
2	3	39	0	158	183	4	148	19.2	16
3	4	40	0	142	205	14	137	20.3	18
4	4	40	5	127	246	1	133	18.2	30
5	3	55	0	103	135	8	119	17.4	26
6	3	30	0	178	111	5	156	35.2	14
7	4	33	0	118	163	9	156	28.4	20
8	4	43	0	75	116	4	141	22.4	35
9	3	34	0	140	121	5	171	29.4	17
10	4	40	0	69	131	1	150	29.3	18
*	3	71	0	66	42	2	139	20.4	40

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

THE following summary record of the weather for the week ending October 8, is furnished from the Meteorological Office:—

"The weather was in a very rainy and unsettled condition throughout the period, the rainfall at most of the eastern and south-eastern stations and in the north of Scotland being unusually heavy. Thunderstorms occurred at times, especially in the south-east.

"The temperature was below the mean, the deficit ranging between 2° and 4°. The highest of the maxima were recorded, as a rule, on the 4th, when they varied from 61° in 'England, S.,' and 60° in 'England, E.,' and the 'Channel Islands,' to 56° in 'Scotland, W.' and 'Ireland, N.' The lowest of the minima, which were registered either at the beginning or end of the week, ranged from 32° in 'Scotland, W.' and 'England, S.W.,' to 38° in 'Ireland, S.,' and to 44° in the 'Channel Islands.'

"The rainfall exceeded the mean in all districts, except 'Ireland, S.,' the excess in 'Scotland, N. and E.,' and 'England, E.,' being exceptionally large.

"The bright sunshine slightly exceeded the mean in 'England, S.W.,' and the 'Channel Islands,' but was considerably less in almost all other districts. The percentage of the possible amount of duration ranged from 40 in the 'Channel Islands,' 35 in 'England, S.W.,' and 30 in the 'Midland Counties,' to only 10 in 'Scotland, E.,' and 8 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, October 13.

TRADE dull. Cobbs easier. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, p. half-sieve	1 0- 3 6	Melons, each	... 0 6- 1 3
Cobs ...	... 85 0-...	Peaches, per doz.	... 2 0- 6 0
Grapes, per lb.	... 0 6- 1 6	Pine-apples, St. Michael	... 4 0- 6 0
Lemons, per case	... 15 0-35 0	Plums, p. half-sieve	2 0- 4 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	15 0-30 0	— per 100	... 5 0-8 0
— specimen, each	7 6-21 0	Ficus elastica, each	1 6-7 6
Asters, per doz.	... 6 0 12 0	Fuchsia, per doz.	... 3 0-6 0
Begonia, per doz.	... 6 0-12 0	Heliotrope, per doz.	3 0-6 0
Chrysanthemums, p.		Lilium, various, doz.	18 0-39 0
doz.	... 4 0-12 0	Marguerite, per doz.	6 0-12 0
— large plants, ea.	1 6 2 6	Mignonette, doz pots	6 0-12 0
Coleus, per doz.	... 3 0-6 0	Palms, various, each	2 0-10 0
Cyperus, per dozen	4 0-10 0	— specimens, each	10 6 84 0
Dracena, each	1 0-5 0	Pelargoniums, scar-	
Erica, various, per		let, p. doz.	... 4 0-6 0
dozen	... 9 0-13 0	Solanums, per doz.	9 0-12 0

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.	Orchids:—	s. d. s. d.
Arum, per doz. bl. ...	4 0-8 0	Cattleya, 12 blms. 6 0-12 0	
Asters, p. doz. bun. ...	4 0-9 0	Odontoglossum	
Carnations, 12 blms. 1 0-2 0		— crispum, 12 blms. 2 0-6 0	
Chrysanthemums, p. doz. blooms 0 6-2 6		Mignonette, 12 bun. 2 0-4 0	
— p. doz. bunches 3 0-9 0		Pelargonium, scar-	
Eucharis, per dozen 3 0-5 0		— let, per 12 bun. 4 0-6 0	
Gardenia, per dozen 1 6-3 0		— 12 sprays ... 0 6-1 0	
Gladiolus, per dozen spikes ... 1 0-2 0		Primula, double ... 4 0-6 0	
Heliotrope, per doz. sprays ... 0 3-0 6		Pyrethrum ... 2 0-4 0	
Lilium Harrisii, doz. 4 0-9 0		Roses, Tea, per dozen 1 0-2 0	
— various, do. ... 1 0-3 0		— coloured, dozen 1 0-1 6	
Maiden Hair Fern, 12 bunches ... 4 0-6 0		— yellow (Maré-	
Marguerite, per doz. bunches ... 3 0-4 0		— chals), per doz. 2 0-5 0	
		— red, per dozen ... 1 0-2 0	
		— outdoor, 12 bun. 4 0-8 0	
		Stephanotis, 12 sprays 4 0-6 0	
		Tuberose, 12 blms. 0 4-0 9	

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes Globe, ea.	0 4-0 6	Mushrooms, punnet	2 0-
Beans, French, lb. ...	2 6-3 0	Mustard and Cress,	
Beet, red, per dozen	2 0-3 0	punnet ...	0 4- ...
Carrots, per bunch...	0 4-0 6	Parsley per bunch...	0 3-0 6
Cauliflowers, each	0 3-0 6	Shallots, per lb.	0 6- ...
Cucumbers, each	0 4-0 8	Spinach, per bushel	3 6- ...
Endive, per dozen	2 0-3 0	Tomatoes, per lb.	0 4-0 9
Herbs, per bunch	0 8-1 0	Turnips, per bunch...	0 4-0 6
Lettuces, per doz.	1 6-2 0		

POTATOS.

The trade for best samples is improving, and are worth from 75s. to 80s., with a prospect of rising. Ordinary samples, 50s. to 60s., and not a good demand. J. B. Thomas.

NOTICES TO CORRESPONDENTS.

*** PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

ALBUM FOR PRESERVING FERN FRONDS: C. L. Any bookbinder would make one for you if you furnished him with the particulars of size, &c.

BACK NUMBERS OF THE "GARDENERS' CHRONICLE": W. A. Y. These are sold at 3½d. each, post-free. All copies are out of print up to and including 1887.

CAPITAL FOR A MARKET GARDENER AND HARDY FRUIT GROWER: *Perplexed.* The usual estimated capital of a farmer for an arable or mixed farm is put at £10 per acre. We think that £15 would be nearer the mark, and a person going into fruit and vegetable farming, who cannot look for full returns from the land for the first two or three years, nor, indeed, for several years after taking possession, would need to have, at the least, £40 per acre of occupied land. Vegetables give quick returns, but the selling prices are low, unless you happen to have a good early crop of anything. Forced things pay well if produced in the best condition; these are Seakale, Rhubarb, Asparagus, Mushrooms, Mustard and Cress, Cucumbers, Tomatoes, Beans, Chicory. Of course, if the occupier work hard early and late, and keep his workpeople well in hand, he may do with as little capital per acre as the farmer with his more simple methods of culture, but it is then very uphill work.

CARDIFF CHRYSANTHEMUM SOCIETY: *G. O. M.* The secretary is Mr. F. Searl, 21, Clive Road, Carton, Cardiff.

CARNATION: *Enquirer.* The too common Carnation fungus. There is no known cure short of burning every diseased plant.—*D., Chester.* We find the Carnation fungus, *Helminthosporium echinulatum*, in fine condition, but no grubs. See *Gardeners' Chronicle*, 1886, August 2.

CATERPILLAR: *P. P.* It must have escaped in transit, or become smashed beyond recognition. Was it a leaf miner? They are common on Chrysanthemum leaves. Kindly send again in a box.

CELERY: *F. B.* The Celery has "bolted," that is, it has begun to push up the flower-stalk. The seed was sown too early, or the plants have suffered from drought.

CORRECTION.—The address of Mr. John Stewart, whose article on steam heating appeared in our last issue is Cartvale, Paisley, not Cartnall, &c.

CRACKING OF PEARS: *Haynford.* This is due to the presence of a fungus, which destroys the vitality of the rind and outer portions of the flesh of the Pear, so that they cease to grow in proportion to the rest of the Pear, and are in consequence, cracked by the pressure of the growing portions. The name of the fungus is *Fusicladium pyrinum*. We are sorry not to be able to recommend anything beyond what you tried. In the young state of the fruit another year, it might be well to try spraying with sulphate of copper on the leaves and young fruit, but we hardly think the game would be worth the candle.

EUCHARIS: *J. A. B.* The large size is due to the union of two flowers.

GALVANIZED-IRON WIRE AND PLANTS: *A Lover of Flowers.* We do not understand how injury could occur if you have painted the wire, unless it be from friction. Can you send us a piece for inspection?

INSECTS, ORCHID ENEMIES: *W. H. White, Burford Lodge.* The bulbs of imported *Dendrobium Phalaenopsis* are attacked by the larvæ or grubs of a small beetle belonging to the family *Calandrinæ*. We cannot, however, find any grubs, larvæ, or beetles in the stems, and it is consequently necessary for you to examine carefully for any indications of the living parasites, which should be found and destroyed. *I. O. W.*

NAMES OF FRUITS: *C. W. Strickland.* Pear Triomphe de Jodoigne.—*T. R.* 1, Belle de Bruxelles; 2, Durondeau; 3, not recognized; 4, Beurré Superfin; 5, Josephine de Malines; 6, Van Mons Léon Leclerc.—*Alpha.* 1, Emile d'Heyst; 2, Doyenné Boussoch; 3, Alexandre Lambre; 4, Glout Moreau; 5, Napoléon; 6, Baronne de Mello.—*E. Roberts.* Kirke's Lord Nelson.—*W. Watson.* 1, Kerry Pippin; 2, Duchess of Oldenburg.—*Ed. G. Allen.* 1, Stone's or Loddington Seedling; 2, Emperor Alexander; 3, Cellini Pippin.—*W. Naish.* Emperor Alexander.—*W. Lazenby.* Large one, Gansell's Bergamot; small one, Comte de Lamy.—*R. Morrow.* Royal Somerset.—*A. T. S.* 1, Keewick Codlin; 2, Peach Apple; 3, New Hawthornden; 4, Beauty of Kent.—*E. Bennett.* 1, Warner's King; 2, Blenheim Orange; 3, Boston Russet; 4, Yorkshire Beauty.—*Paddy from Cork.* 1, Hoary Morning. *Walter Parker.* 1, Old Nonsuch; 2, not recognised; 3, King of the Pippins; 4, Ribston Pippin; 5, Lamb Abbey Pearmain; 6, not recognised; 7, Shepherd's Fame; 8, Potts' Seedling; 9, Beurré de Capiaumont; 10, Zephirin Gregoire; 11, Paradis d'Autonne.—*Reginald.* Old Nonsuch.—

T. S. 1, Peasgood's Nonsuch; 2 and 3, not recognised; 4, King of the Pippins; 5, Potts' Seedling; 6, Red Quarrenden; 7, Hollandbury; 8, Fearn's Pippin; 9, Mank's Codlin; 10, Ribston Pippin; 11, Worcester Pearmain; 12, Blenheim Orange.—*R. J. Sherring.* 1, unknown; 2, Adam's Pearmain; 3, Claygate Pearmain.—*V. S.* 1, unrecognised; 2, Red Astrachan; 3, Fearn's Pippin; 4, Old Nonpareil.—*F. E.* Plum: *Prunus insititia* (the Bullace).

NAMES OF PLANTS: *J. S.* *Datura Stramonium*, the Thorn Apple. It is a Solanad, and very poisonous.—*B. D.* 1, *Retinospora filifera*; 2, *Abies nigra*; 3, *Cupressus Lawsoniana aurea*; 4, *Juniperus sinensis aurea*; 5, not recognised; 6, *Retinospora obtusa*; 7, *Retinospora obtusa* var. *pygma*; 8, *Thuja occidentalis*.—*C. Steele.* The fragment of immature *Agaric* is insufficient for determination. No spores are developed, so that even the section to which it belongs is uncertain (*M. C. Cooke*).—*C. B. G.* *Rhus Cotinus*, the Wig-Plant.—*J. W.* *Helianthus rigidus*. The Ficus and the fruit next week.—*R. S.* 1, *Saponaria officinalis* (*Caryophyllaceæ*). Britain; 2, *Aster novæ-angliæ* variety, Composite, United States; 3, *Desfontainea spinosa*; 4, *Aster Linosyris*, Composite, Britain.—*I. Q.* *Catasetum tridentatum*.—*C. H.* 1, *Adiantum Farleyense*; 2, *Cheilanthes elegans*; 3, *Pteris serrulata cristata*; *Pteris serrulata*; 5, *Adiantum cuneatum* variety; 6, *Polystichum angulare*.—*S. O.* *Epidendrum atropurpureum* (var. *Randi*).—*H. T. R.* *Odontoglossum tripudians*.—*K. H.* *Farleigh*. *Catasetum macrocarpum*.—*C. P.* *Catasetum macrocarpum*.—*A. H. B. F. B.* 1, *Veronica Traversii*; *Abelia rupestris*; 3, *Sedum acre*; 4, *Saxifraga japonica*; 5, *Sedum carneum variegatum*; 6, too wet or moist, perhaps; should be grown in a basket.—*W. Naish.* 1, *Daboecia polifolia* and white variety; 2, *Nerium undulata*; 3, *Epidendrum variegatum*; *J. M.* 200, *Athyrium filix-fœmina*; 150 *Lastrea filix-mas*, var. *abbreviata cristata*; 60, *Lastrea spinulosa*; 40 *Lastrea recurva*; 29, *Lastrea rigida*; 400, *Athyrium filix-fœmina* var.—*J. P.* *Cymbidium giganteum* and *Vanda tricolor insignis*.—*A. B.* *Solidago canadensis*. Fruits next week.—*E. C. L.* *Calycanthus occidentalis*.

ORCHIDS: *J. T.* *Cattleya chocoensis* which is presumably a form of *C. Trianae*, should succeed under the same treatment as the other *Cattleyas* in the house. Perhaps it does not like its position in the house. Examine the potting compost and drainage without disturbing them much. *Paphinia grandis* must be kept in the East India-house, suspended in a basket. The night temperature might be 62° to 63° for a month longer, and then 60° till the middle of February. By day 70° to 75°.

SCALE ON MESEMBRYANTHEMUM: *C. N.* *Pulvinaria meembryanthemi*; see *Signoret Essai sur les Cochenilles*.

SEEDLING CACTUS DAHLIA: *R. M.* A beautiful coloured flower, and worth preservation as a decorative variety, if the plant is floriferous.

SITUATION IN A BOTANICAL GARDEN ABROAD: *J. T. Rose.* You should proceed by making application to the Superintendent at Port Elisabeth. Java is a dangerous climate for a European, and you would, moreover, be obliged to learn the Dutch language.

STRAWBERRIES POTTED SEPTEMBER 1: *R. Gen. B.* If the plants fill their pots (48's) by the end of the present month, they may be forced early; but it is now too late to repot them into 32's, the season of growth being too short to allow of the roots permeating the whole of the new soil. Had the runners been potted early in August, and repotted one month later into 32's, these pots would have become filled with roots by the end of October. You began too late.

COMMUNICATIONS RECEIVED.—*H. E. M.*—*W. E.*, shortly.—*T. M.*, Philadelphia.—*A. D.*—*H. H. D'O.*—*J. A.*—*G. B. L.*—*J. T.*—*P. W.*—*W. J.*—*Journal of Horticulture*.—*I. Ness.*—*G. H.*—*T. Woodford*.—*E. C.*—*A. A. Pope*.—*T. H.*—*J. T. N.*—*R. E.*—*E. M.*—*R. M.*—*W. Crump*.—*J. G. Baker*.—*W. O. C.*—*J. D.*—*J. O'B.*—*Messrs. Sutton & Sons*.—*J. Chalmers*.—*F. Gough*.—*H. W. W.*—*Wild Rose*.—*E. C. L.*—*D. X.*—*Q. R. P.*—*L. B. O.*—*J. T. Norman*.—*B.*—*Amateur*.—*Perplexed One*.—*D. D. D.*—*M. D.*

PHOTOGRAPHS RECEIVED (with thanks).—*C. A. H. C.*
FRUITS RECEIVED.—*M. C.*—*J. W.*—*J. B.*—*G. A.*—*A. B.*—*Number 7.*—*W. M.*—*G. J.*

SPECIMENS RECEIVED.—*P. & Sons.*—*J. W.*

THE BED BUG, in hot weather, he's about.
To quick y and permanently rid your beds of Bugs, mix small box of "ROUGH ON RATS" thoroughly with a quarter pound of lard, or other grease; with this mixture fill all holes, openings, cracks, and crevices in the bedstead. This method never fails; effective and lasting. Cut this out. "ROUGH ON RATS" is in 7½d. and 1s. boxes at Chemists.

RICHARD MASON, Windlesham Nursery,
Bagshot, Surrey, begs to offer the following:—
RHODODENDRONS, to name, best varieties, flowering plants, 12 to 15 inches and 18 inches to 2 feet.

" **Ponticums**, many thousand, 1½ to 2½ feet, suitable for covert planting.
KALMIA LATIFOLIA, 10 to 12 inches, full of bud.
ANDROMEDA FLORIBUNDA, 12 to 15 inches, full of bud, and extra bushy.

BERBERIS AQUIFOLIUM, 12 to 18 inches.
" **DARWINII**, 18 inches to 2 feet.
SPRUCE FIR, 3 to 7, and 8 feet.
PINUS AUSTRIACA, 2 to 5 feet.
ABIES DOUGLASSII, 5 to 10 feet.
THUOPSIS BOREALIS, 2 to 7, and 8 feet.
ARBOR VITÆ, AMERICAN, 4 to 6 feet.
CUPRESSUS LAWSONIANA, 2 to 6 feet.
THUJA LOBBII, 3 to 8 feet.
WEYMOUTH PINE, 7 to 8 feet.
AZALEA PONTICA, 18 inches to 2 feet.
LAURELS, COLCHICA, 2 to 6 feet.
" **ROTUNDIFOLIA**, 2 to 2½ feet.
" **PORTUGAL**, 2 to 4 feet.
LIGUSTRUM OVALIFOLIUM, 2 to 3 feet.
" **COMMON**, 2 to 3 feet.

QUICK (THORN), 2 to 3, and 3 to 4 feet, extra strong.
GOOSEBERRIES, fruiting trees, to name.
CURRENTS, fruiting trees, to name.
A large assortment of **FLOWERING SHRUBS**.
STANDARD FOREST and ORNAMENTAL TREES.
Also strong **FRUIT TREES**.
GREEN HOLLIES. Common, 1½ to 2½ feet.
Price and sample of any of the above on application.
Inspection invited.
Cash or reference from unknown Correspondents.

LONDON PLANES.—Large Stock, very fine trees, good stems, splendid roots, all sizes from 8 to 18 feet high, and all other leading kinds of Standard Trees suitable for roadside or park planting.
IRISH IVIES in pots, 3 feet to 12 feet.
SHRUBS, TREES, ROSES, FRUIT TREES, CLIMBERS, &c., in endless variety. Specially low prices for quantities.
Descriptive Priced List free, also of **BULBS, SEEDS, PLANTS, TOOLS, and REQUISITES**.
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THE COLORADO BLUE SPRUCE, PICEA PUNGENS GLAUCA.

Handsome specimens, 2, 3, 4, 5, and 6 feet high. These are all of the *Blue* type, and undoubtedly the finest Plants in Commerce. They are all *Seedlings*, the plants usually met with being grafted on the Common Spruce Fir.

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KNAP HILL NURSERY, WOKING, SURREY.

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Fruits, post-free, 3d.
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FERN NURSERIES, SALE, near MANCHESTER.

Trade Offer of Large Palms.

W. ICETON has a large stock of the leading kinds of Decorative PALMS from 6 to 25 feet high, fit for Conservatory and House Decorations; Dracenas, Bamboos, and Foliage Plants. Lowest Prices quoted on application.
W. ICETON, Putney, S.W.

ROSES IN POTS.—Special offer. Several thousand Niphetos and other Roses, established in 12's and 16's, at £5 and £3 per 100.
GUILVER, BROTHERS AND LAWSON, Durant's Nurseries, Ponder's End, Middlesex.

Dutch and Other Bulbs.

DICKSON AND ROBINSON offer, in first-size Bulbs, and of unexcelled quality:—
HYACINTHS, named, for Pots or Glasses, from 4s. per dozen.
HYACINTHS, distinct colours, for Bedding, from 16s. per 100.
HYACINTHS, mixed shades, for Bedding, 14s. per 100.
TULIPS, named, Single and Double, from 4s. per 100.
NARCISSUS, named, best varieties, from 2s. per 100.
CROCUS, Scillas, Snowdrops, Freesias, Iris, &c., &c.
Carriage Paid. Descriptive CATALOGUE on application.
Seed Warehouse, 12, Old Millgate, Manchester.

10,000 dozen WALLFLOWERS, SWEET WILLIAMS, CARNATIONS, PINKS, CANTERBURY BELLS, FORGET-ME-NOTS, COLUMBINE, LAVENDER, and CAMPANULA, all transplanted and well-rooted, 1s. per dozen; choice PANSIES and VIOLAS, true to colour, 1s. 6d. per dozen; 400 dozen Countess of Kintore PANSY, 2s. 6d. per doz. Carriage paid on all orders above 5s. Cash with order.
T. COPPING, Kelsey Manor Gardens, Beckenham, Kent.

STRAWBERRY PLANTS.—Laxton's Noble and Sir Joseph Paxton, 3s. per 100; 25s. per 1000. RASPBERRY CANES.—Baumforth Seedling and Semper Fidelis, 7s. per 100; 50s. per 1000. Norwich Wonder and Fastolf, 4s. 6d. per 100; 35s. per 1000. DUTCH RED CURRANT TREES (strong 3-yr. old), 2s. 6d. per dozen; 10s. per 100. All carriage paid. Post-office Order with order.
R. H. BATH, Osborne Farm, Wisbech.

A grand lot of

ASPENIUM BULBIFERUM for sale, in 32's and 48's, £5 and £2 10s. per 100. A sample box, twelve of each, packed free on rail, for 18s. Apply to J. SEABROOK, Nurseryman, Ponder's End, N., and Covent Garden, W.C.
Cash with Order.

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FLORAL ALBUM! of Conference Daffodils, illustrated by GERTRUDE HARTLAND. Copyright edition. Engraved by WELCH, of London, the price of which is 2s. 6d., but is presented gratis with Bulb orders value 40s.
The Daffodil Bulbs are magnificent.
WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

Special Cheap Offer by the 100 or 1000.

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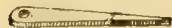
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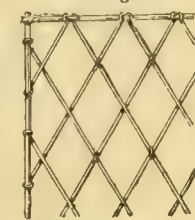
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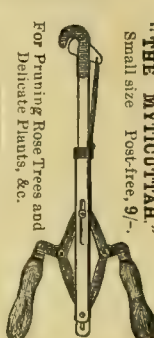
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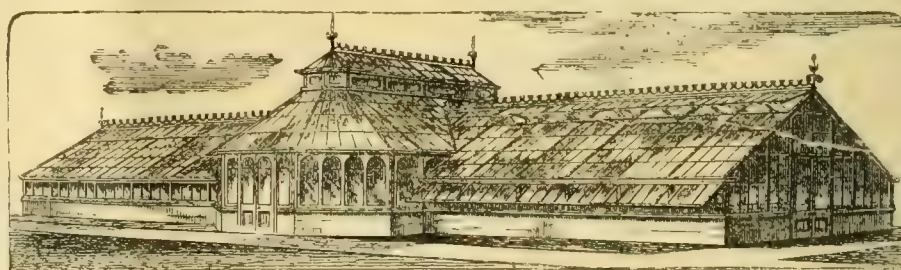
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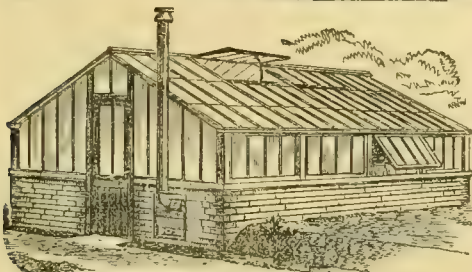
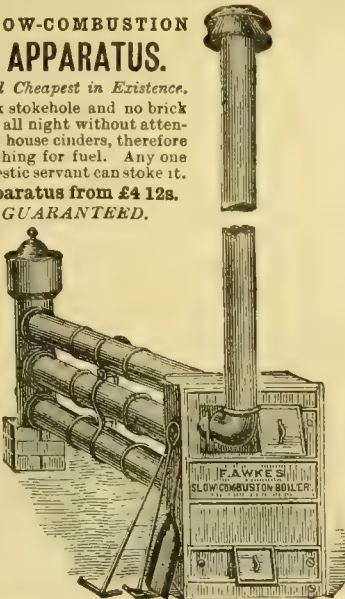
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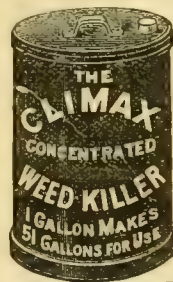
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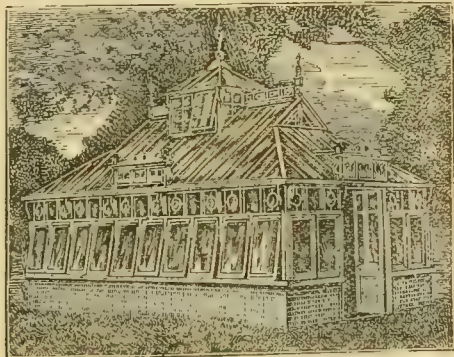
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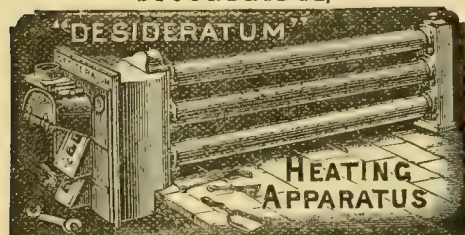
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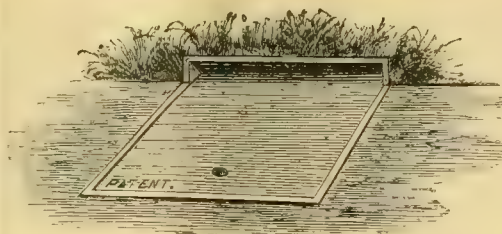
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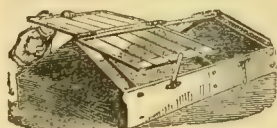
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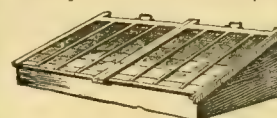


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On view morning of Sale, and Catalogues had.

Tuesday Next, October 25.

500 GRAND PLANTS and SPECIMENS of the OLD CATTLEYA LABIATA in SHEATH, BUD, and FLOWER. FINE, HEALTHY, LEAFY, GRAND PLANTS. THE TRUE OLD CATTLEYA LABIATA, by order of Messrs. SANDER, St. Albans.

MESSRS. PROTHEROE AND MORRIS will include the above in their ORCHID SALE, on **TUESDAY NEXT**, October 25, at half-past 12 o'clock. Also a few lots of green TREE FROGS, and three good plants of CYPRI-PIDIUM MORGANIE.
On view morning of Sale, and Catalogues had.

Wandsworth Common, S.W.

UNRESERVED SALE of well-grown and thriving NURSERY STOCK, growing upon a portion of the Land held under Her Majesty's Government, by order of Mr. Robert Neal, who has received short notice to give up possession.

TO GENTLEMEN, BUILDERS, NURSERYMEN, and OTHERS.
MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Nursery, Trinity Road, Wandsworth Common, S.W., on **TUESDAY** and **WEDNESDAY NEXT**, October 25 & 26, at 12 o'clock each day, thousands of AUCUBAS, HOLLIES, and LAURELS, PRIVET, BOX, and CUPRESSUS, large quantities of Standard Ornamental TREES, including Planes, 10 to 12 feet; Chestnuts, Poplars, Limes, Thorns, Laburnums, &c.; Deciduous Flowering Trees, a fine lot of Standard and Pyramid Fruit Trees, comprising Gooseberries, Currants, Raspberries; a quantity of Fruiting and Planting VINES, all well-ripened Canes; ASPARAGUS, SEAKALE, and RHUBARB.
May be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Thursday Next.

900 ALOCASIA MACRORRHIZA, fine plants.
250 CRINUM PEDUNCULATUM, good bulbs.
500 SPIRÆA JAPONICA.
300 LILIUM LANCIFOLIUM RUBRUM.
AZALIA INDICA and MOLLIS, PALMS and OTHER PLANTS from Belgium; a few NIPHELOS Roses in pots, and several plants of a beautiful Aralia, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above consignments at their Rooms, 67 and 68, Cheapside, London, E.C., on **THURSDAY NEXT**, October 27, at 12 o'clock without reserve.
On view morning of Sale, and Catalogues had.

Hampton, Middlesex.—Absolutely without Reserve.
CLEARANCE SALE of the FINAL PORTION of exceptionally well-grown FRUIT TREES and General NURSERY STOCK, by order of Messrs. Mahood & Son, the Ground having to be Cleared for other purposes.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Tangle Park Nurseries, Buckingham Estate, Hampton, about 1 mile from Hampton Railway Station, on **THURSDAY NEXT**, October 27, at 12 o'clock precisely, without the slightest reserve—
2,000 STANDARD APPLES | 2,000 MAIDEN APPLES
1,000 " PEARS | 10,000 DWARF ROSES
3,000 STANDARD ROSES.

A quantity of dwarf-trained FRUIT TREES, consisting of Apples, Pears, Plums, Peaches, &c.; Standard-trained Peaches, Scarlet and Pink THORNS, Green HOLLIES, LABURNUMS, large quantity of Standard LIMES, young clean stuff with good heads; WEEPING WILLOWS, CONIFEROUS SHRUBS, AUCUBAS, and other STOCK.

May now be viewed. Catalogues may be had on the Premises, also at the Nursery, High Street, Putney; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Knockholt, Kent.

SALE of well-grown and thriving NURSERY STOCK.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. A. Waterman to **SELL BY AUCTION**, on the Premises, the Hickmandias Nursery and Fruit Grounds, Knockholt, Kent, 2½ miles from Halstead Station, S.E.R., on **WEDNESDAY**, November 2, at half-past 12 o'clock, a portion of the well-grown and splendidly-rooted NURSERY STOCK, including 3000 Pines in variety, 650 Spruce Firs, 2 to 9 feet; 1300 Laurels, of sorts; fine lot of specimen Conifers and Evergreen Shrubs, Rhododendrons, Yews; 6500 Standard Ornamental Trees, 6 to 11 feet; 50.0 Ash, Copper Beech, large quantity of Standard and Pyramid Fruit Trees, including Lord Suffield, Wellington, and other Apples, Pears, Plums, and Cherries; 5000 Raspberry Canes, 300 Strong Cob Nuts, 1250 Ivies, 4 to 5 feet; flowering Shrubs, Clematis, Herbaceous Plants, &c.; Light Spring Pony Van, Pony Cart, Artillery Wagon, in first-class condition; Chaff-cutting Machine, Manure Pump, Set of Harness, and other items. Conveyances will meet the morning trains at Halstead Station on day of Sale to convey intending purchasers to the Nursery.
May now be viewed. Catalogues had on the Premises, of the Station Master at Halstead Station, at the Crown and Horse Shoe Hotels, Knockholt, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Tottenham, N.—Annual Sale.

Adjoining the Tottenham Hale Station, Great Eastern Main Line, close to the Bruce Grove Station, on the Great Eastern, and also South Tottenham Station, on the Tottenham and Hampstead Railways.

IMMENSE SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, The Hale Farm Nurseries, Tottenham, N., on **TUESDAY**, November 1, at 11 o'clock precisely, in consequence of the unusually large number of lots, by order of Mr. Thomas S. Ware, an enormous quantity of well-grown

NURSERY STOCK,

comprising 30,000 named CARNATIONS and PICOTÉES, consisting of all the finest varieties including Germania, the best yellow; Mrs. Reynolds Hole, salmon-apricot; Mrs. Frank Watts, the best white; Redbraes, purple-edged Picotée; Sir Beauchamp Seymour, orange-buff; crimson Gloire de Dijon, large white Gloire; Alice Ayres, pure white, striped carmine; Princess Alice, rich bright salmon; Napoleon III., bright scarlet, one of the best; Fireman, rich bright scarlet; and many other first-class varieties in the finest possible condition. Also

5000 NEW CARNATIONS,

offered for the first time, consisting of Florence Emily Thoday, new white; Danger, new scarlet, a grand market variety; Mrs. Kieffel, glowing apricot; Lord Byron, bright scarlet, very large; and Horace, rich scarlet.

25,000 HER MAJESTY PINK,

the finest variety ever raised. Thousands of SOUVENIR DE LA MALMAISON CARNATIONS, both blush and crimson, in the finest possible condition; strong plants in pots.

20,000 HOLLYHOCKS, PYRETHRUMS, &c.

25,000 CLEMATIS,

and other Climbers, fine strong stuff, including Jackmanni, Jackmanni alba, Beauty of Worcester, Countess of Lovelace, Anderson Henri, Gipsy Queen, and other first-class varieties. Also 2500 Ampelopsis Veitchii, 4 to 5 feet; 1000 A. hederacea; 5000 A. hirsuta, 3½ to 5 feet; Hoggi, 2 feet; humifolia, 2 feet; and purpurea, 3 to 4 feet; 500 Escallonia, including montevideensis, 3 to 4 feet; macrantha, 2½ feet; Ingrami, 3 feet; 200 Bignonia, including coccinea, radicans, sanguinea, and Thunbergi, fine strong stuff, 3 feet; 1000 Hedera maderiense variegata, 3 to 4 feet; 3000 in variety, including H. digitata, 4 to 5 feet; H. Donieralense, 3 to 4 feet; H. taurica, 3 to 4 feet; H. Cavendishi variegata, 3 feet; H. latifolia maculata, 5 feet; H. marginata rubra, 3 feet; H. marmorata minor, 3 to 4 feet; and many other varieties. Many thousands of Akebia quinata, Cotoneaster Simmondsi, strong, 2 feet; Plumbago, of sorts; Cydonia japonica and Maulei, fine stuff, 2 feet; Jasminum nudiflorum, 2 to 3 feet; J. n. aureum, 3 feet; Lonicera, in great variety, aurea reticulata, 3 feet; brachypoda, 3 feet; flexuosa, 3 feet. Passiflora, corulea and Constance Elliot, very strong stuff, 3 feet; Tacsonia, of sorts; T. Van Volkemi and exoniensis, 3 to 4 feet; and many other popular varieties.

5000 LILIES, &c.

Choice Home-grown Lilies, named Narcissus, Iris, and many others; among the Lilies will be found extraordinary fine roots of Liliun colchicum, Browni chalcidicum, Humboldtii, the new Bloomerianum magnicum, from Mexico, Martagon album, pardalium, dalmaticum, Washingtonianum, the rare Wallichianum superbum, Wallacei, speciosum in great variety, and numbers of other rare and beautiful varieties; 250,000 BERLIN CROWNS LILY of the VALLEY.

Five forcing Crowns, and all the true German varieties; 1000 New Dwarf ROSES, 1000 BAMBUSA GRACILIS,

100,000 FORCING PLANTS and BULBS,

All first-class forcing-stuff, including 5000 Spiraea multiflora compacta, S. palmata, palmata alba, japonica, Lily of the Valley, Clumps and Crowns; Dielytra spectabilis, Narcissus in great variety, Lilies in variety, Christmas Roses in variety, fine Clumps for Forcing, and numbers of other plants and bulbs adapted for forcing purposes;

100,000 SEAKALE and ASPARAGUS,

Exceedingly fine forcing crowns;

ROSES, ORNAMENTAL TREES, and SHRUBS; A grand lot of Marchal Niel in pots, 10 to 12 feet; Gloire de Dijon, 6 to 8 feet; White and Yellow Banksian; Common China, Pompon de Paris, W. A. Richardson, fine stuff, in 4's and 3's, 3 to 6 feet; Bouquet d'Or, and many others; Maiden's Blush, Lanei, York and Lancashire; Standard and Dwarf Roses in variety, including all the popular varieties; 2000 Veronica Traversi, buxifolia, carnosula; Cistus, of sorts; 500 Olearias in variety, Lombardy Poplars, fine stuff, 10 to 16 feet, well furnished; Hydrangea paniculata grandiflora, good stuff; American Blackberries, hundreds of Black Italian Poplars, and many other useful stock; PERENNIALS, including thousands of Eulalia and other Ornamental Grasses, Everlasting Peas, Anemone japonica, several varieties; Hemerocallis, Sunflowers, Gaillardias, Poppies, Centaureas, Doronicus, Lychnis viscaria splendens plena, Campanulas, Rudbeckias, Yuccas, a grand Collection of IRIS, fine strong clumps, including the best forcing varieties; Pumila of sorts, Olbiensis of sorts, Siberica of sorts, Florentina, the sweet-scented variety; Germanica, in great variety; Kamperi, and many others; Delphiniums, thousands of Hollyhocks, and hundreds of other important plants, too numerous to mention.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

The Alexandra Palace, Muswell Hill.

PRELIMINARY NOTICE.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have been favoured with instructions to **SELL BY AUCTION**, on the Premises as above, at an early date, the whole of the valuable SPECIMEN PLANTS in the Conservatory and Italian Garden. The plants are probably too well known to need description, but the principal Specimens will be mentioned in next week's advertisement.

East Dulwich.—Wednesday Next.

IMPORTANT SALE of ESTABLISHED and IMPORTED ORCHIDS, by order of Messrs. Seeger & Tropp, Limited, in consequence of the Dissolution of Partnership.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Orchid Nurseries, East Dulwich, a short distance from the East Dulwich Station, on **WEDNESDAY NEXT**, October 26, at half-past 12 o'clock, a large collection of valuable and well-grown ESTABLISHED ORCHIDS. Amongst the principal plants the following may be mentioned:—

Cypripedium Lemoinei	Oncidium excavatum grandiflorum
Sobralia macrantha, Woolley's var.	Lælia anceps Sanderiana
Dendrobium nobile nobiliss	Cypripedium Cassiope
Lælia purpurata alba	" Savageanum
Brassavola (Lælia) Digbyana	" Siamense
Grammatophyllum Seegerianum	Calanthe Stevensi
Luddemannia Pescatorei	Vanda tricolor Rohaniana, an extraordinary grand specimen, with fourteen growths, some of them are over 5 feet high
Cattleya intermedia alba	Cœlogyne Thuneeana
Lælia elegans Schilleriana	Dendrobium Rhodostoma, fine hybrid
Cœlia macrostachya grandiflora	Zygopetalum Clayi, hybrid
Cattleya Reineckiana, Rucker's var.	Dendrobium nobile Sanderianum
Masdevallia Harryana miniata	Odontoglossum Benedicti, nat. hyb.
Sobralia Ruckeri	" cordatum aureum
Cattleya guttata phœnicoptera	" nebulosum album
" Mossie Hardyana	And many other Rare and Beautiful ORCHIDS.
" Schofieldiana	
Lælia anceps Schroderæ	
Anguloa Ruckeri sanguinea	

Also an importation of SACCOLABIUM ILLUSTRE, a grand and noble species; ODONTOGLOSSUM ALEXANDRE and O. LUTEOPURPUREUM, DENDROBIUM FORMOSUM GIGANTEUM, &c.

May be viewed. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at their Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT**, October 28, at half-past 12 o'clock precisely, by order of Mr. J. Sander—

ONE HUNDRED CATTLEYAS FROM SANTAYUNI,

From where the truly magnificent CATTLEYA OWENIANA, C. WARSCEWICZI ROTHCHILDIANA (the wonderful purple variety), and the grand form lately flowered by Mr. Le Doux were obtained. They have already obtained a recognised place in the front rank of gorgeous Cattleyas. The plants now offered are perfectly safe, sound, and healthy, and we expect to be able soon to congratulate buyers on the possession of some of the loveliest gems the Orchid world has ever produced.

LÆLIA PURPURATA and VARIETIES.

A GRAND IMPORTATION, JUST ARRIVED.

The plants are full of sound leaves and eyes, and could not possibly be in finer order.

We draw special attention to this splendid lot of Lælia purpurata, collected in the very district that produced Lælia Gotoiana, for which our man was particularly dispatched; they were found growing intermixed with these purpuratas, and our collector states that he was unable to separate them, as most had flowered, and only old and dilapidated blooms were left on many to guide him. We offer them as received, and our supporters have the benefit of securing the fine things that are plentiful among them.

A DISTINCT-LOOKING AND SCARCE

CYPRI-PIDIUM, PROVISIONALLY NAMED ANNAMENSE,

Flowers white and citron, with purple spots, and of a perfect form.

ONCIDIUM AMPLIATUM MAJUS,

The true majus variety, in splendid, well-leaved plants.

MILTONIA FLAVESCENS (syn. M. Claesiana).

CATTLEYA ACANDIÆ,

The finest variety of this hitherto scarce Orchid ever seen.

CATTLEYA VICTORIA REGINA.

THE MOST SUPERB CATTLEYA of MODERN INTRODUCTION. FINER THAN THE FINEST LÆLIA ELEGANS EVER SEEN.

Splendid Importation, just received in simply grand order.

CATTLEYA ALEXANDRÆ.

The great umbel-flowered Cattleya. A splendid lot.

ZYGOPETALUM SPECIES.

A distinct Crimson, Blue, and Green flower.

STANHOPEA NIVEA.

The largest and finest of all the white Stanhopeas.

ONCIDIUM SANDERIANUM (provisionally named).

In the way of O. Rogersii, producing enormous sprays of Gold and White flowers.

ONCIDIUM UROPHYLLUM.

And many other choice and rare ORCHIDS.

On view morning of Sale, and Catalogues had.

Feltham.—Preliminary Notice.

By order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION** on the Premises, the Nurseries, Feltham, on **FRIDAY**, November 11, CONIFERS of the best kinds, Green and other Hollies, Laurels, Privet, &c. Full particulars will appear in future announcements.

BEAUTY OF BATH

(THE COMING APPLE).

THIS is the finest, New, First Early Dessert Apple introduced for many years. It has gained honours at every Exhibition where shown; First-class Certificate Royal Horticultural Society; and First Prize for the Best Dessert Apple in competition with thirty-five dishes staged, and was included in the First Prize Dish of Dessert Apples at the recent International Fruit Exhibition, Earl's Court, open to all England, August 16 and 27, 1892. Mr. HORNE, of Perry Hill, Cliffe, near Rochester, holds the largest stock of this magnificent Early Dessert Apple in England.

On WEDNESDAY NEXT, October 26,
Messrs. PROTHEROE & MORRIS

Will hold the Fourth Great Annual Sale

on the Premises, as above, adjoining Cliffe Station, South Eastern Railway, of **100,000 FRUIT TREES**, consisting of 35,000 Apples, Pears, Plums, and Cherries of all the leading Market sorts; 8,000 Apples of different kinds on English Paradise; 1,500 Standard, Half-Standard, and Maidens, Bismark, Lady Sudeley, and Jubilee; 5,000 Beauty of Bath are included; 50,000 Baldwin Black Currant; 4000 New Reds; 12,000 Bob and Lad Gooseberries; 5,000 celebrated John Ruskin Strawberry, and others in large and small pots, for forcing; 20,000 Ruskin, from open ground; 20,000 Paxtons; 20,000 Nobles; 20,000 French Connover's Colossal Asparagus, 3-yr. old; 50,000 Rainham Cabbage Plants, &c.

Catalogues may be had on the Premises; or, of the Auctioneers, 67, Cheapside, London, E.C., who will be pleased to execute commissions for Gentlemen who cannot attend, and desire to call special attention to this important Annual Sale. It is seldom an opportunity is offered of securing Fruit Trees and Bushes in such large quantities. Fruit Growers and others interested in Planting this season are invited to inspect the extensive Stock, and to attend the Sale.

For the convenience of buyers at a distance, Mr. Horne will lift and put on rail all lots, after the Sale, free of cost.



Groombridge, near Tunbridge Wells.

HOLLAMBY'S NURSERIES.

GREAT UNRESERVED SALE of valuable NURSERY STOCK, all recently transplanted, and carefully prepared for removal.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, as above, close to the Groombridge Station, on THURSDAY and FRIDAY NEXT, October 27 and 28, at 12 o'clock precisely each day, by order of Mr. Edwin Hollamby, enormous quantities of CONIFER, E. Standard, Dwarf, and other ROSES, 100,000 Larch and Scotch Fir, Ash and Spanish Chestnut, 100,000 strong transplanted Quick, 3000 named and other Rhododendrons, Azaleas, Andromeda floribunda, Seakale (extra strong for forcing), 10,000 Pinus austriaca, &c.

May be viewed any day prior to the Sale. Catalogues may be had at the Nurseries, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Richmond.—Short Notice. Without Reserve.

By order of the Executors of the late Mr. W. T. Steel. Substantial HOUSEHOLD FURNITURE, including Bedstead and Redding, Dining Room Suite, Loo and other Tables, Book-case, Chimney Glasses, Plated Articles, Cutlery, Books, Silver, and numerous other items. Also a useful Grey Horse, Single Brougham by Wingburn, Harness, Stable Utensils, and effects.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, The Nursery, Kew Road, Richmond, Surrey, on TUESDAY NEXT, October 25, at 1 o'clock precisely. Without Reserve.

On view the day prior and morning of Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The SALE of the LEASEHOLD COTTAGES and PREFERENCE STOCK in the Richmond and Crystal Palace Gas Companies will take place at the London Auction Mart in November.

Bagshot.

THREE DAYS' UNRESERVED SALE of beautifully-grown and well-rooted NURSERY STOCK, in splendid condition for removal, by order of Messrs. John Waterer & Sons, Limited.

IMPORTANT to NOBLEMEN, GENTLEMEN, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the well-known Bagshot Nurseries, Bagshot, Surrey, on TUESDAY, November 8, and TWO FOLLOWING DAYS, at 12 o'clock each day, several acres of NURSERY STOCK, grown to the greatest perfection, and exceedingly well-rooted, comprising a great variety of CONIFERS, splendid specimens for effective planting, 4 to 8 feet; hundreds of well-coloured Golden Retinosporas; very fine specimen Gold and Silver Variegated Hollies, 4 to 6 feet, standard and pyramids; 1000 Green Hollies, 3 to 5 feet; Aucubas, Laurels, English Yews; 2000 named Rhododendrons, 2 to 2½ feet, bushy plants, of the newest kinds; Ponticum Rhododendron in quantity; 1000 Spruce Fir, 2½ to 4 feet, and a quantity of larger plants 4 to 8 feet, specially adapted for Christmas Trees; 2000 Standard Ornamental Trees, 8 to 12 feet; Purple Beech, Limes, Chestnuts, Poplars, &c.; thousands of Flowering Shrubs, in large quantities; small Conifers for potting and boxes, consisting of Cupressus, Retinosporas, &c.

Bagshot Station is on the Nursery, whence goods may be transmitted to all parts.

Purchasers will be allowed until December 31 for removing their lots, and Messrs. Waterer & Sons will undertake to lift and forward any goods bought at the Sale, simply charging for the time and labour occupied.

Stock may be viewed any time prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY, at 12 o'clock, large consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland. Lotted to suit the Trade and Private Buyers. 12 tons are sold every week.

On view morning of Sale, and Catalogues had,

Expiration of Lease.

SECOND CLEARANCE SALE of CHOICE ORCHIDS.

(Unreserved Sale.)

By order of Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, Yorkshire, and Clapham, S.W., consisting of ODONTOGLOSSUM CRISPUM (ALEXANDRE), and other choice varieties; ONCIDIUMS, CATTLEYAS, MASDEVALLIAS, CYPRIPEDIUMS, &c.

TO BE SOLD BY AUCTION BY

MESSRS. PROTHEROE AND MORRIS, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, November 1, at half past 12 o'clock precisely.

Isleworth.

IMPORTANT SALE of Valuable NURSERY STOCK, in splendid condition for removal, by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will

SELL by AUCTION, on the Premises, the Arboretum and Wood Lane Nurseries, Isleworth, near the Isleworth Station, on THURSDAY and FRIDAY, November 3 and 4, at 12 o'clock precisely each day, a portion of the exceptionally well-grown and particularly healthy NURSERY STOCK, for the growth of which these Nurseries are so well known. The Sale comprises a splendid lot of CONIFERS and EVERGREENS in the Borders for immediate effective planting, Standard Ornamental Trees, a large quantity of well-grown Euonymus and small Conifers, adapted for the Trade for growing on; 4000 Silver, Golden, and other Euonymus and Cupressus lutea; 1000 Cupressus erecta viridis, 350 Araucaria imbricata, 1500 English Yews, Phillyrea laurifolia Jackmanni, superb; 1000 Clematis of the best sorts, Hardwick Box, Solanums in berry, Palms, Kentias, 4 to 5 feet; Thrinax elegantissima, Cocos Weddelliana, 10 o Maiden Victoria Plums, 200 Fruiting and Planting Vines, Araucaria excelsa, White Jasmine in pots, and other Climbers.

May be viewed, and Catalogues had on the Premises, at the Royal Vineyard Nurseries, 2, Hammersmith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Stafford.

CLEARANCE SALE of the whole of the NURSERY STOCK growing at the Branch Nursery, by order of Messrs. Sandy & Son, who have disposed of the Home Nursery and Business. IMPORTANT to GENTLEMEN, NURSERYMEN, and OTHERS engaged in PLANTING.

MESSRS. PROTHEROE AND MORRIS will

SELL by AUCTION, on the Premises, the Farm Nursery, Stafford, on TUESDAY, November 8, at 12 o'clock precisely, without the least reserve, the well-grown NURSERY STOCK, comprising 10,000 Oaks, 16,000 Scotch Firs, 12,000 Spruce Firs, 18,500 Beech, 3500 Horse Chestnuts, 8000 Larch, 900 Limes, 16,500 Pinus austriaca, 3000 Pinus laricio, 300 P. cembra, 5500 Sycamore, 3000 Birch, 4500 Hollies, 150 Weeping Elms, 350 Copper Beech, 400 Double Pink and White Thorns, 350 Aucubas, 900 English Yews, 300 Azalea pontica, 200 Cupressus Lawsoni, 1500 Pears, 5500 Apples, 25,000 transplanted Quick Rose Stocks, and various other items.

May be viewed any day prior to the Sale. Catalogues may be had of Messrs. Sandy & Son, Nurserymen, Stafford; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Barnham Nurseries, near Bognor.

TWO DAYS SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will

SELL by AUCTION, on the Premises, as above, by order of Mr. S. S. Marshall, on TUESDAY and WEDNESDAY, November 15 and 16, at 12 o'clock each day, a portion of the GENERAL NURSERY STOCK, comprising 6000 Conifers, Evergreens, and Deciduous Shrubs, 12,000 splendidly-grown Fruit Trees of the best varieties, including Maiden, two-year, Standard and Fruiting Pyramid Apples, Pears, Plums, Cherries, and several hundreds of extra size trained Pears, Apples, and Plums; 25,000 Crab Stocks; 1000 Specimen Border Shrubs, 2 to 8 feet; 1000 Lilacs, 3 to 7 feet; 1500 Box, 1 to 2 feet; 2000 Standard and Dwarf Roses, of the best varieties; 10,000 Manetti Stocks; Ornamental Trees for Avenue planting, consisting of Sycamore, Horse Chestnuts, Limes, &c., and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Thursday Next.

The Valuable Collection of ESTABLISHED ORCHIDS, and the beautifully-grown Collection of STOVE PLANTS, formed by the late T. Harcourt Powell, Esq., of Drinkstone Park, Bury St. Edmunds.

MR. J. C. STEVENS has been favoured with instructions to SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 27, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next, October 27.

The Valuable COLLECTION of ESTABLISHED ORCHIDS and STOVE and GREENHOUSE PLANTS, formed by the late T. Harcourt Powell, Esq.

MR. J. C. STEVENS has been favoured with instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, OCTOBER 27, at half-past 12 o'clock precisely, the valuable and well-grown collection of ESTABLISHED ORCHIDS formed by the late T. Harcourt Powell, Esq., of Drinkstone Park, Bury St. Edmunds, comprising amongst other fine things—A Grand Plant of SOBRALIA XANTHOLEUCA, probably the finest in the Kingdom.

Fine specimens of rare CYPRIPEDIUMS, beautifully grown, a variety of choice DENDROBIUMS, CATTLEYAS, AERIDES, ODONTOGLOSSUMS, CALANTHES, LELIAS, VANDAS, MASDEVALLIAS, MILTONIAS, &c. Also the magnificent and beautifully-grown Collection of Stove Plants, comprising Specimen and Half-Specimens of DRACENAS, CROTONS, FERNS, PANCATIUMS, fine plants of ANTHURIUM SCHERZERIANUM, EUCHARIS, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.

A FINE IMPORTATION of 1000 PLANTS of CYPRIPEDIUM BARBATUM, just received direct.

MR. J. C. STEVENS will include the above in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 27.

On view morning of Sale, and Catalogues had.

Choice Bulbs from Holland.

MR. J. C. STEVENS will SELL by AUCTION, every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice BULBS arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Hare Hill and Brox Nurseries, Addlestone.

(1½ miles from Addlestone Station on the London and South Western Railway).

IMPORTANT FIVE DAYS' SALE of exceedingly Well-grown and Healthy NURSERY STOCK, the Land being Sold.

MESSRS. WATERER AND SONS are In-

structed by Mr. Alfred Gray to SELL by AUCTION on the Premises, as above, on MONDAY, October 24, and FOUR FOLLOWING DAYS, at 11 for 12 o'clock each day, the whole of the excellent NURSERY STOCK, including thousands of Evergreens, Trees and Shrubs, viz., Cedrus deodara, Retinospora plumosa, Picea Nordmanniana and nobilis, Araucaria, Yew, Hemlock Spruce, Spruce and Silver Firs, 5000 Standard, Dwarf, and Climbing Roses, quantity of deciduous flowering Trees and Shrubs, 10,000 Weymouth Pines, 10,000 Thuia Lobbi, and Cupressus, 2 to 8 feet; 11,000 Fruit Trees, Standard and Dwarf-trained Apples, Pears, Plums, Cherries, Apricots, Peaches, and Nectarines; 15,000 Abies Douglasii and Pinus austriaca, 5000 Caucasian, Common, Portugal, and Rotundifolia Laurels, 2 to 8 feet; 15,000 Standard Limes, 10,000 Rhododendron ponticum, 1 to 2 feet; 1000 hybrid Rhododendrons, 1000 Aucubas, 2 to 4 feet; and thousands of Forest Trees, Horse Chestnuts, Poplars, Sycamores, Birch, Mountain Ash, Maple, and many others.

May be viewed seven days prior to the Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at either of their Offices at Chertsey, Weybridge Station, and opposite the Station entrance, Walton-on-Thames.

WANTED, to RENT, a small NURSERY and FLORIST'S, with little or no Stock.
THE GARDENER, 117, Tulse Hill, Brixton, S.W.

To Nurserymen and Florists commencing Business.
HAMPTON-ON-THAMES, on the Marling
Park Estate, free from London fogs, a deep rich loam, the favourite neighbourhood for Growers. **FREEHOLD LAND** for SALE, on easy system of Purchase, or to be LET on Lease. For full particulars apply to Mr. FRED. G. HUGHES, Surveyor, The Estate Office as above.

Crown Lands, Hampton Court, Middlesex.
TO BE LET, with immediate possession,
about 11 acres of productive KITCHEN and ORCHARD GARDENS, adjacent to Hampton Court Palace, and close to Hampton Court Station on the South-Western Railway, with the Vineries, Peach Houses, Forcing Pits, Tomato Houses, and the Cottage, Shop, Store-room for Fruit, and other Buildings thereon.

The Gardens are walled in, and subdivided with internal walls, and the walls and grounds are well stocked with Fruit Trees, and Currant and other Bushes.
Apply to Messrs. CLUTTON, 9, Whitehall Place, London, S.W.

TO BE SOLD or LET, within a short distance of the Liverpool and St. Helens Markets, a well-arranged MARKET GARDEN, with 18,000 sq. feet of Glass, in twelve Greenhouses, well-heated with Hot-water throughout, and in excellent condition. Stock may be taken at a Valuation.
Also Two Convenient DWELLING-HOUSES, together with good Shipped for twelve Cows, and three-stall Stable, which can be let Separately.

Apply, Mrs. BESLEY, 31, Kemble Street, Prescott.

Warwickshire.—Erdington Hall Estate.

TO BE LET, an excellent FARM, situate
within 3 miles of Stephenson Place, Birmingham. There is a large House and extensive Buildings, and the Land is well adapted for Market Gardening, being close to the City. It consists of Arable and Pasture Land, and is about 173 Acres.
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TO BE LET, DETACHED RESIDENCE,
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£850—FREEHOLD NURSERY, S.E.—
Good neighbourhood, well situated; Dwelling-House, Seven large Rooms; Five Greenhouses, fitted with Heating Apparatus; well stocked.—BROWN, Ramsey Villa, Weymouth Street, Watford.

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SALE OF THE LEASE and the whole of the GLASS
ERECTIONS, STOCK, and UTENSILS in TRADE, in one lot, as a going concern.

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The premises comprise one large block of land, with fifteen Greenhouses; also another block of land, with one large Greenhouse, 600 feet in length.

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Grand Monarque Polyanthus Narciss, 40s. per 1000, 5s. per 100; Grand Soliel d'Or, 30s. per 1000, 4s. per 100; Scilly Whites, 50s. per 1000, 5s. 6d. per 100; Double Incomparable Narciss, 15s. per 1000, 2s. per 100; Poeticus, 10s. per 1000; Biflorus, extra large, 10s. 6d. per 1000, 1s. 6d. per 100; Ornatus, true, 3s. 6d. per 1000, 4s. per 100; Gladiolus "The Bride," true, 3s. 6d. per 1000. All fine Bulbs, true to name, and offered for Cash with Order.
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SCARLET QUEEN (Laxton), strong, in large
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ERICAS, AZALEAS, PALMS,
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BRIGHTON and HOVE CHRYSANTHEMUM SHOW, TUESDAY and WEDNESDAY, November 1 and 2. Entries close October 25. Schedules may be obtained of MARK LONGHURST, Secretary, 18, Church Road, Hove, Sussex.

KENT COUNTY CHRYSANTHEMUM SOCIETY.
The FIFTH GREAT ANNUAL SHOW of CHRYSANTHEMUMS and FRUIT will be held on TUESDAY and WEDNESDAY, November 1 and 2, at The Rink, Blackheath.
OVER ONE HUNDRED POUNDS IN PRIZES.
OPEN CLASS—36 Blooms—Four Prizes, £10, £7, £4, £1.
Schedule on application to H. J. JONES, Hon. Sec., Ryecroft Nursery, Hither Green, Lewisham.

ASCOT, SUNNINGHILL, SUNNINGDALE, and DISTRICT HORTICULTURAL SOCIETY.
GRAND STAND, ASCOT, November 2 and 3.
£7 15s. 0d. for 24 incurved, 18 varieties.
£7 15s. 0d. for 24 Japanese, 18 varieties.
Schedules from— F. PATTON, Ascot.

HERTFORD HORTICULTURAL MUTUAL
IMPROVEMENT SOCIETY'S FIRST GREAT SHOW of CHRYSANTHEMUMS, AUTUMNAL FLOWERS, FRUIT, and VEGETABLES, will be held at the CORN EXCHANGE, HERTFORD, on THURSDAY and FRIDAY, November 3 and 4. Schedules may be obtained from JASON FEARS, Hon. Sec., Hailsham Villa, Tamworth Street, Hertford. (Entries close October 29.)

CRYSTAL PALACE.
GRAND EXHIBITION of CHRYSANTHEMUMS, FRIDAY and SATURDAY, November 4 and 5, 1892.
Schedule, post free, on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close October 28.

DEVIZES CHRYSANTHEMUM SHOW,
NOVEMBER 8.
Twenty-four Blooms of INCURVED CHRYSANTHEMUMS: 1st Prize, £10; 2nd, Silver Cup, value £5 5s.; 3d, £3.
Twelve JAPANESE: 1st, Silver Cup, value £5 5s.; 2nd, £2; 3rd, £1 5s., and various other Prizes.
For Schedules apply to— THOS. KING, The Castle Gardens.

KINGSTON and SURBITON
CHRYSANTHEMUM SOCIETY.
President—G. C. SHERRARD, Esq., J.P.

The SIXTEENTH ANNUAL GRAND SHOW of CHRYSANTHEMUMS, FRUITS, PLANTS, &c., will be held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, November 8 and 9, 1892.

Over £130 offered in Prizes, in addition to the Sixth Grand Champion Challenge Vase, value 25 Guineas; also Silver Cup, value 5 Guineas.

Schedules, and other information, from the Hon. Sec., Mr. GEO. WOODGATE, Warren House Gardens, Kingston Hill, Surrey.

SOUTH SHIELDS and NORTHERN
COUNTIES CHRYSANTHEMUM SOCIETY.
Show will be held, NOVEMBER 9 and 10, in Royal Assembly Hall, South Shields. £120 in Prize Money. £15 for 36 Japanese Blooms. £11 for 24 Incurved Blooms.
N.B.—Affiliated with National Chrysanthemum Society of England.
Horton, South Shields. BERNARD COWAN, Hon. Sec.,

THE BATH CHRYSANTHEMUM SHOW,
NOVEMBER 9 and 10, 1892. Entries close November 4. For Prize Schedules, apply— B. R. F. PEARSON, Secs., 2, Northumberland Bldgs., Bath. W. JEFFERY,

CALNE HORTICULTURAL SOCIETY.

The TWENTY-EIGHTH ANNUAL EXHIBITION and CHRYSANTHEMUM SHOW will be held in the TOWN HALL, CALNE, on THURSDAY, November 10, when the following Prizes, amongst others, will be offered in the Open Class:— GROUP of CHRYSANTHEMUMS, in Pots (space not to exceed 10 feet by 5 feet), £3, £2, £1.

CUT FLOWERS, 24 blooms, Japan ... £3, £2, £1.
24 blooms, Incurved £3, £2, £1.
Schedule of Prizes to be obtained of—

FRED. C. HENLY, Hon. Sec.

LEICESTER and MIDLAND
CHRYSANTHEMUM SOCIETY.

The SIXTH ANNUAL EXHIBITION will be held in the LARGE FLORAL HALL, LEICESTER, on FRIDAY and SATURDAY, November 11 and 12, 1892, when upwards of £75 will be offered.

A Luncheon will take place on Friday, at 3 p.m., when His Worship the Mayor of Leicester has promised to take the Chair.
For space and particulars, apply to—

Knighston Road, Leicester. W. BELL, Hon. Sec.

ROYAL BOTANICAL SOCIETY of MAN-
CHESTER.

The ANNUAL CHRYSANTHEMUM SHOW will be held in the Town Hall, Manchester, on November 15 and 16.

SILVER CUPS of the value of £10 & £5 given for 36 Blooms. For Schedules apply to the undersigned.

Botanic Gardens, Manchester. BRUCE FINDLAY,

WAVERLEY MARKET, EDINBURGH.—
GRAND CHRYSANTHEMUM EXHIBITION,

November 17, 18, and 19. The Celebrated Band of the Coldstream Guards, under the personal Direction of Mr. C. Thomas, each afternoon and evening.—Schedules and all particulars of ROBERT LAIRD, Sec., 11, South Frederick Street, Edinburgh.

THE FINEST and MOST INTERESTING
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In the Country will be on View from NOVEMBER 2, at J. R. PEARSON AND SONS' CHILWELL NURSERIES, Beeston Station (M. R.) is 10 minutes' walk from the Nurseries.

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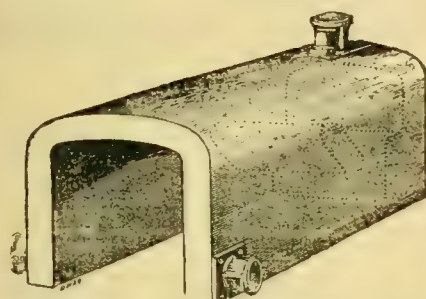
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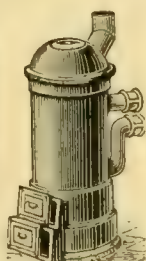
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To heat from 300 to 5000 feet of 4-inch piping.



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VALVES, PIPES,
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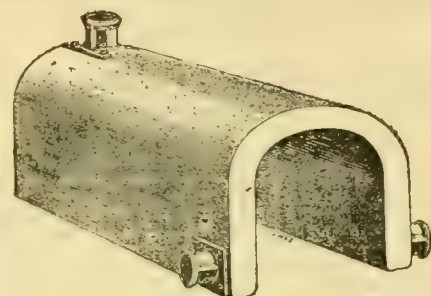
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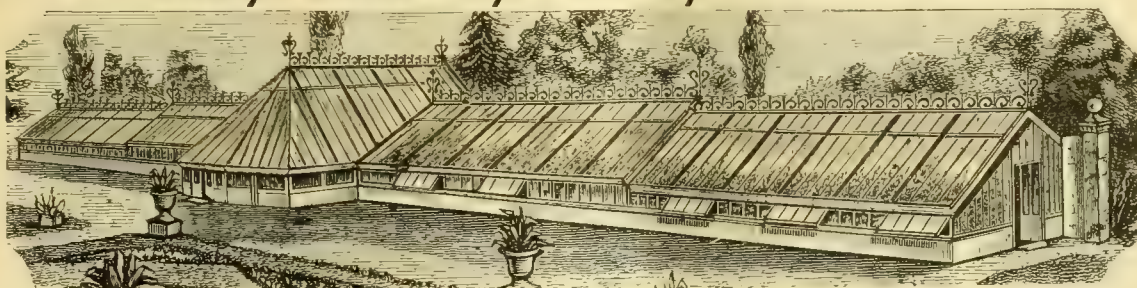
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N.B.—Single Plants are sold at slightly increased prices.

SEEDS & BULBS { VEGETABLE, FLOWER, and FARM.
DESCRIPTIVE LISTS, FREE.

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Offer the following well-grown Transplanted Trees—

Ash, Common	... 8 to 10 feet	... 8s. per dozen.
Birch	... 10 to 12 feet	... 15s. "
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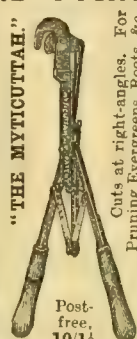
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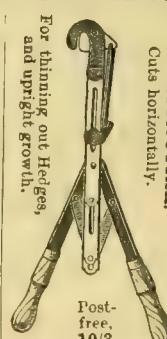
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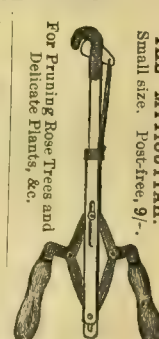
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A grand importation just arrived. The plants are full of sound leaves and eyes, and could not possibly be in finer order.

We draw SPECIAL ATTENTION to this splendid lot of Lælia purpurata collected in the very district that produced Lælia Gottoiana, for which our man was particularly despatched. They were found growing intermixed with these purpuratas, and our collector states that he was unable to separate them as most had flowered, and only old and dilapidated blooms were left on many to guide him. We offer them as received, and our supporters have the benefit of securing the fine things that are plentiful among them.

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Flowers White and Citron, with Purple Spots, and of a perfect form.

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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 22, 1892.

BLITHFIELD.

BLITHFIELD, so called from the river Blythe, is the ancestral home of the Bagots, one of the oldest Staffordshire families, and has sheltered the head of the family for 400 years. The baronetcy dates from 1627, and the peerage (Lord Bagot of Blithfield) from 1780. There has never been any danger of the family dying out, for one "Ludokin Bagot," on the authority of a tablet in the pretty church near the hall, had nineteen children, who all survived him. The late lord must have been a very careful or else a very eccentric peer. In the coach-house at the expensively fitted-up stables, is an old-fashioned narrow carriage, which only holds two people, one facing the other; instead of wheels, it is mounted on rollers, one in front, and two behind. The reason for the construction of this queer vehicle, was to convey two old ladies, relatives of this lord, from the rectory to the hall for dinner, and to take them back. The rollers were intended to obliterate all the pony tracks.

The park is very extensive, and contains some very old trees. The oldest are to be found in the Deer Park—Bagot's Park it is called. Here is the far-famed Beggar's Oak, figured in the *Sylva Britannica*. As it is still vigorous and wide-spreading, it is likely to last another century at least. Above-ground roots extend from it in all directions, and these form a circuit of 83 yards. The girth taken above where the roots join the trunk, which is a few inches from 4 feet, is 23 feet. Another Oak in perfect health, and likely to last two centuries, was 24 feet 8 inches. I always have an eye for big Oaks, and I never saw so many, more than 20 feet in girth, than in this Bagot's Park. But it must be confessed that many of them are quite hollow, and fast falling into decay. The Mocoas Oak on the banks of the Wye is said to be 36 feet in girth, but I doubt if it is sound all through, as the Beggar's Oak seems to be. In addition to the old trees, the pretty stream of the Blythe, which in one place widens out into a big pool, and the many copses and bits of woodland diversify the surface of the park in an attractive manner.

The pleasure-grounds on two sides, the west and south, of the house, are very interesting from their quaint, old-fashioned air, or, rather, appearance. Approaching it, as I did, from the kitchen garden, the first thing that compels attention is a straight walk leading past two magnificent Cedars of Lebanon, towering up to a great height, and spreading wide their branches. As the bottom branches are out off,

one easily sees the immense proportions of the trunk and main branches. Next to these giants is a *Cedrus atlantica*, which has emulated the manner of growth of the Libani, and but for its glaucous colour could hardly be distinguished. This tree bids fair to eclipse its rivals. It was one of the first ever introduced, and was sent to a former Lord Bagot by a Liverpool firm. Passing on, we come to a small orchard, which in spring must be lovely, and then to a lawn with long beds of herbaceous flowers, which looked very bright and gay. The old Strawberry garden, as it used to be called, is now planted with herbaceous flowers, and a series of iron arches going in the direction of the house are festooned thickly with Vines, Clematis, Jasmines, Roses, and other plants, that can be made to climb. Opposite this is a rectangular tank, with water-plants growing into it, and some Fern-girt rockwork. This part of the grounds cannot have been much changed from old times; it is to be hoped no one will attempt to improve it. Passing round the house, we come to the flower garden in a quadrangle, enclosed on three sides by the building, and open to the pleasure-grounds on the other. The bedding was very well done, and on close examination did not seem much affected by the inclement season; this is probably owing to the sheltered position. The pleasure grounds here consist of walks among lawns and shrubberies, and extend for 14 acres. Besides the Cedars mentioned, there are two fine Beeches; one a tall wide-spreading example of the Fern-leaved Beech, and another a curious departure from the ordinary variety, which has assumed a weeping form, some of the branches drooping from 15 to 20 feet. *Ampelopsis Veitchii* was growing most rampantly on the wall, clutching nearly all one side with its tenacious claws.

The kitchen garden was in a high state of cultivation. As the subsoil is a cold damp clay, and the climate here is, for the greater part of the year, adverse to vegetable growth, this fact is the more creditable to Mr. Bannerman. Brussels Sprouts, Celery, Broccoli, and Strawberries were making luxuriant growth, Plums were a good crop, and unlike other gardens there was a fair sprinkling of Pears. Fruit growing is likewise a success here. Barrington Peach comes to an enormous size on one tree, and Mr. Bannerman took the 1st prize at Moseley with fruit gathered from it. *Vagabond*.

NEW OR NOTEWORTHY PLANTS.

ALBUCA (LEPTOSTYLA) BUCHANANI, *Baker, n. sp.**

THE section *Leptostyla* forms a connecting-link between *Ornithogalum* and *Albuca*, with the subulate style of the former and cucullate inner perianth segments and stamens of the latter. The present plant was discovered by Mr. John Buchanan, C.M.G., Acting Consul at Nyassa, who has made large botanical collections in the Shiri highlands, and has just forwarded to the Kew Herbarium a new set of nearly 1500 numbers. He presented bulbs of the present plant to the Royal Gardens, and it has now flowered for the first time. It is nearly allied to *A. Wakefieldii*, Baker, in *Botanical Magazine*, t. 6429, and *A. Allenæ*, Baker.

* *Albuca (Leptostyla) Buchananii*, Baker, n. sp.—Bulbo parvo ovoideo; foliis circiter 4 linearibus viridibus facie canaliculatis margine obscure ciliatis; scapo gracili elongato; racemo laxo multifloro; pedicellis brevibus ascendentibus; bracteis lanceolatis; perianthio luteolo oblongo; segmentis linearibus, interioribus apice cucullatis; staminibus perianthio paulo brevioribus; stylo elongato subulato.
J. G. Baker

Bulb small, ovoid. Leaves about four to a bulb, linear, acuminate, erect, 1 foot or 1½ foot long, bright green, channelled down the face, obscurely ciliated on the margin. Scape very slender, terete, as long as the leaves. Raceme simple, many-flowered, 3 to 4 inches long; pedicels erect, ¼ to ½ inch long; bracts lanceolate, as long as the pedicels. Perianth oblong, greenish-yellow, ½ inch long; segments linear-oblong, the three inner inflexed at the tip. Stamens nearly as long as the perianth; anthers oblong, the three inner smaller than the three outer; filaments linear, conduplicate above the ovate base, which is addressed to the ovary. Ovary small, ovate; style subulate, yellow, ½ inch long.
J. G. Baker.

CATASETUM HOOKERI, *Lindl., ♂ AND ♀.*

Catasetum Hookeri is a Brazilian species, which was described by Lindley upwards of sixty years ago in his *Collectanea Botanica*, t. 40, from a dried specimen, since which time it seems to have been quite lost sight of. It has now reappeared among the recent large importations of Brazilian plants, and has flowered in several different collections. The female flowers, hitherto unknown, have now appeared in the Kew collection, on a plant presented by Messrs. F. Sander & Co., of St. Albans. There are two males and two females on the same raceme. In both sexes the flowers are green. The females are very similar in structure to those of several other species, the lip invariably being uppermost, and the sepals and petals spreading. In the males the lip is also superior, somewhat hood-shaped, and with acute apex, while the sepals and petals are connivent underneath. The two antennæ are parallel within the lip. The male racemes are long and arching, and bear numerous flowers. There are eighteen species of *Catasetum* of which both sexes are now known.
R. A. Rolfe.

SOILS MADE WARMER BY DRAINAGE.

THE amount of heat in the soil is a matter of the highest importance to the gardener. In some soils there is an obstacle to the entrance of air and warmth to its lower parts, and that obstacle is the presence of standing water.

The practical gardener need not to be told that heat has a great influence upon the germination of seeds, and the growth of plants. A certain amount of this element in the soil is essential to germination and growth. A certain quantity is also necessary to the decomposition of carbonic acid by plants, and the nitrification of plant-food in the soil. Therefore, if the temperature of our soils can be raised during the period of active early growth, plants will progress faster towards maturity.

All our cultivated plants require for vigorous life a soil in which moisture is present, but not in the form of standing water. If the latter is the case, the plant-roots can only penetrate the soil to the depth at which the water stands. There are several practicable means for increasing the warmth of the soil, and drainage is one of them.

Drained soils are warmer than undrained ones, because much of the water which passes through them would otherwise be evaporated; and this evaporation, it must be remembered, requires enough heat to convert the water into vapour. The amount of heat thus used is naturally large. It has been estimated to be equal to that produced by burning two-thirds of a ton of coal per day, for each acre of land, on an average throughout the year. If this heat were not absorbed by the water, it would be largely, if not entirely, absorbed by the soil. The specific heat of water is greater than that of soil—five times as great as humus, seven times as great as loam, eight times as great as clay, and ten times as great as sand. Accordingly, more heat is required to warm up a certain weight of water than to raise the same weight of soil to an equal temperature.

As drains, therefore, remove an excess of water from the soil in the spring months at least, they remove water that otherwise would take heat from

the soil. More than this, water is a poor conductor of heat, and when the soil is wet, as in the spring months of the year, the warmth will penetrate much more slowly than if the excess of moisture were removed.

The advantage to the gardener of increasing the warmth of the soil he cultivates in the spring months, would be, that he would get plants started several days earlier, and their growth would be more rapid.

It has been recorded that there is a difference of from 10° to 15° in the temperature of drained and undrained soil, and the constantly higher temperature of drained soils is doubtless responsible for much of the larger growths upon them, and often would, alone, pay for the operation of draining.

The principal alterations which the soil undergoes through the removal of stagnant water, may be summarised as follows:—(a). Wet soil becomes drier. (b). Cold soil becomes warmer, for it now receives the full benefit of the heat of the sun and air; while previously a great part of this was expended in the evaporation of water, and could not produce a heating effect. Drained soils have a double advantage in regard to temperature, for they absorb heat more quickly than wet ones, and they do not part with it so readily. (c). Heavy soil becomes looser, more crumbly and softer; when it dries finer cracks are formed than in undrained tenacious soils, and it is more easily worked. (d). Sluggish soil becomes more active and powerful for being more open and warmer, the three great natural processes by which the food for plants is prepared and rendered soluble—weathering, decay, and nitrification—proceed more rapidly and actively, and to a greater depth down into the subsoil. Hence, the same quantity of a manure gives a higher return on drained than on quite undrained soils. (e). Finally, soil further becomes more certain in its returns. As is evident, the gardener by drainage changes an uncertain and less fertile, into a more certain and far more productive and profitable soil, rendering it, to a certain degree, independent of adverse weather.

As long as a soil is wet, a great portion of the heat of the sun's rays falling upon it is ineffectual, because they combine with the water, and convert this into vapour. Watery vapour is to be regarded as a combination of liquid water with a larger quantity of heat; but this heat is no longer sensible to the touch, and therefore it has been called latent, or fixed heat; it consequently cannot any longer contribute to the warming of the soil from which the watery vapour is given off. Direct experiment has given the following increase of heat under equal sunlight in:—

Soils.	Moist.		Dry.
	Fahr.	Fahr.	
Calcareous soils	18 0°	32 4°	
Sandy and clay soils	21 6°	34 2°	
Humus and loamy soils	32 4°	39 6°	

It is clear from the data thus given, as well as from many phenomena of the garden, that draining a wet-bottomed soil may render it not only drier but warmer, and irrigating a hot, dry soil renders it not merely moister but cooler. *J. J. Willis, Harpenden.*

NERINES.

FROM Mr. G. C. Van Tubergen, jun., of Haarlem, we have received a boxful of cut flowers of various *Nerines*, of the brilliancy of which it is almost impossible to speak in fitting terms without seeming to incur the charge of exaggeration.

In colour, they range from white through pink and rose-coloured to orange and scarlet, while some have a violet tinge. Measured across the truss, they range from about 1½ inch (4 to 5 cm.), in the case of *N. pancratoides* to 7 inches (18 cm.), in the case of *N. Fothergillii* major. In addition to the size and colour, the latter, not to be adequately described in words, the points of difference are to be seen in the

relative length of the pedicel and of the flower; in the form of the flower, cup-shaped, funnel-shaped, regular or slightly two-lipped; in the undulation or evenness of the margin of the perianth-segments, the straight or curved direction of the

lip, the stamens and styles being curved; the anthers mature before the stigma. Of course, all this indicates the necessity for insect-visitation in the wild state, and shows what a chance the hybridiser has, and of which, indeed, he has availed himself.

N. pancratioides of Baker, in the *Gardeners' Chronicle*, November 14, 1891; with cylindrical scapes of the thickness of a goose-quill, bearing at the top two oblong acuminate, deflexed bracts surrounding a many-flowered truss, the outer flowers



FIG. 75.—ENCEPHALARTOS ALTENSTEINII: SHOWING FOLIAGE AND SEED CONES MUCH REDUCED. (SEE P. 496)

stamens and style, and in the length of these organs relatively to the perianth-segments. Where the flower is cup-shaped and the stamens are straight, the flower is likely to be regular, but in the funnel-shaped flowers the three or the four upper segments often range themselves together on one side, the others falling to the other side, and forming a lower

Those who are interested in the botany of the genus will find a classified description of all the species and varieties in some articles by Mr. Baker in our columns, December 19, 1885, p. 779, and December 26, 1885, p. 810.

Taking the lighter-coloured forms first, and proceeding to the darker ones, we have:—

of which open first (centripetal). The white flowers (including the ovary), are rather less than 1 inch long (25 mm.). Segments linear with a green midrib, the outer ones apiculate. Between the base of the segments and the base of the stamens is a row of small, toothed fleshy whitish scales, which do not occur in any of the other forms. Of the six stamens the three outer

are at first shorter than the three inner, which though the last to be developed, overtake the earlier ones in the course of development. Anthers linear purple; style columnar, with three furrows and a blunt-lobed stigma. The pedicel, ovary, and part of the outer surface of the outer flower segments are thickly covered with translucent peg-like glands or hairs, which are, so far as we have seen, peculiar to this species, which is so distinct that we should not be surprised, if when more fully known, it will be found to belong to another genus.

N. pudica.—Scape slender. Flowers, $1\frac{1}{2}$ inch (4 cm.) across, funnel-shaped, white flushed with rose, segments oblanceolate acute, more than $\frac{1}{4}$ inch (1 cm.) wide.

N. hybrida striata.—Similar to the preceding, but with more slender two-edged scapes, smaller flowers, rather less than 2 inches across, segments of a bright rose colour.

N. excellens? = *flexuosa*.—Scape two-edged, bearing large many-flowered trusses. Flowers about $2\frac{1}{2}$ inches (6 to 7 cm.) across, perianth funnel-shaped, segments $\frac{1}{4}$ inch (6 to 7 mm.) across, deep rose, with a darker coloured midrib.

N. amabilis grandiflora.—Similar to *striata* but with larger flowers, $2\frac{1}{2}$ inches across (5 to 6 cm.), segments oblanceolate, acute, bright rosy-lilac, with a deeper coloured midrib, scarcely wavy at the edge. *N. amabilis* is stated to be a hybrid between *N. pudica* and *N. humilis*.

N. flexuosa, "violet variety," has a stout two-edged scape, with bold trusses of flowers, each measuring nearly $2\frac{1}{2}$ inches across (6 to 7 cm.), segments linear oblong recurved violet, with a deep rose-coloured band in the centre, $\frac{1}{4}$ inch across (6 to 7 mm.).

N. hybrida, Novelty.—A very beautiful form, with nearly regular deep rose-coloured flowers, 2 inches (5 cm.) across. Segments relatively broad, oblanceolate, recurved at the tip, scarcely or not at all wavy, 1 cm. across; midrib, of a deeper colour than the rest of the segments.

N. sarniensis carnosa.—Scape stout, markedly two-edged; scape many-flowered, perianth funnel-shaped, 2 to $2\frac{1}{2}$ inches (5 to 6 cm.) across; segments relatively broad (1 cm.), oblong recurved, glowing rose-coloured. Stamens and style slightly curved, protecting a long way beyond the segments.

N. atrorubens.—Scape stout, truss many-flowered, with relatively short pedicels (not longer than the flowers). Flowers 2 inches (5 cm.) across; perianth flattish, cup-shaped, segments oblong-acute, slightly wavy at the margins, deeply orange-scarlet. Stamens and style slightly curved, longer than the perianth.

N. Planti (? *sarniensis Planti*).—Scape two-edged, truss many-flowered, pedicels rather longer than the cup-shaped flowers; perianth, $2\frac{1}{2}$ inches across (6 to 7 cm.). Segments oblong acute, channelled, not wavy, orange-crimson; stamens and styles slightly curved, longer than the perianth segments.

N. Moorei.—Scape two-edged, truss many-flowered, pedicels rather stout, as long as the cup-shaped flowers. Perianth about 2 inches (5 cm.) across; segments oblong acute entire, 1 cm. across, rich orange-scarlet, centre of segment and midrib of the same colour. Stamens and styles nearly straight, projecting beyond the perianth.

N. Fothergilli major (*curvifolia* var. *fide*, Baker).—A noble form with a very stout two-edged scape, many-flowered trusses, pedicels stout, rather longer than the flowers. Flowers, cup-shaped, regular, 3 inches (7 cm.) across; segments broad oblong acute entire somewhat channelled, rich and glittering orange-crimson, somewhat paler in the centre. Stamens and styles curved, projecting far beyond the perianth.

N. undulata is an old friend, with slender scapes, numerous light rosy-pink flowers, in many-flowered trusses; pedicels long, slender, quite glabrous, intermixed with linear thread-like bracts. The indi-

vidual flowers measure about $1\frac{1}{2}$ inches in diameter (3 to 4 cm.). Ovaries subglobose, three-lobed, perianth-segments widely spreading, linear recurved at the tips, wavy at the margins. Filaments slender, pink; anthers small, blackish-purple, maturing before the stigma, pollen whitish.

N. pulchella [? *N. = flexuosa* var. *pulchella*] has scapes as thick as a goose-quill, trusses many-flowered. It looks like an enlarged form of *N. undulata*, with flowers about 2 inches (5 cm.) across. Segments rosy-pink, undulate, about $\frac{1}{4}$ inch (5 mm.) across.

N. humilis.—Scapes slender, flowers about $1\frac{1}{2}$ inch (3 to 4 cm.) across, irregular, segments linear-oblong, $\frac{3}{8}$ inch (4 mm. wide), recurved, rose-coloured, with a central dark rib, stamens and style curved (declinate).

N. humilis splendens has the appearance of the preceding, with the markedly irregular flowers and declinate stamens, but the flowers are much larger, and of a richer colour.

N. hybrida "Rosita".—Scape the thickness of a hen's quill. Truss many-flowered, flowers 2 inches (5 cm.) across, segments $\frac{1}{4}$ inch wide (7 to 8 mm.), linear-oblong, curved at the tip, somewhat wavy at the margins, and with a deep rose-coloured midrib.

In addition to those already named, there were sent some flowers of *N. corusca* and its variety, *N. c. compacta*, the latter a very pretty flower of brilliant tint, and closely arranged corymb; *N. elegans*, and *N. Sarniensis insignis*, with bright satiny carmine flowers.

THE SEED TRADE:

THE SEED CROPS AT HOME.—For weeks past seed-growers have been watching with considerable anxiety the signs of the weather, for they want fine sunny autumn days in which to pull up, as it were, some of the arrears of development caused by a cold and retarding spring. It is only those who are acquainted with the business that can understand what a great and important industry seed-growing is in this country, and especially in what is known as the home counties, and how a spell of fine or stormy wet weather at certain seasons of the year can make or mar the hopes and anticipations of those engaged in it. On the whole, seed-growers are having a better time in 1892 than in 1891, though by no means to the extent they could desire. Early round Peas are coming in the form of unexpectedly good samples, but quantities small, generally owing to the Pea weevil having attacked the plants in spring. Early Wrinkled varieties are also of good quality, but short in quantity also. Late Wrinkled Peas were damaged by the stormy weather, and the seeds stained, and none of English growth will be very plentiful. It is a little early to estimate the probable yield of Broad Beans, but both Long Pods and Windsors will be scarce. Essex, which is the leading Bean-growing county, has suffered much in respect of its crops, and it is said the loss to growers will be considerable, which is to be regretted. Dwarf and Runner Beans appear to be carrying beautiful crops, but much depends upon the autumnal weather. Turnips and Swedes are short in yield for the areas grown, many of the plants having been killed during the winter. Beets and Mangels have produced large crops of seeds, but the seed plants were thinned by the action of the winter, and it is some years since the Mangel and Beet plants were so heavily laden with seed, and that of good quality.

Onion seed promises to be plentiful at home and abroad, so far as the ordinary white Spanish type is concerned, which is so largely grown in Bedfordshire; the heads of seed plump, and but little blight, and, as far as can be ascertained, prices are low on the continent at present.

Paranip is plentiful, good breadths and an abundance of produce. Carrot is particularly short in breadth, the yield of seed scarcely corresponding in breadth, but what there is promises to be of good quality. The winter killed many of the seed plants,

The foregoing are the principal vegetable seeds grown in this country, and, as far as can at present be ascertained, somewhat similar results are being experienced on the continental seed farms. *Pisum*.

NEPENTHES, THEIR CULTURE AND USE FOR DECORATION.

THESE plants are not largely grown, because they are not so readily used as many other decorative plants, but in many cases *Nepenthes* could be used for a short time, and with great effect, in the dwelling-house as single vase plants, or as suspended specimens. Of course, some of the varieties are too scarce, and some too small for this purpose, but one of the best can now be obtained for a few shillings, viz., *N. Mastersiana* ×, which can be grown to a good size in a short time under proper treatment. Of late, we have seen these plants brought into greater prominence on account of their insectivorous character, but I do not intend to advise their culture on that account, as from close observation I have made, the fewer insects they catch the longer will the pitcher remain fresh. I will give a note on feeding later on, when treating on their culture, as these plants require feeding, but at the roots rather than in the pitchers. Those who wish to see pitchers in quantity would do well to pay a visit to Messrs. Veitch's nurseries, Chelsea, where they may be seen in splendid health, and the roofs of several houses are one mass of plants covered with pitchers interesting and beautiful.

The raising of hybrids is still zealously pursued, as will be seen by the great numbers of plants round the sides of the houses, in all stages of growth, and those who are anxious to see the great strides made of late years in size of pitchers would see much to interest and instruct. In one house alone the roof for 30 feet in length is covered with grand masses of *N. Mastersiana* ×, with very fine pitchers; and as my guide said to me, it is the finest hybrid *Nepenthes* yet obtained, and here grown in great quantities, is seen its freedom of growth, with pitchers 8 to 10 inches in length, and a breadth of 2 to 3 inches, of a deep blood red, with blotches somewhat after *N. distillatoria*. It was obtained from *N. Khasiana* × *N. sanguinea*. Another fine pitcher, newly introduced, is *Nepenthes Curtisii superba*, a most distinct variety; it is a free grower, and a great improvement on the original *N. Curtisii*, this variety having much larger pitchers, with more colour; the ground colour of the pitcher is a rich crimson, with yellow-green streaks; the rim is wider than the type, and more ribbed, colour deep red, the lid being much freckled. This variety should be in every collection. *N. Burkei excellens* is a grand introduction of Messrs. Veitch, from the Philippine Islands, and is the most variable variety of *Nepenthes* yet known. It differs from the type or original *Burkei* by having larger pitchers, somewhat more cylindrical, and more richly coloured; the spots on the pitchers are much larger, and deeper coloured, and the pitchers are larger and broader—a very distinct plant, of great merit. *N. Dicksoniana* × is a striking and handsome hybrid, the parents being *N. Rafflesiana*, fertilised by *N. Veitchii*; it has very large pitchers, of a light green colour, speckled and spotted with crimson. The plants are dwarfer than some varieties, and it produces its pitchers very freely. *N. Northiana* is a seedling, and one possessing great merit, the individual pitchers being 12 to 16 inches in length, and 3 to 5 inches in breadth, greenish-red, striped and spotted with crimson, its great size making it remarkable. *N. cincta* is worth notice on account of its robust habit and freedom of growth; pitchers are 9 inches long, being a pale green, with crimson and purple blotches, and is a distinct and handsome form. *N. Veitchii striata* is also a striking variety much like *N. Veitchii*, but superior, having pitchers like that variety, but deeply striped with red. Of older kinds, I merely mention a few of the most noteworthy: *N. Hookeriana* and *N. Rafflesiana* should be in all collections, they are noble pitchers; *N. sanguinea* is a beautiful kind, but rare; *N. Mor-*



FIG. 76.—SEED-CONE OF ENCEPHALARTOS ALTENSTEINII. (SEE P. 496)

ganix ×, a beautiful hybrid of dwarf habit; *N. Williamsii* ×, a beautiful hybrid from *N. Sedeni*; and *N. Hookeriana*, with bright red pitchers; *N. hirsuta glabrescens*, a variety with pea-green pitchers, and very distinct; *N. Chelsoni* ×, a hybrid of great merit, a free grower, and producing its pitchers freely.

Nepenthes are best grown in a moist stove, or in a house kept at 65° to 75° in the summer; some good cultivators give a higher temperature, but the minimum is most suitable for houses containing mixed plants. A bare roof may be made beautiful when devoted to this purpose; baskets made from teak-wood are the most suitable, as the air has readier access to the roots than is the case with pots, and a free circulation of it keeps the compost sweet, an essential point with plants requiring so much moisture as *Nepenthes*. Good peat in as fibrous condition as possible, with all the small or dust beaten out, with an equal portion of sphagnum, is the best compost; place a few lumps of charcoal at the bottom of the basket. Repotting usually takes place in February, after which the plants should be kept closer for a time. As soon as new growth commences, the night temperature should not fall below 70°, and during the resting or winter period, 65° is sufficient on mild nights, though 5° less in severe weather is best, as by keeping a high night temperature in winter, the plants get infested with thrips. In the growing season, syringing freely twice daily with tepid rain-water, and shading from strong sunshine, is all that is required to keep insect pests away. At Chelsea, strong measures are taken to induce the formation of large pitchers, and as it is an excellent plan to induce a fresh break at the base, I will describe it: As soon as the various growths have made five or six leaves, the tops are broken right out, which induces new breaks, and large pitchers at times; the plant if left, makes one strong growth and few pitchers, but if checked, several growths are made, producing strong plants, well furnished with pitchers. When a plant is cut down, it usually breaks from the top eye or shoot, forming an ugly growth; this should be prevented by pinching out the top break as soon as seen, which will force a break lower down the stem.

Feeding the plants in August and September with weak liquid cow-manure, at the same time giving more air, and shading less, ripens the wood, and prepares the plants for a lower winter temperature, and also prevents the pitchers shrivelling so quickly. They may at that season, and later, be used to much advantage for decoration for any special occasion. For short periods they answer admirably, but must not be allowed to remain long in cold or dry rooms. I have given various manures a trial; if not given in strong doses, a bag of soot immersed in the tank is a good plan, and keeps insects at bay. If strong manures are given they kill the sphagnum, and the plants suffer, as the sphagnum is one of their chief supports.

A few lines will suffice as to propagation: Cuttings 6 inches long should be taken, and inserted in cocoa fibre in the warm bed of a propagating box, where they root in a short time; but, of course, if the cutting is old it takes longer. A suitable cutting will root in a month or six weeks, and it should be potted up and replunged till well rooted, when it may be finally transferred to a basket. Seed is also readily raised when procurable, but unfortunately *Nepenthes* rarely flower together, so cannot be fertilised. Sown thinly in pans, and plunged in heat, kept moist, and in a temperature of from 80° to 90°, germination is effected in a month, and as the seedlings make a few leaves they should be placed in small pots, as advised for cuttings. Of course, the seedlings are longer in making large plants than those obtained from cuttings. In repotting, much care is necessary to prevent injury to the roots, as these are most delicate, and unless the whole mass of old rooting material is sour it need not be disturbed, as to do this gives a slight check. Very small baskets should be used for young plants, as excessive root space will cause the compost to become sour. With larger plants more charcoal or

a little potsherd should be used. I prefer small baskets, pans, or pots, and to rely upon moisture and feeding during the growing season; and to get abundance of pitchers, strong growth must be checked—this is readily done by cutting down and getting a break from the base. *G. Wythes*.

RUXLEY LODGE.

ABOUT one mile from Claygate Station, on the main line of the London and South-Western Railway, is situated Ruxley Lodge, the residence of Lord Foley. Around it is a fairly extensive park, and it is a very old-fashioned quiet-looking place, having no great pretensions to architectural grandeur, although it is comfortable, commodious, and a good example of the "ancient homes of England," containing a collection of pictures that many a man might envy. Its homely appearance is strengthened by the presence of many varieties of climbing plants, that during the summer months hide the lower portions of the house beneath a wealth of blossoms, varied as they are beautiful.

The flower garden in the front of the house is laid out in the orthodox manner, and has looked very gay during the summer, with a well-selected collection of the usual "bedders." *Calceolaria amplexicaulis* has been trained in the shape of pyramids in the centre of small beds, and has been much admired, although now past their best at the time of our visit. A beautiful view is to be obtained from this point over one of the most delightful portions of Surrey. On the other side is a graceful specimen of the mammoth tree, *Sequoia gigantea*, some 65 feet high, and of a more slender habit than it generally assumes. An immense Horse Chestnut, but a few yards away, has allowed its bottom branches to fall until they have reached the ground, and here they have secured themselves by freely emitting roots into the soil. The tree now forms a pleasant and uncommon archway over the path, the trunk being upon one side, and some of the rooted branches upon the other.

Entering the kitchen garden we find that it has been laid out on very undulating ground, and that, through the close proximity of tall trees, it has not the advantages one would expect to secure in a garden formed from a modern plan. Such a garden as this means a great amount of labour to "keep," to use a gardening term, but the head gardener, Mr. Jno. Miller, has had much experience, and we found a good crop of most vegetables, particularly some rows of sturdy Celery. The fruit trees in this garden have borne tolerably well this season, especially the Apples, and some Apricots that grow on the wall have done remarkably well. Some of the fruits from here secured 1st prize at the Conference at Chiswick in August.

There is also a large Orchard filled with Apples and Pears, and here there has been planted a large number of young trees during the last six years or so. Not only has Mr. Miller sought to increase the usefulness of the orchard in this way, but some few years ago a number of the older and less useful of the Apple and Pear trees were headed down, and grafted with more desirable varieties, and these have been bearing considerable quantities of fruit during the last few seasons. We do not think that this practice should be adopted in an extensive manner, however, with the idea of permanently increasing the value of the fruit quarter, but as a means of continuing the supply whilst fresh plantations are reaching their fruiting stage, there can be no doubt but the method is worthy of adoption. Of Pears and Apples there are about one hundred varieties, and we noticed that Blenheim Orange Pippin does very well here, and is a free cropper upon trees of moderate age.

Most of the glass-houses at Ruxley are like the general characteristics of the place, and are not of modern build, but they are evidently put to the best advantage, and the Vineries, Peach and Fig-houses give evidence of Mr. Miller's skill as a fruit grower. About the individual houses, and of the plants, &c., we can say little, as during our short visit no notes were taken. In the Peach-houses, however, where

the front trellis is some distance from the roof (in order that the trees on the wall at the back shall not suffer), a branch is taken from the trellis under each rafter, and attached thereto, from which some good fruits are obtained without unduly shading the other part of the trees—so says Mr. Miller. A good span-roofed house lately built, and with two divisions fitted with a centre stage, is used for the Strawberries (a good number of which are forced here), and later for Tomatos, Cucumbers, &c.

We cannot conclude this short notice of Ruxley Lodge without mentioning the excellent Mushrooms, grown in beds both inside and out—those outside on the ridge system—but most frequenters of the meetings of the Royal Horticultural Society have seen Ruxley Mushrooms.

EARTHING CELERY.

THE object in "earthing-up" Celery is to have as large a quantity as possible of the stalks in a white and edible condition. There are two means of blanching Celery—by packing the soil round it, or binding rough strong paper on to the heads, the latter answering well when it is intended to exhibit the heads, the paper preventing the outer leaves being disfigured by slugs. By this mode of blanching the Celery may be afforded liquid-manure at the root till the day it is dug up, a decided advantage over the older method of blanching with the soil. Sheets of paper are required of the breadth the Celery is likely to reach in height, from the root to the first leaves; and these should be bound neatly, but not tightly around the sticks, and in about three weeks from the time of putting the paper on them, the Celery will be sufficiently blanched for show purposes.

Some persons commence to earth-up their Celery much too soon, thus checking growth more than is desirable, the finest growth is wanted. Celery should not be earthed-up at all as long as the leaves will stand erect, but as soon as the outer ones commence to droop, the first earthing should be given it. The day previous to doing this, the soil should be thoroughly saturated if at all dry, with liquid manure if the plants are not very strong, but in some kind of soil it is a mistake to have the Celery too large, and in heavy soils very large heads decay badly during the winter. In light sandy soil it is otherwise. But even in heavy soils if there is the least suspicion that there is dryness at the root, a soaking of clean water will be an advantage. Some gardeners do not take the trouble to remove the several offshoots which spring from the base of the plants, but let all grow, not suspecting the weakening effect that these exercise on the development of the plant. All side growths should be stripped off with a sharp snatch, and the short lower leaves must also be removed. In heavy soil slugs are sure to be troublesome, and the present is the time when steps may be taken to avert this injury to the plants. With this aim, sprinkle soot and lime to which has been added a handful or two of common salt, over the soil, previously securing the Celery plants in an upright position ready for moulding up. There are several ways of accomplishing this. Some endeavour to carry this out by one person holding a Celery plant tightly together with each hand, while another shovels the soil up to them, and this is the time when the sticks are often rendered crooked by the hold on the sticks being relaxed before the soil has been made firm, small pieces of soil easily getting between the stalks and into the hearts of the plants. Again, considerable damage is done by throwing the soil against the plants in too large masses, which tends to push them over on to one side, rendering them crooked. The best method is to tie each stick with a piece of bast firm enough to prevent soil lodging in it.

In the case of tall sticks, two ties may be required, and even then it is time well spent. When all are tied, the soil at the side of the trenches must be broken quite fine before placing it about the plants, to which it should be thrown or rather pushed, as high as the centre leaves are visible. Press the soil firmly about the plants, and when all is

complete, the leaves require to be released, which is best done by cutting the bast, and allowing it to remain in the soil. After an earthing-up is completed if it is not the final one, sufficient soil should be dug out of the trench to suffice for another earthing-up, and this should be laid in the rough on the outer edge of the moulding, where it will get pulverised by rain and wind, and in a fit condition for the next earthing-up, say in fourteen or twenty-one days. When the final earthing takes place, the sides should be made quite smooth; a sharp pitch should be given the ridge at the top so that rain will readily run off. *S. H.*

BOOK NOTICE.

LANDSCAPE GARDENING.

WE were recently made aware by the startling details of Messrs. Blomfield and Thomas' book on *The Formal Garden in England* [See *Gard. Chron.* 1892, p. 276, Vol. XI.] that the battle of opinions as to the art of landscape gardening still rages in some circles with all the old shifting reasons; and now we are confronted with a contribution to the imbroglia by Mr. W. Robinson,* whose expletives and adjectives are scattered about as they were wont to be in our grandfathers' literary feuds. Two books (*Formal Garden and Garden Craft*) are "not worth notice for their own sake," yet a book is written about them! "Mr. Blomfield writes nonsense, and then attributes it to me;" "a passage full of nonsense;" "confusing art drive!" and so on. In one passage this eternal truth is given prominence: "How much better it would be for every art if it were impossible for men to write about things of which, by their own showing, they have not even elementary knowledge!"

To criticise a criticism usually carries the writer into the airiest regions of mere opinion. Yet that is in some sort the task we set ourselves; but we do not propose to discharge our duty on such shifty lines. We may, however, tread safer ground, if we examine some of the reasons which Mr. Robinson adduces for his generally condemnatory remarks on Messrs. Blomfield and Thomas' book, and, if we can, discover the bases of some of his actions. We have already recorded our opinion on the work with its strange and extreme reasoning, and of course we have many points of agreement with Mr. Robinson's strictures and opinions, which must be common to many readers who have artistic knowledge and feeling, and who are sensitive to mis-statements, whether resulting from ignorance or defective appreciation. With many of the conclusions reached we cordially agree, although reaching the goal not always by the same path. Here, then, we have Mr. Robinson as self-appointed judge, and we are concerned with the utterances that come from the critical judgment-seat.

The judge thinks the frequent presence of "stupid work in landscape gardening" almost excuses the appearance of the two books, although he concedes that "The one English thing that has touched the heart of the world is the English garden." Though not just in this order, Mr. Robinson, after mercilessly showing up many passages in the book he is criticising, very properly objects to the use by its authors of the coined term, "Landscape" (Heu!), which is used throughout the book as "a term of contempt," and then in the following passage comes near to one of the main portions of the endless dispute: "They may be quite sure that there is a true and beautiful art of landscape gardening, notwithstanding their denunciations, and it is none the less real because there is no neat definition of it that pleases the minds of those who declare that it does not exist." This is one of the standards round which the battle rages. Why does not Mr. Robinson contribute his

own definition, if he has one? There are definitions, and here is the latest, which may well be quoted, even if, or perhaps because, Mr. Robinson may not have seen it. Mr. Milner, in his book on the *Art and Practice of Landscape Gardening*, says,



FIG. 77.—POLLEN CONE OF ENCEPHALARTOS ALTENSTEINII. REAL SIZE. (SEE P. 496).

"It is the province of the landscape gardener, as I understand the art, to appreciate the multitudinous means whereby Nature expresses her beauty, and so to use those means artistically as to arrange their force for producing the delightful result he desires to achieve. To servilely copy Nature's forms is to incur

the pettiness of mere reproduction in little, with the penalty of a falsification. To utilise her means, and to let the spirit of her works influence our art in every practicable way, is the true practice of the art of landscape gardening." If this definition is not "neat" enough, it at least affords a reply to some of the most hackneyed assertions bandied in the current dispute; and particularly what Mr. Robinson styles "the nonsense" of Mr. Blomfield. "We go to Claude, and having saturated our minds with his rocks and trees, we return to Nature, and try to worry her into a resemblance to Claude." This is indeed an astounding description of the art, not based on the intellectual rock, and very innocent of prevalent knowledge.

Mr. Robinson seems to have a contemptuous opinion of our architecture. "In these days, when our ways of building are the laughing-stock of all who care for beautiful buildings, there is plenty for the architect to do without spoiling our gardens; most of the houses built in our time are so bad that even the best gardening could hardly secure them from contempt." These are remarkable phrases when applied to the works of Norman Shaw, Aston Webb, Bodley, Waterhouse, Burgess, Jackson, and others. But they seem to consort with his opinions of the landscape gardeners, all except one, whose pose is more than once noticed in this book.

The best landscape gardening of the present day does not practise in either extreme of the opinions that are so much agitated. It takes a middle course with a due regard to appropriateness, an element somewhat under-estimated by Mr. Robinson. In regard to the terrace, for instance, that feature is used as a base for the house, to give dignity and an expression of stability to the structure, and its architectural details are so used as to accord with, or even to extend the art expression of what is, indeed, the principal object in the whole demesne. In connection with the terrace, formal gardening is properly used, and is characterised by the beautiful natural forms that the horticulturist's enterprise has placed at our disposal. From the terrace the garden is treated by gradations to merge into those wider expressions of natural beauty that we style the park, and so on to the distant landscape, whether there to our use, or partly or wholly created by artistic treatment. Mr. Robinson would bring the field up to the house wall without intervention of formal feature at all. Messrs. Blomfield and Thomas would circumscribe the house with a space closed by high walls shutting out the landscape picture, and letting their formal garden blossom principally with antiquarian fade! *Medio tutissimus ibis.*

ROUND LIVERPOOL.

(Continued from p. 462.)

HIGHFIELD.—In the compact gardens surrounding the residence of William H. Tate, Esq., the whole range of gardening, both indoors and out, in more or less degree in the several departments, is admirably carried out by Mr. Haigh, the gardener at Highfield; or, rather, by the co-operation of the proprietor and his gardener, after the manner which we always find where gardening is successful.

The plant-houses at the present season are the most attractive part of the garden, and in them we found a fine lot of plants, and especially those useful for decoration or for cutting. Among them, bulbous plants are prominent, and *Eucharis*, *Pancratiums* (or *Hymenocallis*, as they more properly should be called), *Griffinias*, &c., are well and extensively grown.

Roses, both indoors and out, also come in for a good share of attention, and *Crotons*, *Dracenas*, &c., are produced in neat well-coloured plants, a stage which, while giving really useful plants, represents them in a far better aspect than the unwieldy specimens sometimes seen in gardens.

The Orchids, which are special favourites at Highfield, on account of their giving their gorgeous blooms at all seasons, and especially when showy flowers are scarce, are excellently well grown by Mr. Haigh, and the showier species are those mainly embraced in the

* *Garden Design and Architect's Gardens*. Two reviews, illustrated, to show by active examples from British gardens that clipping and aligning trees to make them harmonise with architecture is barbarous, needless, and inartistic. By W. Robinson, F.L.S. (London: John Murray, 1892.)

collection. The varieties of *Cattleya aurea* are grown in goodly number, and the beauty of the many flowers at present open in the houses in which they are suspended, renders an excuse for partiality to them needless. This beautiful section of *Cattleyas* has been largely increased in variety lately by the recent importations, most of which are readily distinguishable to those who know them. The variety called *C. chrysotoxa*, imported by Messrs. F. Sander & Co., is much liked at Highfield, and even this variety has a great range of sub-varieties, for some have white sepals and petals, and in others, the labellum nearly approaches that of *C. Hardyana*. *C. Warscewiczii*, or, as it is more commonly called, *C. gigas*, does well at Highfield, and the intermediate form between it and *C. aurea*, viz., *C. Hardyana*, also there finds a place. Glancing through the Orchid-houses, in which good culture is evident, we note a very fine lot of *Cypripediums*, large sturdy plants; a remarkably well-grown lot of *Dendrobiums*, and especially of *D. Wardianum*, *D. nobile*, and other showy kinds; a good batch of *Miltonia Roezlii* and *M. vexillaria*; *Vanda cœrulea*, well grown, and well bloomed; *Odontoglossum crispum*, and other cool Orchids, clean, sturdy and floriferous; and the other species usually met with, in excellent trim. But, passing down the fruit range, we come to one of the best and most satisfactory features in the garden, viz., the collection of Mexican *Lælias*, which are suspended from the roof of the Fig-house, and of the condition of these too much cannot be said. The varieties of *Lælia anceps*, both white and coloured, are sending up flower-spikes very profusely, and, shortly, there will be something like one hundred and twenty of them in bloom, which, with the flowers borne on the stout spikes of *Lælia autumnalis atropurpurea*, and other species, will make a fine and lasting show.

Another fine specialty here are the magnificent plants of *Lælia purpurata*, which thrive equally as well as the *L. anceps*; and in the same range of Orchid-houses are a grand lot of *Cœlogyne cristata*, a fine one of *Odontoglossum grande* in flower, and good *Oncidium tigrinum*, *O. macranthum*, &c. In another little house, on a shelf, are a row of *Dendrobium Jamesianum*, in excellent condition; and in the pretty little fernery, the specimen of *Adiantum Williamsii* is, perhaps, equal to the best plant of it ever grown; and other good specimen Ferns, too, are here, quite worthy to keep it company.

FRINGILLA, SEFTON PARK.—There is a red-letter day now and then in every garden where Orchids are made the special or only feature, and on such a day did we pay a visit to Reginald Young, Esq., one of the most enthusiastic cultivators of Orchids in the Liverpool district. The reason why the day should be marked was soon disclosed to us, by our being presented to the loveliest plant of *Cattleya Hardyana* we had ever seen, and which, although only a moderate-sized plant, bore several spikes, bearing altogether ten of its gorgeous flowers, the greater part of which had only opened that morning. Viewed in comparison with the original *C. Hardyana*, Mr. Young's may be said to be lighter, and with a more pronounced marbling of cream colour showing through the rosy-crimson surface colour of the sepals and petals, but *C. Hardyana* it is, and, moreover, a form which does credit to the type. The class of *Cattleyas* to which this beauty belongs, viz., *C. Warscewiczii*, *C. aurea*, &c., do remarkably well in the neat Orchid-houses at Fringilla, under the watchful care of Mr. Poyntz, the gardener. A few of them are now in flower, and we readily call to mind the bloom of one of the plants recently sent to us, and which measured over 9 inches across, and had a most extraordinary development of the richly-coloured labellum. Another there now in bloom appears to be a distinct type, the flowers being light in colour, and the yellow blotch formed on each side of the lip of the ordinary type being in this one white.

Cypripediums are great favourites here, and the fine collection of them has many still in bloom, and notably the many good forms of *C. Ashburtoniae* ×, *C. Harrii* ×, and that favourite, *C. oenanthum*

superbum ×. Passing through the houses we find them bright with the flowers of *Vanda Kimballiana*, *Lælia pumila Dayana*, *Cattleya guttata*, *C. velutina*, *Dendrobium Dearei*, and other *Dendrobiums*, *Phajus maculatus*, *Cœlogyne speciosa*, *Restrepia antennifera*, *Zygopetalums*, &c., and soon there will be a fine show on the plants of *Epidendrum vitellinum majus*, which between them are sending up about eighty spikes; *Lælia anceps*, *Cattleya Bowringiana*, and other autumn and winter-flowering species.

(To be continued.)

BRITISH FUNGI.*

WE are pleased to announce the commencement of the publication of a new work on British fungi, which proposes to do for these peculiar plants what Cooke's *Handbook of British Fungi* did for them twenty-one years ago; that is, consolidate all the species in one work, and give description of all the known British genera and species up to date, with illustrations of the several genera. The *Handbook* has been so long out of print, and the number of recorded species has so much increased, that the need of such a book has long made itself felt, apart from all the modifications and limitations of genera, and other improvements suggested by the advancement of science, and better methods of study. The work in question is proposed to occupy three volumes, of which the first is published. We fear the author is far too sanguine in his hopes of comprising all the species within the limits of three such volumes. This first includes a portion only of the Basidiomycetes, commencing with the *Gastromycetes*, and working backwards through the latter position of the *Hymenomycetes*, of the *Handbook*, to the commencement of *Agaricini*. We confess our inability to appreciate the grave reasons which induced our author to depart from the orthodox sequence, and invert the order of succession. Without some good reason, which does not appear upon the surface, we submit that such a departure is an error of judgment, inasmuch as it tends to the confusion of students, and increases the difficulty of referring back to, and comparison with, previous authors, without any corresponding advantage.

The book is neatly and clearly printed, and the cuts sufficient for the purpose, whilst the characters of genera and species seem to be all that could be desired, not prolix, but ample and "up to date;" including spore measurements, which is a somewhat recent innovation, liable to abuse in practice, if applied too inflexibly.

The best test of a work of this nature lies in its practical use, and we doubt not that experience will confirm our impression that it is workmanlike in character, and careful in execution, although we had rather not have had occasion to express dissent from the method of arrangement, or taken exception to the elevation of the subgenera of *Agricus*, to the rank of genera. We cannot conclude this brief notice without a special commendation of the fullness of the descriptions, and illustrative notes, under each species. It is clearly manifest throughout, that our author is in sympathy with the student, and is doing his best to give him all the help he can in the discrimination of species. The study of fungi has somewhat declined of late in this country, and British mycologists, ever few in number, have sensibly diminished; but we hope that these volumes, when completed, will inaugurate a new era of activity, and revive once more a useful and interesting study. M. C. C.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

PEACH AND NECTARINE TREES.—Prune, clean, and retie all trees which have shed their leaves. Vines and Figs may be put off till a more convenient

time, but if Peaches and Nectarines be left till, say, the early spring-time, their buds, which are then more or less on the move, run the risk of getting thinned in numbers if much cleaning has to be done; therefore, it is desirable that all operations involving the manipulation of the shoots should be carried out at the present season. In some instances the thinning out of the bearing shoots to from 4 to 6 inches apart is all that will be necessary in the way of pruning, and while doing this the aim of the pruner should be to remove as much of the old wood as possible, and reserve the young at about an equal space apart. Recently-planted trees, however, will often be found with shoots which have not perfectly ripened, the points being green, and these should be shortened to a stout wood bud on a ripened part of shoot. Scale and red-spider are the chief insect enemies of the Peach. If these were present during the summer months an effort should be made to get the trees into a clean start at this season. For scale use a stiff brush and Fir-tree oil at its recommended strength, going over every twig and branch, and apply two syringings of the same insecticide at intervals of a fortnight afterwards. If this cleaning be well done, none of the pests referred to will escape. I treated a house in this manner last winter with excellent results. Of course, the woodwork, trellises, walls, &c., had the benefit of a syringing, the walls being also carefully lime-washed, the wash having a handful of flowers-of-sulphur mixed into it. After the trees have been fastened to the trellis, and the house properly cleaned, remove the soil of the border to the depth of 3 inches, which will tend further to keep the trees clean, by removing any insects or insect eggs which may have fallen on it, and cover the roots with fresh materials. Old trees may be supplied with a compost which contains a liberal sprinkling of lime and basic slag. In fact, it will be prudent in some cases to more thoroughly overhaul the border, and afford the plants a chance of becoming robust. Good fibry loam will, nevertheless, be all that will be required by young trees, excepting that the lime formerly supplied to the soil may have become lost by watering, and found its way to the subsoil or lower parts of the border, and another application of it becomes indispensable. Afford the borders on the completion of the job a thorough watering, but at no time in the winter months should Peach borders become dry, or bud dropping will follow. All the same, watering can be overdone if the drainage is not good, and the gardener must ascertain by examination if the soil needs much or little water. Keep the houses cool and airy, 3° or 4° of frost will do no harm to the plants.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

REMARKS AND HINTS ON CULTURE.—Now that little repotting or top-dressing remains to be done, and not much time is taken up in watering the plants, it will be found a good time for a general clearing up of each house in succession, washing and freeing the plants from dirt, scale, thrips, and other insects. In the performance of this sort of work, an insecticide, into which each plant should be dipped, should be at hand. After the leaves and bulbs should be wiped with a sponge, to remove the wash, and prevent it being carried to the roots. Some well-tried and safe insecticide should be used which will not injure the tenderest plant, whilst it should be capable of destroying thrips and aphids, and of making scale readily removable. Instructions for making a good solution were given in the Calendar for the week ending February 20. Many of the insecticides that are sold for the same purpose, are efficacious when diluted with rain-water to the desired strength, but if the grower has not used them as yet, I would advise him to try the effect of a washing on one of the plants before using it generally. Cockroaches and woodlice will be troublesome if not destroyed at this season. The first-named are easily killed-off by using a certain preparation sold for this purpose, and the others may be trapped in several ways, one of the best of which is, I think, to hollow out a Potato or a Carrot, and place it concave-side downwards on the surface of the compost in which the plant is growing; and it is likewise a capital trap for slugs, snails, and centipedes, which are so destructive to tender flower-spikes, especially in the cool-house. When cleaning the plants, remove all such growths of sphagnum moss which are overgrowing the pseudobulbs, hiding them from view, and excluding light and air from them to the detriment of the plant. The woodwork, glass-staging,

* *British Fungus Flora: a classified text book of Mycology.* By George Masee, in 3 vols. Vol. I. (Bell & Sons.)

and walls, should be well cleaned, and all places likely to harbour insects cleared out.

TEMPERATURES.—For the *Odontoglossum*-house 50° is a good night-temperature, and 55° or 60° will be suitable by day, a fair amount of air and moisture being afforded. I would advise Orchid-growers not to go to extremes with either air or moisture, but have due regard to the state of the weather, and to be careful in watering any plant, as none will continue healthy if this be overdone. The warmth of the intermediate-house and that for the *Masdevallias* should not exceed 55° at night, or 60° to 65° by day. It is well not to let the temperature of the *Cattleya* and Mexican-houses get too low, many plants not having yet matured their pseudobulbs; 58° by night, with a rise of 10° by day, will answer very well for the present, with a plentiful amount of air on suitable occasions. For the East India-house, a temperature of 65° by night, with a rise of 10° by day, will suffice, taking care to keep those plants that require most heat at the warmer part of it.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

PREPARING THE GROUND FOR PLANTING ROSES.—The soil most suitable for the Rose is a rich loam, inclining to be heavy, of good depth, and resting on gravel, and if the land slopes to the south-east or south-west all the better. Should the natural soil be too light, some clay should be well mixed with it. On the other hand, should it be unduly stiff and impervious to water, leaf-mould, road-grit, coal-ashes, burnt-earth, and short manure, should be added to it, and well mixed with it in trenching the beds. As a rule, it may be said that Wheat-land will grow Roses well, their cultural requirements being properly attended to.

PLANTING.—Although Roses may be planted at any time in the interval between the beginning of the month of November to the end of February (weather permitting), the sooner the work can be done in November or December the better will be the results the first year. If the Roses are planted in rows, as, for instance, at the sides of the walks in the garden, holes of about 18 inches in diameter and depth, should be dug out, and, if necessary, a layer a few inches deep of hard materials put in as drainage. If the excavated soil is unsuitable, replace it with one consisting of three-parts good loam, and one of rotted manure. This being well mixed, plant the Rose bushes, trees, or standards, in the centre of each hole, and at about the same depth as they stood before, treading the soil well about them. Before planting, cut off any damaged or unduly long roots with a knife, and in such a manner that when the plant is put upright the cut surfaces will press on the soil. This done, put a stout stake to each plant, and secure the Rose to this with a loose band, and afterwards afford a mulch, 2 inches thick, of rotted manure. Choose a fine day for the planting, and never plant when the ground is sticky, but lay in the plants, and wait till it is drier and workable. Roses growing in beds, as well as those freshly planted, should at this season have a surface-dressing of manure.

ROSES ON THEIR OWN ROOTS.—For planting in beds I prefer own root Roses put in about 4 feet apart, if the plants are strong, pegging the shoots over the beds at the end of the following March or early in April, according as the season and situation are early or late. Thus treated, the shoots send out flower-bearing side shoots over nearly their entire length, and the suckers, which annually push from the roots, get duly pegged down between the older shoots, which ultimately, i.e., when the allotted space has been properly covered, they will replace, the old growths being cut out each year as soon as the bloom is over. In this way fresh vigour, and its consequent floriferousness, are given to the plants. In my next Calendar will be found a list of varieties.

WINTERING ECHEVERIA SECUNDA GLAUCA.—Plants of *Echeveria* should now be taken up, the offsets or young plants being removed and "sized," should be stored away in shallow boxes, putting all the large, medium, and small-sized plants in boxes by themselves, working light mould firmly about the root stems, and then standing the boxes in any cold house or pit where a little protection can be afforded from frost. If necessary to extend the stock, the root stems of the old plants should be reduced, and then be stored away in boxes as described above.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

POTTING-UP CAULIFLOWER PLANTS.—Cauliflowers should now be potted in 48's or large 60's for early spring planting. It is an old method of preserving them over the winter, but it is a trustworthy one. When these plants are pricked-out into frames, the growth gets before planting-time somewhat drawn, and a check is given them when transplanted; whereas in pot-growth it is sturdier, and the plants can often be kept more exposed to the air. The larger-sized pot admitting of the plants attaining a good size without cramping the roots or straining them, and when they are potted plunge in coal-ashes for a few weeks before sheltering them, it does them much good. Damp is the chief thing to guard against, therefore heavy rain should not fall on the plants during cold weather; rich soil should not be used, or light potting. Two excellent varieties are the Pearl and the old Walcheren. Early London is a variety often recommended, but it is no earlier than the first-named, and is a looser-growing plant with long leaves. If handglasses can be spared (nine to a full-sized light), may yet be planted out on a warm border, reducing the numbers at planting time to the corner plant.

ASPARAGUS BEDS.—The seed-bearing stems now ripe should be carefully cut off before the seed falls, otherwise the immense number of self-sown plants on the beds will greatly impoverish the permanent plants. The haulm which is not bearing seed should remain till it is quite ripe, too early removal causing loss of vigour. Plants required for forcing should have their stems cut off. When Asparagus does not succeed in the staple soil, the present is a good time to prepare materials for beds, as when this is done a few months before planting or sowing, these become consolidated, and in better condition for either purpose.

RHUBARB.—This is much required towards the end of the year, and those who cannot afford space for forcing the roots out-of-doors should lift the roots when the foliage is ripe, and place them close together in a shed before beginning to force, the lifting causing them to respond quickly to forcing. To get early Rhubarb, a brisk bottom-heat is required if the roots are dug up and placed in the forcing-house, but less under the preparatory method. The Rhubarb quarter should have all decaying leaves cleared off, and the crowns exposed so as to mature them; and in lifting roots those should be selected which have been undisturbed for two or three years. There is much difference in the time at which the different varieties come into use, and for forcing an early kind only should be selected, as Royal Albert, Myatt's Linnæus, or Johnston's St. Martin; the last is an excellent forcer.

ROOT STORES.—There should be no delay in getting the various root-crops requiring protection into store, and, if possible, when they are dry. Onions and Potatoes will require frequent examination, and turning over. A good method of keeping Onions is to rope or tie the bulbs in bunches. This may be done in bad weather, when the gardeners cannot work out-of-doors. Keep the bulbs as cool as possible. Beans and Peas, and other seeds should be cleaned, and placed in a dry, cool store, and properly labelled.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

ROOT PRUNING.—This is a matter the gardener must give careful consideration to when it is decided to lift and prune the roots of any tree or bush that may not be doing well. The work should be taken in hand and completed before the season of planting generally begins. If the trees to be root-pruned are large, only one-half of the mass of roots should be dealt with in one year. When lifting the roots, begin by opening out a wide trench so far away from the stem as the branches extend, and take out the soil from this trench at the least 2 feet in depth, and when this is cleared of soil, undermine the body of roots, constantly throwing the soil back, taking great care to lift or sever every root that has a downward course. Having got out all the roots intended to be lifted this time, and as near to the stem as it is prudent to go, mat them over, or cover with damp litter, whilst the operation of smoothing the bruised and mutilated root-ends, and the shortening of long-reaching ones, and those pointing downwards, is in progress. Having completed this kind of work, first make

a firm level platform for the lowest stratum of roots to rest upon; spread these out in radiating lines, using wooden pegs to keep the more stubborn in position, and then cover them with a few inches of soil, and treat the next stratum in the same manner, always making the soil very firm about the roots; and proceed thus till the topmost roots are placed under the soil, which should cover these last to a depth of 4 inches. Peaches, Plums, Pears, &c., may all be lifted and transplanted at this season, even if they are of large size, without fear of next year's crop suffering, if the work be done carefully and early. Young trees growing rapidly, and where there is plenty of wall space to cover, should not be root pruned before the space is covered, as the trees do not fruit naturally whilst growing fast. The trees may then be lifted or root pruned. All preparations for planting young nursery trees should now be made, and the required trees sent for. Gather Apples and Pears when dry, and examine those in store, removing decayed fruits. Keep the fruit-room cool. Many of the best varieties of Pears will now be ripe, and the riper specimens should be selected for consumption. The following are excellent at this season, Doyenné du Comice, Marie Louise, Thompson, Emile de Heyst, Beurré Superfin, but unfortunately they ripen nearly at the same time. Winter Nellis, a not large but a delicious fruit, should not be overlooked when ordering trees, and others are Durondeau, Glou Morceau, Fasse Colmar, and Olivier de Serres.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

VIOLETS.—There should be no delay in making up frames or pits for winter Violets, and getting them planted. The pit or frame should be filled up to within 12 inches of the glass with fairly rich light soil, made firm beneath and around the plants, and when lifting these, preserve as far as possible the ball intact, and compact. In planting, allow 6 to 9 inches between the plants, according to strength of growth of the variety, close planting resulting in a poor crop of flowers. Till the plants are established in the soil, a light shade should be afforded them during bright sunshine, and slight overhead sprinkling early in the afternoon, which will favour the emission of fresh roots. After this has taken place, air should be admitted to the frame whenever it does not freeze between 8.30 a.m. and 3.30 p.m. In mild weather the plants are benefited by a slight amount of ventilation all night.

CHRYSANTHEMUMS.—After this date it will not be safe to let the plants stand out-of-doors, and steps must be taken to find space for them in a light house, where they will be safe from frost, and will not suffer from dampness. A vinery or Peach-house from which the crop is taken are suitable places. The glass should be cleaned, so that there is no obstruction to the light, and all decaying substances cleared out of the house. See that the drainage of every plant is efficient, and that all dirt and decayed leaves are removed, washing the pots, and slightly surfacing with fine loam if the space at the top will allow of it; and should the least sign of mildew present itself, apply flowers-of-sulphur at once to the affected parts. In staging, keep the heads of the plants near the roof, and allow ample space between the plants. During fine weather, allow the ventilators to be left open night and day, the hot-water pipes being made slightly warm, so as to promote the circulation of air amongst the plants, thus preventing damp affecting the flowers.

HERBACEOUS CALCEOLARIAS.—Plants which are still in small pots should be potted into others slightly larger; and as Calceolarias are very impatient of fire-heat, they should be placed in a frame or pit, where there is just sufficient heat to keep out frost. In the southern parts of the country a banked-up garden-frame and mats are all that will be required to carry the plants through the winter.

BULBS.—The early-flowering species of Lilies should now be potted when received, for if left out of the soil for long periods of time they become weakened, and bring poor blossoms. Bulbs which were flowered in pots will now be on the move, and should be repotted, and placed in a cold frame or pit with the other bulbs. If not already done, all bulbs of Hyacinths, Tulips, Scillas, Polyanthus, and paper-white Narcissus, should be potted forthwith, also *Freesias refracta alba* to form a succession to those started several weeks previously.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	OCT. 24	Sale of Plants and Dutch Bulbs, at Protheroe & Morris' Rooms.
		Sale of Nursery Stock, at Neale's Nursery, Wandsworth Common (two days).
TUESDAY,	OCT. 25	Sale of Dutch Bulbs and Imported Orchids at Protheroe & Morris' Rooms.
		Dutch Bulbs, &c., at Stevens' Rooms, Fruit Trees, at Horne's Nursery, Cliffe, near Rochester.
WEDNESDAY,	OCT. 26	Established Orchids, at Seeger & Tropp's Nursery, East Dulwich, by Protheroe & Morris.
		Dutch Bulbs at Protheroe & Morris' Rooms.
		Nursery Stock, at Tangley Park Nurseries, Hampton.
		Nursery Stock, at Hollamby's Nurseries, Groombridge, Tunbridge Wells (two days), by Protheroe & Morris.
THURSDAY,	OCT. 27	Dutch Bulbs, &c., at Sale Rooms.
		Orchids of the late T. Harcourt Powell, Esq., at Stevens' Sale Rooms.
FRIDAY,	OCT. 28	Sale of imported Orchids and Dutch Bulbs at Protheroe & Morris' Rooms.
SATURDAY,	OCT. 29	Sale of Dutch Bulbs at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—47°·3.

Cycads at Kew.

THE collection of Cycadeous plants in cultivation at Kew stands unrivalled, both in regard to the number of species represented, and the size of the specimens generally. The group represented in our Supplementary Illustration is made up of huge specimens of *Encephalartos*, *Dioon*, *Cycas*, *Macrozamia*, and *Zamia*. These, however, are only a portion of the Cycads contained in the Palm-house, very large specimens occurring frequently among the several large groups into which the giants of the house are now divided. *Cycas circinalis*, 9 feet high, and branched, is planted out in one of the beds among great Palms and Musas; a male plant of *C. revoluta*, with a magnificent rosette of leaves, is conspicuous in the north end of the house, and last year attracted considerable attention whilst bearing a cone 16 inches long. Cycads generally fruit well at Kew, and there is now in Museum No. 1 a large collection of the cones of these

plants, most of which have been produced by the Kew plants.

The ornamental character of almost all Cycads is made abundantly evident by those in cultivation at Kew. For large stoves or warm conservatories many of them are at least as well adapted as the best of Palms and Tree Ferns. A large house planted with the best of these three orders might be made a magnificent picture, full of interest and charm for the scientific as well as for the everyday person. The two which may be called fairly well-known garden plants, viz., *Cycas revoluta* and *C. circinalis*, have not a few rivals in decorative value, such being *Zamia muricata*, *Z. Lindenii*, *Encephalartos Hildebrandtii*, *E. Frederici-Guilielmi*, *Ceratozamia mexicana*, *Macrozamia Hopei* and *M. Macleanii*. There are also some beautiful species of *Cycas* beside the two common ones. There are few plants more interesting and ornamental than the anomalous *Bowenia spectabilis*, and in the whole range of garden plants we have nothing nobler than *Encephalartos Altensteinii*, when largely developed, as it is at Kew (see figs. 75, 76, and 77).

The cones of many Cycads are highly ornamental, both in form and colour, whilst some are of great size. *Encephalartos villosus* produces cones 18 inches high, and 6 inches wide, formed like a Pine-apple, and coloured bright yellow on the fleshy scales, through which the large nut-like seeds, coloured rich red, are finally partially exposed. The collection of cones sent from Kew to illustrate Mr. CARRUTHERS' lecture before the Royal Horticultural Society on Tuesday last excited as much admiration as surprise among cultivators, many of whom, forgetting how many had been illustrated in our own columns, could not understand how such things could be in English gardens, and they not know of them.

Although Cycads are rare in the garden, many of them are old introductions. According to the Kew records of J. SMITH, *Cycas circinalis* was in cultivation there in 1700, and it is at least a hundred years since *C. revoluta* was introduced. The first plant of *Encephalartos Caffr* sent by MASSON to Kew in 1775, and which Sir JOSEPH BANKS saw in cone in 1819, is, we learn, alive and well at Kew still, as also are the six plants of the same genus, which were received from the Cape in 1849. JAMES BOWIE sent *E. horridus* to Kew in 1823, and his plants are thriving in the Palm-house now.

The recent additions are *Macrozamia Moorei*, received in 1882 from Australia, and several other species of this genus, among them being *M. Dyeri*, named in compliment to the Director of Kew, who has long paid special attention to Cycads, with a view to writing a monograph of them, having accumulated splendid material for that purpose. *Zamia Houtteana*, a broad-leaved distinct species; and *Dioon spinulosum*, a handsomer plant than *D. edule*, are other striking Cycads of recent discovery, and now represented by living examples at Kew.

The cultural requirements of Cycads formed the subject of an interesting and useful article published in the *Gardeners' Chronicle* on March 9, 1889, p. 298, from the pen of Mr. FRANK ROSS, whose experience at Kew and at Pendell Court made him acquainted with the requirements of these plants.

Importations of the stems of Cycads are not unknown to London auction rooms, and they sell cheaply enough. There need not be any fear as to the health of these imported plants; at any rate, those obtained in this way for Kew have, as we are informed, proved successes.

The most extensive collection of Cycads in

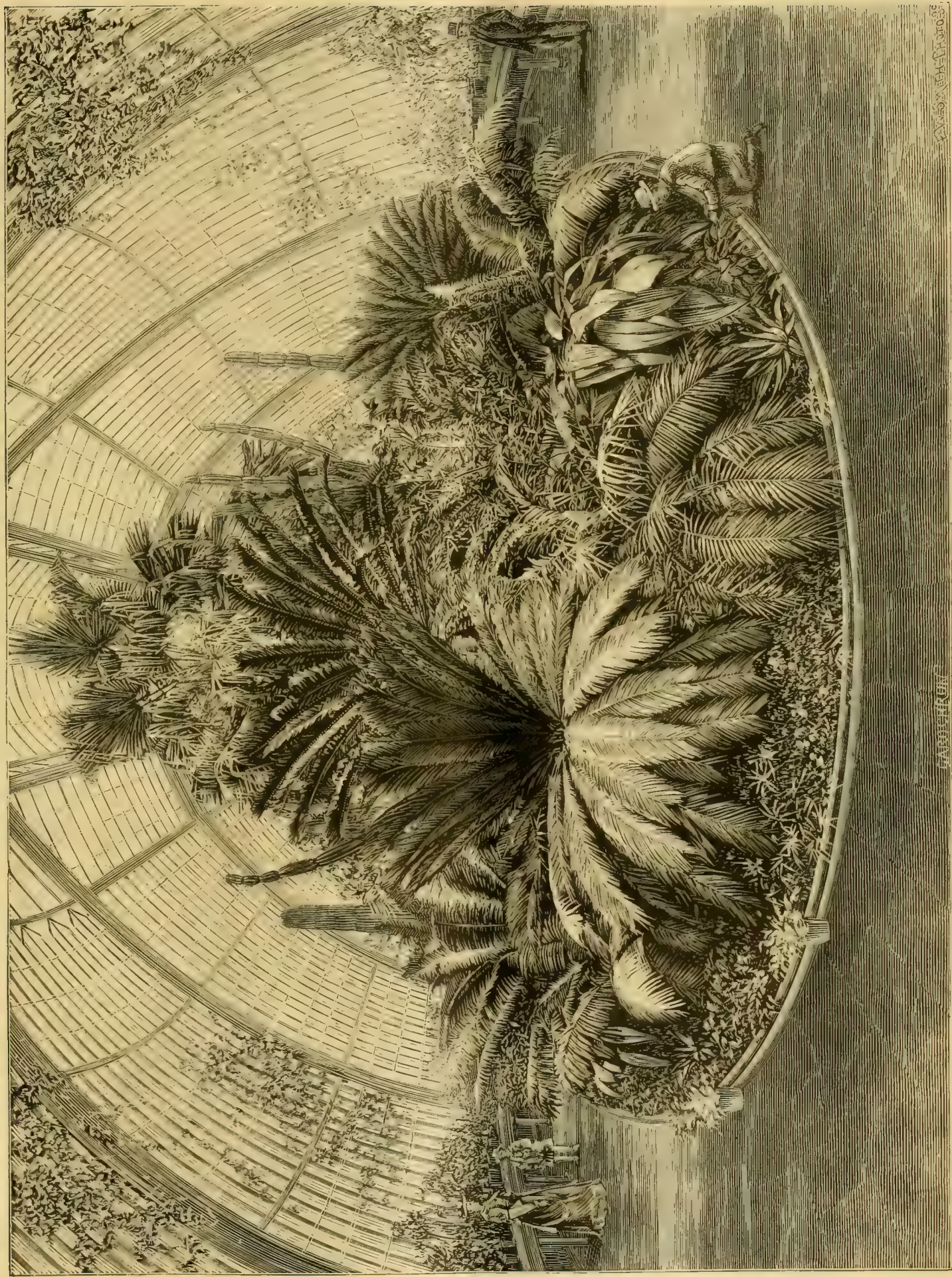
this country is in the possession of Mr. BULL, at Chelsea, who has introduced not a few of the best of them, and who has long since proved himself a successful grower and a keen admirer of Cycads generally. Some of Mr. BULL's plants have from time to time figured in our columns; but for all that, the gardening public is hardly aware of the grand subjects at their disposal. It is far otherwise on the continent. There are good collections of these plants in the Botanical Gardens of St. Petersburg, Hanover, and Berlin. Visitors to Ghent, especially at the quinquennials, are generally struck with the magnificence of these plants. Many of them are highly ornamental, even when small, as was illustrated on Tuesday by Messrs. SHUTTLEWORTH, but we were surprised to learn from Mr. WILLS that the plants are not suitable for room-decoration. Mr. CARRUTHERS' lecture, mention of which is made in another column, was well illustrated by foliage and cones from Kew. It was an admirable summary of many of the chief points of interest in this most interesting group.

The Opening of Kew Gardens.

THE agitation to secure to the general public the opening of Kew Gardens at an earlier hour than at present is one that would have

our hearty sympathy did we not know, on the one hand, that the class of persons for whom the boon is sought is the one least worthy of consideration in the matter; and, in the next place, that every reasonable facility is already given to gardeners and those who have business in the gardens as distinguished from mere sight-seeing or recreation. It is for the officers of the establishment to decide whether or not the public could be admitted at an earlier hour than at present to certain portions only of the garden without prejudice to the work of the establishment and the requirements of the students. If they say that these—the main objects for which the garden exists—cannot be met unless the public is excluded till 12 o'clock from every part of the garden, then undoubtedly the public ought to be so excluded. We believe it to be a fact, that no casual visitor who makes application at the office is ever excluded if he can show that he is a gardener, an artist, a botanist, or a student in any department of horticulture and botany desirous of using the garden. Those who study regularly in the garden are provided with tickets on application, and they have facilities for comparing, examining, and drawing specimens, which could not possibly be granted, or if granted, exercised, during the public hours. There are at present, we believe, about 1000 such ticket-holders.

The only element practically excluded, then, is the "nursemaid and children" element, and their presence in a botanic garden is hardly desirable at any time, much less so when serious work is going on. The majority of the residents in the neighbourhood, or of visitors from a distance, do not care, or are not able, to visit the garden in the forenoon. Those whose only object is recreation are already well provided for; no persons are so well supplied with recreation grounds and walks as the fortunate residents at Richmond or Kew. As we have already pointed out, there are dozens of parks, but there is but one Kew. To deprive the gardeners and the students of their privileges would be to inflict a serious damage to horticulture, whilst to reduce Kew to the level of an ordinary place of recreation, would not only cause inconvenience to students, but entail a calamity on the whole empire.



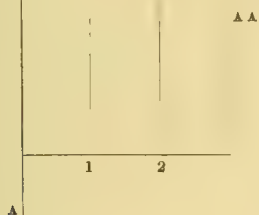
PARROTIER

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CYCADS IN THE PALM HOUSE, ROYAL GARDENS, KEW.

Influence of
Stock on Scion.

FROM the gardens at Newbattle, we have received through the kindness of Mr. MALCOLM DUNN, a bunch of Muscat of Alexandria Grapes, which has been grown by Mr. MACHATTIE on the Black Hamburg. The berries had the Muscat flavour, but were somewhat pear-shaped, pale olive-yellow, flushed with purple, especially near the base. Mr. DUNN tells us the foliage of the Muscat has much of the character of the Hamburg, especially near the stock, but is quite perceptible all the way along the rod (some 16 feet).



The diagram shows, on the left, the Black Hamburg stock (A), on a horizontal branch of which are grafted first a Muscat (1), and then a Duchess of Buccleugh (2); beyond which the Hamburg rod is directed upwards (AA), so that while it seems certain that the Muscat must derive some influence from the stock, it may possibly also derive some influence from the foliage of the Hamburg on the rod (AA). Not only the bunch sent to us, but the whole crop—nine to ten bunches—showed, we understand, the same peculiarity, and some were more highly coloured (rose or purplish) than the bunch we saw. The phenomenon was noticed at least two years ago, and Mr. MACHATTIE is of opinion that the Hamburg characteristics are gradually becoming more marked. No change has been observed in the Duchess of Buccleugh. The quality of all the Grapes produced by the Vine has been excellent.

Here, then, we have a clear case of the influence of the stock upon the scion, an influence the existence of which is so unaccountably denied by many gardeners, though if it does not exist, it becomes difficult to see why grafting should be practiced at all. Surely there is a change both in size and flavour when, for instance, certain Pears are worked on the quince?

We have recorded many such cases in our columns at various times. Some of them have been explained by the hypothesis that some sucker had grown up, or that accidentally some graft or bud was inserted of some other kind, and been overlooked. These are ingenious hypotheses certainly, but no attempt has been made to prove their correctness. The facts cannot be disputed, the explanations offered are at present hypothetical, so that for the present we lean to the facts, and to those inferences to be derived from them, which have the greatest amount of probability in their favour.

The fullest record of cases of this kind that we are aware of, is that of Dr. STURTEVANT, published in the "Transactions of the Massachusetts Horticultural Society in 1881," and reprinted in the *Gardeners' Magazine* for Dec. 10, 1881.

THE GHENT QUINQUENNIAL, 1893.—We learn that the Secretary of the Royal Agricultural and Botanical Society of Ghent, M. A. ROSSEEL, has resigned the office, and M. EDMOND CLAES that of Assistant-Secretary. M. ERNEST FIERENS, the Treasurer of the Society, one of the most notable amateurs of Chrysanthemums in Belgium, has been nominated as Secretary; and M. ARMAND DE MUELENAERE, one of the founders of the Orchidophile Club

of Ghent, as Assistant-Secretary. An exhibition hall, covering 2000 square metres will be erected in the garden for the quinquennial in April next, and by this addition the space devoted to purely horticultural exhibits will amount to 5000 metres.

ROYAL HORTICULTURAL SOCIETY.—Mr. BARON reported to the Fruit Committee, that during the operation of fruit drying, a temperature from 175° to 200° is required for Apples, and the time occupied is about three hours.

10 lb. of fresh fruit of Cellini	When Dried.
10 " " New Hawthornden	give 1 lb. 8½ oz.
10 " " Blenheim Orange	" 1 " 11 "
10 " " Frogmore Prolific	" 1 " 12 "
10 " " Lord Suffield	" 1 " 9 "
10 " " Small's Admirable	" 1 " 2 "
10 " " Beauty of Hants	" 1 " 3 "
10 " " "	" 2 " 4 "

The parings and cores have to be added to the weight of the dried fruit when calculating the exact reduction by evaporation. For Plums the temperature required is about 250°, and the time taken is from eight to ten hours. The committee marked their approval of the success of the experiments by recommending a Silver-gilt Medal to Messrs. MAYFARTE & Co. for the apparatus, with the expression of their great satisfaction at the results achieved.

THE BRUSSELS ORCHIDÉENNE.—At the thirty-ninth meeting, on October 9, of the Brussels Orchidéenne, Botanical Certificates were awarded to *Isochilus graminifolius*, from M. Linden; and *Epidendrum* sp., from M. Garden. First-class Diplomas of Honour for *Odontoglossum Inseayi* var. *Imshootianum*, from M. A. van Imshoot (unanimously); and *Cypripedium* × *Warocqueanum*, from M. G. Warocqué (unanimously). First-class Certificates of Merit were adjudged for *Odontoglossum Inseayi leopardinum*, from M. A. van Imshoot; *Cattleya aurea*, from the same exhibitor; *Dendrobium formosum giganteum*, from M. F. Pauwels; *Cattleya chrysotoxa*, from M. Linden; and *C. Loddigesii violacea*, from M. A. van Imshoot. Second-class Certificates of Merit for *Miltonia candida grandiflora*, from M. A. van Imshoot; and *Cattleya Warocqueana*, from M. Linden; and First-class Certificates for Culture for *Cypripedium oenanthum superbum*, from M. G. Warocqué (unanimously and by acclamation); *Oncidium ornithorhynchum*, from M. Ch. van Wambeke; and for *Lælia Dayana*, from M. G. Warocqué.

PRESENTATION AT LOCKINGE HOUSE, WANTAGE.—Before giving up the charge of the gardens at Lockinge, Mr. J. ROSE, who had occupied the position for nine and a half years, was the recipient of some substantial marks of goodwill by his employers and others. Lord and Lady WANTAGE gave him a handsome silver biscuit-box, with a note expressive of their good wishes for his future welfare; from the under-gardeners came a marble clock; from the upper servants at Locking a dozen silver tea-spoons and a pair of sugar-tongs; and from the cricket club a handsome cruet-stand—this latter being presented by Lord WANTAGE, at a full meeting of the members and villagers. As has been mentioned in garden appointments, Mr. ROSE has now gone as head gardener at Wokefield Park, Reading.

A NEW PREVENTIVE FOR PLANT MILDEW.—Some years ago Mons. PELIGOT, in a communication to the Paris Academy of Science, pointed out that boric acid exercised an injurious action on Beans (vide *Comptes Rendus*, lxxxviii. p. 686), but the observation was forgotten, or, at least, was not recognised as capable of being applied to any practical purpose. In the course of some recent experiments on germination, Mons. J. MOREL reviewed the literature of the subject, and alighting upon this old observation proceeded to repeat the experiment. He then inquired into the action of various strengths of boric acid solutions upon Beans and Wheat. His conclusions are given in a memoir recently communicated to the Paris Academy of Science. He finds that boric acid has the effect of delaying or of completely preventing germination, according to the duration of its contact with the seed, and also to the strength of the solution employed. Wheat appears to resist the action of a boric acid wash

better than does the Bean. Borax, which is cheaper than boric acid, acts in a similar manner. It seems probable that these experiments may result in a practical application of great importance to horticulturists as well as to agriculturists, for when applied in very dilute solution, borax or boric acid does not injuriously affect the seed, but will completely arrest the development of various fungoid growths such as mildew. Experiments, we understand, are now in progress with the object of deciding what is the proper strength of solution to employ under varying conditions. Should Mons. MOREL's expectations be realised, then boric acid and borax may rank with, or even supersede, sulphate of copper (blue vitriol) as a preventive of mildew and similar growths.

FERMENTATION OF FARMYARD MANURE.—In a heap of ordinary farmyard manure complicated fermentations are in progress, and the rate at which they proceed depends upon the conditions of moisture and temperature which are present. The water furnishes the oxygen and hydrogen necessary for the formation of carbonic acid gas and ammonia, and the temperature determines the activity of the microscopic organisms which are really the cause of the fermentation. A recent paper by Herr T. SCHLÖSING, in the *Annales Agronomiques* (vide xviii., pp. 5 to 18), contains much information about the action of manure that is new, and some too that is merely confirmatory, though none the less valuable on that account, of the theories that are to be found in Aikman's little work on farmyard manure. In that part of a manure heap to which the air has access, as the temperature rises gradually owing to the aerobic fermentation, a purely chemical oxidation sets in, which goes on with increased rapidity after the heat has risen high enough to kill the microbes, and thus stop the fermentation which they are the cause of. It seems that there is a considerable production of ammonia during the fermentation which is not fixed in organic compounds, and is thus lost to the horticulturist who proposes to make use of the manure. Hence, care must be taken that the temperature does not rise too high, and this, perhaps, can be best governed by forking over the manure if it shows signs of getting too hot.

COLOURED LEAVES.—The great beauty at this season of many of the Maples, such as the Sugar Maple, the Norway Maple, the Red Maple, the Colchic Maple, Schwedler's Maple, and various others, always excites attention. We are reminded of them, moreover, by the receipt from Messrs. MAURICE YOUNG & SON, of Godalming, of sprays of various forms of the Norway Maple, *A. platanoides*, and especially of their form of the purple variety, the leaves of which, in spring, are of a deep purple colour, greening in summer, and turning to a brilliant crimson in the autumn, thus having an advantage over the nearly-allied Schwedler's Maple, which loses some of its beauty in autumn. Why planters do not avail themselves more of the various Maples we cannot imagine; they are beautiful at all seasons. It is not for want of telling—the Press is not backward in giving prominence to anything good, but it must be because people do not go and see for themselves, in the nurseries and parks.

A HORTICULTURAL SHOW AT VICTORIA.—We have a report before us of a flower show, held on August 25 of this year, in the Athenæum Hall, Collins St., Victoria. According to the reporter of the *Melbourne Argus*, the exhibition was an ill-arranged one, occupying the ground floor and a room on the first-floor; and the pathways were narrow, as were the benches in the lower floor, for showing off the plants, &c. The upper room afforded more space for promenading, and there was room for all the exhibits to be seen to advantage. It was a bulb and general exhibition, and Orchids were present in great numbers, and in some instances of large size and plentifully furnished with blossoms. A plant of *Cattleya Trianae* carried twenty-four blossoms; *Phalænopsis Schilleriana* was large and well-bloomed; *Schomburgkia undulata* had flower-stems, 6 feet

high; *Cypripediums*, *Dendrobiums*, *Angræcum sesquipedale*, *Saccolabium giganteum*, and other Orchids, in variety, were shown by different exhibitors. The usual species of tropical foliage plants that are cultivated in this country, find a place in the gardens of our countrymen in Australia; but it is less excusable that they should be found growing for the decoration of the greenhouse, the *Cineraria*, *Azalea*, *Calla æthiopica*, Chinese *Primulas*, and *Primula polyanthus*, and neglecting the numerous beautiful plants of their own country, scarcely one of which, if except *Dracanas* being mentioned in the report as having been shown. The fashion in gardening, at least in regard to the species of plants grown in pots, seems to be as faithful a reproduction as is possible of that which prevails so monotonously in the old country, even to the mode of decorating a dinner-table, filling an epergne, or making a spray for *SOPHONISBA'S* hair.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—At the meetings of the Society on September 14 and 28, the committee awarded the following: First-class Certificates to Messrs. E. H. Krelage & Son, of Haarlem, for *Gladiolus* hybr. *Lemoinei*, Leonard Kelway (introduced new plant); *Gladiolus* hybr. *Lemoinei*, Reverend W. Wilks (introduced new plant); *Gladiolus* hybr. *turicensis* (introduced new plant); *Kniphofia comosa* (insufficiently known plant); *Kniphofia hybrida* *Leda* (new plant); *Kniphofia hybrida* *Sirius* (new plant); *Montbretia crocosmiæflora*, Feu d'artifice (introduced new plant); to Mr. C. G. Van Tubergen Jr., of Haarlem, for *Colchicum Sibthorpii*, Baker (introduced new plant); *Nerine flexuosa*, Herb. var. *cœrulea* (introduced new plant); *Nerine elegans*, Hort. var. *cœrulea* (introduced new plant); *Nerine O'Brienii*, Hort. var. *lilacina* (introduced new plant); *Nerine sarniensis*, Herb. var. *corusca pallida* (introduced new plant); *Nerine sarniensis*, Herb. var. *Plantii* (introduced new plant); *Nerine sarniensis*, Herb. var. *insignis* (introduced new plant); to Mr. J. Walraad, Jr., of Boskoop, for *Abies Nordmanniana pendula* (new plant).

Second-class Certificates were awarded to Messrs. Groenewegen & Co. of Amsterdam, for *Nicotiana colossea*; to Messrs. E. H. Krelage & Son, of Haarlem, for *Dahlia* (Cactus), *Blushing Bride*; *Dahlia*, Mrs. Cock; *Dahlia* (Cactus), Garten director Siebert; *Kniphofia hybrida* *Solfatare*; *Kniphofia hybrida*, *Diana*; to Mr. H. D. Willinck Van Collen, of Breukelen, for *Echinacea purpurea* (insufficiently known plant); to Mr. L. Zuurendonk, of Haarlem, for a collection of *Coleus* hybr.; to Mr. C. G. Van Tubergen, Jr., of Haarlem, for *Canna*, Jules Chrétien (new plant); *Kniphofia* hybr. *John Waterer*; *Nerine amabilis*, Hort. var. *grandiflora* (introduced new plant); *Nerine humilis*, Herb. var. *splendens* (introduced new plant); *Nerine hybrida* *rosea* (introduced new plant); *Nerine sarniensis*, Herb. var. *corusca compacta* (insufficiently-known plant).

A Botanical Certificate was adjudged to Messrs. E. H. Krelage & Son, of Haarlem, for *Biarum Russelianum* Schott (introduced new plant).

Votes of Thanks were passed to Messrs. Groenewegen & Co., of Amsterdam, for *Helianthus latiflorus*; to Messrs. E. H. Krelage & Son, of Haarlem, for *Alstroemeria patricina*, Frans Hals, Rembrandt, Van der Helso, Wouwerman, *Gladiolus* hybr. *Lemoinei*, Favorite, G. hybr. *nanceianus*, Kleber, G. hybr. *nanceianus*, President Carnot, *Helianthus latiflorus*, H. levis, H. strumosus, *Dahlia* (fl. simpl.), Duchess of Fife, and Mrs. W. C. Harvey; to Mr. C. W. R. Scholten, Jr., of Amsterdam, for *Crinum speciosum*, C. spec. *Venezuela*; to M. C. G. Van Tubergen, Jr., of Haarlem, for a collection of bulbous and tuberous plants, and nine species and varieties of *Nerine*; to Mr. H. D. Willinck Van Collen, of Breukelen, for *Heliopsis lævis*, *Polygonum compactum* and *Phytolacca acinosum*.

THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the session 1892-93 will be held on Monday, November 14, 1892, when the President, Mr. CHARLES J. SHOPPEE, will deliver

an opening address. The chair will be taken at 8 o'clock.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.—A lecture on the construction and heating of greenhouses was given by Mr. CLARKE at the last meeting of the above Society, at the Memorial Hall, Farringdon Street, on Friday, October 14. A proposal to carry out one of the original objects of the National Amateur Gardeners' Association, namely, to hold a large exhibition of flowers, &c., in the City in 1894, is under consideration by the executive.

STOCK-TAKING: SEPTEMBER.—At first blush the figures presented by the Board of Trade Returns for the month of September are dispiriting. As to the imports side of the summary, the falling off is more in appearance than in reality: values have gone down (take Wheat, for instance) with a rush, as traders know, occasionally also the home consumer. For all that, trade in various industries is depressed, and capitalists are also suffering. In many cases lost ground is being recovered; and as hope springs eternal in the human breast, so we contrive to look forward for a better state of things at an early date, and to endeavour to achieve this. From the "Summary" of imports for the past month we take the following figures:—

IMPORTS.	1891.	1892.	Difference.
	£.	£.	£.
Total value for month	£34,089,301	£31,485,305	-2,603,996
§II.—(A.) Articles of food and drink—duty free ...	12,571,013	12,127,503	-443,510
(B.)—do., dutiable	2,967,724	2,520,935	-446,789
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	3,360,072	2,228,117	-1,131,955
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,029,509	4,073,661	+44,152
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,196,565	1,007,458	-189,107
(B.)—Parcel Post ...	29,931	31,672	+4,741

From this it will be seen that the decrease in value is £2,603,996—the returns for the nine months show a gain in value of £696,337 as compared with the corresponding period last year. Incidentally, it may be noted, that we import from India some million tons of Wheat per annum, on the average of the past few years. Concerning the imports of fruit and vegetables, we make the following extracts:—

IMPORTS.	1891.	1892.	Difference.
Fruits, raw:—			
Apples ... bush.	197,478	405,825	+208,347
Cherries ... ..	...	150	+150
Plums ... ..	...	109,699	+109,099
Pears ... ..	...	197,493	+197,493
Grapes ... ..	...	195,135	+195,135
Unenumerated, ..	788,184	122,137	-666,047
Onions	495,083	503,284	+8,201
Potatoes ... cwt.	49,825	87,555	+37,730
Vegetables, unenumerated, raw, ... value	£90,204	£91,211	+£1,007

The capacity of the British maw for this class of produce grows year by year—certainly a very gratifying matter of records. The "juniors" will not be overpleased to learn that a mildew has attacked and destroyed about a third of the Greek Currant crop—the "seniors" will reckon on the extra price for the remaining two-thirds!

EXPORTS FOR SEPTEMBER

show advance in value amounting to £1,688,684, as compared with September, 1891. Of course, the reader knows pretty well by this time that comparison with the past two years are, taken by themselves,

misleading—they were periods of inflation—rushing goods into the American and French ports in anticipation of an alteration in the Customs' duties. There is also to be noted that one of our customers—Japan—is fast becoming independent of exterior help in the production of many kinds of goods: in twelve months our exports to that region have fallen off nearly a million sterling. One export is worth special mention—that of silk to the Continent, for the purpose of being "thrown," the folks here being unable to do all of the work required. Considering the rapid strides now being made in this trade, manufacturers might endeavour to save this expense of export and import. Very satisfactory is it to note that the value of the exports to the United States last month reached £1,557,000, or an increase of nearly £300,000, on September, 1891; and a decrease of £519,000 compared with September, 1890. The working of the Melain (French) Tariff is just now receiving a practical illustration. The wine crop is short this year; in such circumstances it is usual to fall back on Spanish wines; the latest thing in tariffs places these out of reach; Currants would do instead—as noted above, the mildew has settled that against the French manufacturer or grower, so far as Greek Currants are concerned. It will be interesting to know how the crop will ultimately be made good. As the Indian Cotton crop for this year is reported to be a bad one, Lancashire may benefit by-and-by in the matter of exports of cotton goods, of which we may have to make a note in future "Stock-taking."

TECHNICAL INSTITUTE, DUNDEE.—The Dundee Horticultural Association, having for its aims the advancement of the science and practice of horticulture, will give a course of about twenty lessons and demonstrations, to commence in the Technical Institute on Monday, October 17, at 8 o'clock. The class will be conducted by Mr. D. STORRIE, who has been strongly recommended to the committee as a skilful and enthusiastic botanist and horticulturist. The introductory lecture will be free, and all gardeners or others interested are cordially invited. Mr. D. CROLL, president of the Horticultural Association, will occupy the chair. Professor GEDDES will give a course of one lecture weekly on botany during the summer term.

NATIONAL CHRYSANTHEMUM SOCIETY.—The conference on the suggested enlargement of Show-boards for Japanese Chrysanthemums, took place in the Library of the Royal Aquarium on October 12. Sir E. SAUNDERS, President, in the chair.

GARDENING LECTURES.—Mr. J. V. DUTTON has been appointed to give twenty-four lectures on the application of scientific knowledge to practice, at Waltham Cross.

KENT COUNTY CHRYSANTHEMUM SOCIETY.—We are informed by Mr. H. J. JONES, Hon. Sec., that at the fifth annual exhibition of this well-supported Society, to be held on Tuesday and Wednesday, November 1 and 2, at the Rink, Blackheath, more than £100 will be distributed in prize-money. The best prizes, those for the finest thirty-six blooms, will be £10, £7, £4, and £2.

CHISLEHURST GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—The members of the above Association held their second annual meeting on Tuesday, October 4. The Secretary, having read his report and balance-sheet, which showed the Association to be in a flourishing condition, it being entirely supported by members' contributions, and after paying all expenses, a balance was left in hand. The Association has been recognised as filling a want long felt by the gardeners in the locality as a means for the better exchange of ideas on gardening subjects, that many an expression for its continuance was expressed. The election of officers, alteration of rules, &c., occupied the greater part of the evening. Afterwards promises of several papers were given, and the subjects promise to be of great interest. The Association meets every Tuesday evening, commencing the first Tuesday in October until the last in March.

THE ACTION OF THE ULTRA-VIOLET RAYS ON THE FORMATION OF FLOWERS.—This was the title of a paper read recently before the Physical and Natural History Society of Geneva, by M. CASEMEIR DE CANDOLLE, botanist, on September 1 last. The following is an abstract of the paper:—"Professor J. SACHS expressed his opinion in the year 1886 that the action of the ultra-violet rays was indispensable to the formation of flowers. The plants experimented with by Professor SACHS were *Nasturtiums* (*Tropaeolum majus*), since they can easily be cultivated in a dark place. His plan was to place several pots of the plants raised from seed, in large boxes, all the sides of which were impervious to light except one which alone admitted the light into the interior. To effect this, the side is fitted with a groove in which a colourless glass tube is inserted, on whose surface parallel lines have been ruled. The boxes are then placed in pairs side by side, and the tubes of one pair filled with pure water, while the other tubes contain a solution of sulphate of quinine which, though intercepting the ultra-violet rays, does not appreciably diminish the interior lighting of the box. The glass of the tube, which was very thick, would no doubt, of itself stop a portion of the ultra-violet rays, but we know that this absorption by the glass only affects extreme radiations exterior to the line N. of the spectrum. SACHS repeated these experiments during the summers of 1883, 1884, and 1886. The first time the boxes were placed on a window-sill facing the east, so that the plants received direct exposure to the sun during part of the morning. After sixty-two days (from June 15 till August 17), the two *Nasturtiums* which received the light through the tube containing water were found to be in full flower, while one of the plants cultivated behind the sulphate of quinine had produced no flower, and two others had only a few withered buds. In 1884 two boxes were placed in an easterly direction and two others in a southerly. This time the results were less accurate, as the sulphate of quinine turned mouldy. The plants behind the water flowered as before, but as the quinine turned a yellow colour, the plants behind it bore a certain number of flowers also. This proves that the plants will certainly flower if the light is conveyed to them through a liquid not nearly so transparent as water. On the next occasion SACHS managed to prevent mildew by adding a little sulphuric acid. The results were as follows: twenty plants receiving their light through the water produced fifty-six flowers in all, while the twenty-six plants behind the quinine produced only one flower of miserable appearance and a few buds. This time all the boxes were placed facing the north. SACHS was thus led to the conclusion that the ultra-violet rays produce in the leaves the substances necessary to the formation of the flowers. The experiments made by M. DE CANDOLLE began in 1889. The apparatus used was somewhat similar in design to that employed by SACHS, only much more elaborate in detail. Each pot contained two plants, and two pots were placed in each box. In order to prevent mildew, M. DE CANDOLLE renewed the quinine several times during the period of experiment (i.e., June 17 and August 29). His results were as follows:—The box with the pure water:

Number of leaves, 87 in one pot; in the other pot, 112.
Number of buds, 12 in one pot; in the other pot, 21.

On the other hand, the box with the quinine gave:

Number of leaves, 90 in one pot; in the other pot, 75.
Number of buds, 0 in one pot; in the other pot, 0.

The plants used this time were the "dwarf" *Nasturtium* instead of the "giant" used by SACHS. After these experiments M. DE CANDOLLE determined to try the action of the rays on the *Lobelia* (*L. erinus*). Many of these plants can be cultivated in the same box, and they have the advantage of flowering more quickly than the *Nasturtiums*. At the conclusion of the experiments M. DE CANDOLLE came to the conclusion that the loss of the ultra-violet rays lessened very considerably the flowering properties of the *Lobelia* without entirely suppressing them. These experiments could not be compared with those on the *Nasturtiums*, as this time aesculin was employed

instead of quinine. Now, even if the different experiments related above can be made to prove that the ultra-violet rays (included in the rays H and N of the solar spectrum), favour the flowering properties of certain kinds of plants, we are still in ignorance of the manner in which they act. Is it, as M. SACHS holds, by promoting in the leaves the formation of special substances of a reproductive quality, or are we to suppose that these rays can exercise a stimulative influence on the plants either by producing in the tissues some chemical reaction, or in a more direct way by augmenting the living force of the protoplasm, and causing influences which would transmit themselves step by step from the parts receiving the light to those which received none, such as the roots and the interior of the buds? It would be interesting to know if those of the ultra-violet rays which are absorbed by the glass, do or do not exercise an influence on vegetation. To carry out this research it would be necessary to light the plants in cultivation through quartz, an arrangement which would be difficult to effect in an apparatus of a large size.

INFLUENCE OF THE NATURE OF THE SOIL ON POTATOS.—Some careful experiments have during the past season been conducted by RAULIN in order to obtain some further data as to the influence of the nature of the soil on such vegetables as the Potato. He grew some samples of the Early Rose in the following kinds of soil:—

- A, a mixture of equal parts of B, C, D, and E.
- B, turf soil containing 64 per cent. of humus.
- C, soil containing 73 per cent. of limestone.
- D, earth containing 47 per cent. of clay.
- E, soil containing 75 per cent. of sand.

One-half (0.5 are) of each patch was treated with a quantity of a chemical manure containing—

Phosphoric acid	0.80 kilograms.
Nitrogen (as ammonium sulphate)	0.70 "
Potassium (as sulphate)	0.80 "
Plaster	1.00 "

The Potatos were planted in April, and gathered in September. The weights of the resulting tubers are given in the following table:—

With manure.	Without manure.
A, 203.40 kilograms per are.	A, 148.00 kilograms per are.
B, 146.10 " " "	B, 57.90 " " "
C, 125.90 " " "	C, 72.60 " " "
D, 73.10 " " "	D, 25.00 " " "
E, 43.50 " " "	E, 10.60 " " "

Twelve lots of nine tubers each were planted in soils of widely-ranging composition in order to discover the soil of maximum fertility. This seems to consist as follows:—

Clay, 2.64 per cent.	Sand, 67.20 per cent.
Humus, 23.30 " "	Limestone, 6.88 " "

So here we have, according to RAULIN, what may be termed an ideal soil for Potato growing. For further details, vide *Comptes Rendus*, xiv., pp. 1119—1122.

1 kilogramme equals about 2½ lb. avoirdupois.
1 are equals roughly an English acre.

COMPLIMENTARY DINNER AND PRESENTATION.—On the 13th inst. a few personal friends of Mr. W. MARSHALL among the judges and exhibitors at the recent shows at Earl's Court, invited him to dinner in the Exhibition Building, by way of showing their appreciation of his exertions in assisting to make the various shows held there successful. Mr. Harry Turner, who presided, was supported by Messrs. J. Wills, J. Laing, H. Williams, P. Barr, H. Herbst, W. Poupart, J. Walker, A. Turner, B. Wynne, R. Dean, and others. In the course of the evening the Chairman presented Mr. Marshall, on behalf of certain friends with a charming Orchid picture, from the Art Gallery, painted by Miss Macfarlane, the subject being an antique Spanish vase, containing blooms of *Brassavola Digbyana*, and *Cypripedium barbatum*, with a flower of *Rose Gloire de Dijon* at the base. Mr. Marshall, who was evidently much gratified by the gift of the picture, suitably responded, alluded to the success of the various shows, and of the International Exhibition itself, and expressed his belief that the gardening charitable societies would be remembered when the accounts were made up.

PUBLICATIONS RECEIVED.—*Das Kleine Haus mit Garten.* LOTHAR ABEL, Vienna, Pesth and Leipzig. (A. HARTLEBENS, Verlag.)—*The Ironmongers' Chronicle.* No 1, Vol. I. Published at 139 and 140, Fleet Street, E.C.

HOME CORRESPONDENCE.

PLANTING APPLE TREES IN HEAVY SOIL.—The time for commencing to plant fruit trees will soon arrive. Sometimes, from lack of experience and what it teaches, mistakes are made in planting the trees in heavy soils, in such a way that in six months afterwards the roots are too deep to admit of the best results. Instead of filling in the deeply-dug holes quite up to the level of the natural soil, or 6 inches above it, before putting the tree in position, they are planted so that they may look well at the beginning. I have a good example of the desirability of keeping certain kinds of Apples higher than the natural level in the garden at this place. Two years since, a bush of the Schoolmaster Apple was planted with others in the kitchen garden in such a manner that at the present time the bush is just on a level with others in the garden, and, as one would think, the roots at the right depth. The fruit on this bush is much cracked and otherwise disfigured, presumably by reason of the roots being too deep, and consequently in an ungenial medium. In another part of the garden a tree of the same variety affords a striking contrast to this one. This tree was removed to its present site last October, and was raised fully 1 foot above the adjacent level, a good-sized mound, in fact, being raised about the tree, made-up mainly of the staple—a retentive heavy loam—to which were added decayed vegetable refuse and wood ashes. The roots were mulched during the summer with stable-manure in a partly rotted state. The fruit borne by this tree affords a great contrast to that from the bush, not a speck or crack being visible, but perfect in every way. Some varieties of Apples are able to withstand the evils of deep planting, while others can barely exist at all; it being difficult to ascertain which these are, without testing them, it is the safer plan to plant them on raised mounds where the soil is heavy. E. M.

TUBEROUS BEGONIAS UNDER TREES.—A bright spot, created by a quantity of tuberous Begonias, in good bloom, and quite unharmed by frost, was observed a few days since at Mr. B. R. Davis' Nursery, Yeovil, whilst everywhere in the open the plants had been cut down by the frost of September 18, which was severer in Somersetshire than around London. Here, beneath a broad-headed purple-leaved Beech, the Begonias were fresh and beautiful. This fact would admit of two useful lessons—first, that Begonias can be made to do well beneath trees if the soil be well made, and the lower branches are some 15 feet from the ground; second, that in thus planting Begonias, it is possible to have them blooming freely fully one month later out-of-doors than in the unsheltered open ground. It was something of a surprise to one well accustomed to see the wealth of Begonias found in some London nurseries or near the metropolis, and believed that these alone were the cream of the strain, to find such a splendid strain, or rather strains, so far from London. I was taking a quiet walk round Yeovil streets when I came across this Begonia nursery. There can be no question whatever as to the merits of the Yeovil strains, and, as elsewhere, they are being continually cross-fertilised for the production of variations. The flowers shown recently at the Drill Hall evidence the progress being made in evolution in Begonias. A. D.

NARCISSUS BROUSSONETII is very beautiful, and apparently a very free flowerer. I have it now in bloom, four scapes, each with a head of six or eight large pure white flowers. This is the second time the bulbs have flowered since I had them, and the bloom is more ample, and in every way better this second time than it was the first. M. F.

ROSA RUGOSA.—In your paper of October 8, Mr. Smith, of Daisy Hills, Newry, says there are two kinds of *Rosa rugosa*, one with large foliage and fruit, the size of a large Plum; the other no bigger than a Red Currant, the foliage correspondingly smaller. The typical form has fruits of the shape of the earth, but flattened at the poles. *R. r. pyriformis* has small leaves and pear-shaped fruit, thorns of both

sharp. I beg to say that I have two trees of *Rosa rugosa*, one has pink flowers, and the other white; the leaves of both are the same size, and until this year the white flower also had a bright yellow fruit as large as the pink one, but this year the fruit of *Rosa r. pyriformis* is also dark red. The trees are on the same border, and the soil is the same; they are sheltered from the north by a south wall. I send you some leaves and fruits, and shall be obliged for any information to make No. 2 bear yellow fruit. No. 1 has thrown out two fine suckers, which have borne flowers and fruit this season. *M. T.* [We do not know how to advise you. Ed.]

THE EARLY RIVERS NECTARINE.—I hope gardeners will show how they appreciate Mr. T. F. Rivers' kind offer "by subscription" of the above grand new Nectarine. To gardeners who have not seen the fruit but know Lord Napier Nectarine, I may say, Early Rivers is even better in size, a good colour, free bearer, fine flavour, and three weeks earlier than Lord Napier. Just imagine us sending to London in first week in May such fine fruit, or in April, if asked for. *Jas. Hamilton, Byrkley Gardens, Burton-on-Trent.*

PELARGONIUM PRIDE OF TRENT.—Last season, I believe, Mr. Geddes of Thrumpton Hall Gardens had a letter in the *Gardeners' Chronicle* calling attention to the great effectiveness of a scarlet-crimson bedding Pelargonium, raised by Mr. Anderson of Clifton Hall Gardens, called by him Pride of Trent, and which was being used with much satisfaction in the flower garden at Clifton Hall. Not having personally seen it bedded out, I paid a visit to Clifton about a week ago, and, though the weather was very unfavourable—indeed, the usual weather we have had lately, wind and rain in pretty considerable force and quantity—what I saw there enables me to endorse and emphasise all that Mr. Geddes said last year. It is a scarlet crimson; the crimson in it being something like that of Henri Jacoby, but the scarlet colour in Pride of Trent adds to it a superiority in attractiveness over Messrs. Pearson's excellent variety, and causes it to be conspicuous wherever the eye lights upon it. It attracts at once, and satisfies. One of its chief merits—a very great one, as all flower-gardeners know—is its weather-resisting properties; for, though there had been drenching rains before, and during my visit, which had robbed the flower garden of much of its summer glory, specially as to Pelargoniums, the beds of Pride of Trent had a brightness about them which made them noticeable even to the ordinary observer. Pride of Trent is certainly a scarlet-crimson Pelargonium we ought to hear more of, and all his neighbours hope that Mr. Anderson may see his way towards putting it into commerce. *D. J. Graham, Forest House Gardens, Nottingham.*

THE WINTER MOTH AND THE WILLEDEN PREPARED PAPER.—The Willesden Paper and Canvas Company inform me that they have many applications for their canvas and prepared brown paper for use on fruit trees against the winter moth, and ask for particulars as to mode of use. We use their "Brown Canvas DD extra," cut into strips, 4 inches wide, and prepared brown paper of the same width; the paper is put round the stem of the trees about 1 foot from the ground, and kept in its place by tarred twine; the canvas is then placed over it and secured in the same way; common cart-grease, without tar, is then spread over, this catches many females (wingless) of the winter moth and some other moths; more cart-grease should be added from time to time when it dries. Our Apple, Quince, and Damson trees were much injured till we adopted the above remedy, and have been all right since. The bands should be on before the end of October. *George F. Wilson.*

THE LATE MR. BULLEN, GLASGOW BOTANIC GARDEN.—There is a peculiarsadness in the sudden removal of our late friend Mr. Bullen, a man so estimable, who enjoyed the respect of a wide circle of friends, and whose career was a marked success. By his great tact and indomitable perseverance, Mr. Bullen piloted the Glasgow Botanic Garden through untold difficulties, and seemed to have attained the zenith of his triumph when the end came so suddenly. There is not a horticulturist in the North whose popularity surpassed that of the late Mr. Bullen. His urbanity, courtesy, and kindheartedness to everyone with whom he came in contact was proverbial in and around Glasgow. I was conducted last summer by Mr. Bullen with some friends, through the spacious glass structures of the Botanic Garden, and was struck with the health, clean-

liness, and good culture shown by all the plants under his charge. When I last saw him it was at the Autumnal Horticultural Exhibition held in Glasgow, where he seemed to have an exalted position among his fellows, and his kindly greeting to all and sundry, attached to him many friends. He never hid his stores of horticultural knowledge, but was always communicative to all enquirers. The world is rendered poorer by the loss of such a man; and we all deeply regret that we shall see his genial face no more. *M. Temple.*

GALEANDRA NIVALIS.—*Apropos* of this species, I may remark that we have had it in bloom for the last six weeks, and that it flowers every year. *J. Tabor, Ashford, Kent, October 12.*

PEACH TREES AND DRY BORDERS.—I write to thank you for answering my question on Peaches, and to say I found the cause was that the trees were planted more than 2 feet deep, and were in bad sub-soil, and although I had afforded the soil many gallons of water, it had never penetrated to the roots. These were cankered and many dead, and the soil looked as if it had had no water since the trees were planted, which must have been a good many years ago. I have written this thinking perhaps it might afford a hint useful to others who may be wondering why the buds fall, and the trees do badly. *George Hazell, Vale Mascal, Hollington Park, Hastings.*

CHANGES IN YORKSHIRE GARDENS.—It may be of interest to note that changes occurring in Yorkshire gardens show the somewhat long services of the three gardeners now leaving—I allude to Harewood House, Leeds, where Mr. James Fowler has been thirty-six years; Studley Royal, Ripon, where Mr. John Clarke has been about thirty-four years; and Newby Hall, Ripon, where Mr. Wilkinson has lived about thirty-five years. The three estates are not very far distant from each other. Mr. Fowler has entered into business as a seedsman and florist with his son, who has been trained to the business, as manager. Mr. Clarke and Mr. Wilkinson retire from active service, and all of them are well known and respected in gardening circles hereabouts. Mr. Clarke, in particular, has been long known as an excellent gardener, and an estimable man in all the relations of life. As one proof of his capacity and honesty of purpose, I may mention that for some twenty-eight years he has been selected as a judge at one of the largest local horticultural exhibitions. I feel sure he will carry into his well-earned partial retirement from active service the respect and good wishes of all his numerous Yorkshire friends and acquaintances, and who reside in many parts of the country. It may be necessary to add, that successors to each have been appointed. *Yorkshire Gardener.*

CROCOSMA.—Was this or *Crocasmia* the name given to the plant formerly called *Tritonia aurea* when made into a separate species? *Genera Plantarum* has "*Crocasma*," referring for authority of the name to Planchon's *Flore des Serres*; but Nicholson's *Dictionary*, and nearly all catalogues have "*Crocasmia*." No doubt the word is meant to signify "smelling of Saffron," and we might expect it to follow the analogy of "*Coprosma*," "*Diosma*," and one or two similar names coined by botanists, which were made by them of the feminine gender. The only classical model of such a plant-name is *Onosma*, which is of the neuter gender, as all words ending in "ma" are in Greek. This word has probably nothing to do with smell, its origin, and the plant to which Dioscorides applies it, being altogether uncertain. *C. Wolley Dod, Edge Hall, Malpas.* [We have not Planchon's original description at hand, but, we believe, he spelt the name erroneously as *Crocasmia*. Ed.]

LARGE TREES.—Your correspondent, Chas. C. Hurst, in this week's *Gardeners' Chronicle*, asks for measurements of large trees. I may say, there is in the garden here a Plane measuring 19 feet round the stem, 6 feet from the ground (which is the smallest part of stem), and from the stem to the end of the branches on either side, 50 feet, and it is about 100 feet high. *H. T. Brasier, Palace Gardens, Ely.*

IRIS NEPALENSIS.—Mr. Baker has kindly called my attention to a form of *I. nepalensis*, described recently by Collett and Hemsley (*Journ. Linn. Soc.*, xxviii., No. 189—191, p. 136), as found in Shan Hills, of which I regret to say I was ignorant. Mr. Baker suggests that this is identical with the var. *Letha*, which I described in last week's *Gardeners' Chronicle*.

It is possible this is so. But the authors in question describe their plants as a depauperated form, 3 to 4 inches high. My plant so far from being a depauperated form, is much more vigorous than the type, and the leaves are a foot or even more long, though the flower is sessile. Moreover, the full-grown leaves show none of the purple lines and dots spoken of by Collett and Hemsley, and I do not remember noticing them in the very young leaves. My plant is so distinct from the type in general aspect, that many would not hesitate to consider it a new species; it ought at least to have a varietal name, and since Collett and Hemsley did not think their specimen worthy even of this, I suppose the name I have suggested holds good. *M. Foster.*

FINE POTATOS.—It might interest some of the readers of your valuable paper to know that when digging up our Magnum Bonums last week, we came across two fine specimens, one tuber weighed 2 lb. 10 oz., the other 1 lb. 14 oz. The whole of the Potatos were very fine. *A. Bagg, Bishop's Hall, Romford, Essex.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

OCTOBER 4.—Present: Dr. M. T. Masters in the chair; Mr. Morris, Mr. McLachlan, Mr. Blandford, Dr. Müller, Rev. W. Wilks, Dr. Scott, Dr. Bonavia, Professor Church, and Rev. G. Henslow, Hon. Sec.

Bouillie bordelaise.—With reference to this preparation, Mr. Morris stated that it had been thought advisable by some persons to water the soil with it, and M. Cornu, as recorded in his letter read at the last meeting, appeared to favour this view. It was, however, the general opinion of the members present that this procedure would undoubtedly sterilise the soil, and so prove highly injurious by arresting nitrification. Some further discussion arose with reference to the best manner of knowing when the bouillie was in a proper state for application, as several failures in its use had resulted from the copper-salt being still present in the solution. Dr. Russell, as recorded at the last meeting, appeared to rely upon the absence of a blue colour when 2 or 3 inches in depth of the clear fluid was looked through; another suggestion, made by Dr. Müller, being the application of a small quantity of liquid ammonia. If there be any copper present, the bouillie would become blue. Professor Church remarked that although all the sulphate of copper might be changed into the hydrated oxide, yet if any small quantity of the latter be left suspended in the liquid, and not entirely precipitated, the blue colour would still appear on the addition of ammonia. The simplest and most efficacious test would be to place a piece of clean iron (e.g., a knife blade free from grease) into the solution for about 5 minutes; then, if no film of copper were deposited on the iron it might be concluded that the mixture was in a proper condition for use. It was further added by Dr. Müller, that great care is required in using the lime, as, if it were not most thoroughly pulverised in water, portions would not come into action at all. The lime, too, must be of the best quality, and not from a quantity which had been kept for any time exposed to the air.

Prevention of Smoke and Fogs.—Mr. Michael forwarded the following report upon Col. Dulier's process for the prevention of smoke and fogs:—

"As requested by the committee, I have inspected Colonel Dulier's apparatus at 51, Sloane Gardens. The process is especially applicable to domestic fires, including those of the ordinary English type. Shortly stated the process is as follows—viz., steam (not under pressure) is generated in a small special boiler behind the kitchen range, and is allowed to mix with the smoke in the flue; it may be introduced either at the top or the bottom of the flue. The mixed smoke and steam does not pass through a chimney-pot into the open air in the usual way, but is conducted into a condenser on the roof of the house, which receives all the flues of the house. In this condenser the steam is condensed, and falls into very fine rain, thus washing the smoke and carrying down carbon, sulphurous acid, &c., the whole being carried off by a drain. It is claimed that the condensed steam carries down practically the whole of the free carbon, and also a third to a half of the sulphurous acid when the air temperature in the open is 50° Fahr. or above, and more than a half when the temperature is lower. It does not appear that any experiments have yet been made to

ascertain what proportions of the other residual products of coal combustion are carried down. The process appears to me to be simple, automatic, and well worthy of further investigation and encouragement. A wet rag placed over the discharge aperture of the condenser, where the hot air and gases escape, is not blackened and does not collect soot, and the face may be held over the same aperture without any particular inconvenience being experienced. It is further claimed that the apparatus prevents the possibility of a down draught in the chimney, and also effects a considerable saving in fuel. The present apparatus at 51, Sloane Gardens, has been erected for the purpose of experiment and demonstration only, and would, I fear, be much too costly to be enforced for general use in small houses; but it is the first made, and could probably be greatly simplified and reduced in cost. Colonel Dulier would be happy to exhibit the apparatus to the Fog Sub-committee on their applying to him at 27, Sloane Gardens. The apparatus used by the chemists who tested the absorption of sulphurous acid, &c., is still in No. 51, Sloane Gardens, and Colonel Dulier would place it at the service of any chemist connected with this Society who might be inclined to make further investigations."

The thanks of the committee were given to Mr. Michael for his report.

White Ants from La Rochelle.—Mr. McLachlan exhibited specimens of the *Termes lucifugus* received from La Rochelle, the injuries caused by them having been described at a previous meeting. They are small, being about half an inch long, and in the larval condition.

Artichoke Gall.—He also exhibited a specimen of a gall, probably produced by some species of cynips.

Cladosporium on Wheat.—Mr. Plowright sent specimens showing this disease, with the following communication:—"During the last season this disease has been exceedingly common in the Wheat in various parts of England. No district has probably suffered more from it than the eastern counties. It is often present with us, but I have never seen it so abundant as this year. Whole fields were blackened by it, and many persons mistook it for Wheat mildew, with which, of course, it has no affinity. Until recently the *Cladosporium* was regarded as a saprophyte, but recent investigations show me that it can also exist as a true parasite. During the harvest the difference between Wheat mildew and the *Cladosporium* disease is very apparent, for where the last-named is present to any extent, the reaping-machine is surrounded by a cloud of dust. There is nothing to prevent both fungi occurring in a Wheat crop simultaneously, but, of course, the mildew is not dusty. Prof. Eriksson, of Stockholm, a few years ago, called attention to the prevalence of *Cladosporium* on Rye in Norway and Sweden, and pointed out that it all occurred on the grain; and further, that when the diseased Rye was consumed, it gave rise to a series of symptoms, among which were diarrhoea, vomiting, and especially derangement of nerve centres, producing dizziness and a staggering gait, like that of a drunken man. The grain of Rye, being less covered by the chaff, is more liable to have the fungus upon it than is the case with the Wheat. Professor Woronin last year was called upon by the Russian Government to investigate a series of cases in which the above-named symptoms were produced by its consumption. He came to the conclusion, however, that the poisonous properties were induced rather by *Fusarium roseum* than by the *Cladosporium*, although the latter was very abundant on the affected grains. As will be seen from the specimens sent, the *Cladosporium* is especially abundant on the chaff. Such a development of parasitic life cannot but be detrimental to the Wheat affected by it, and it is probable that the *Cladosporium* has much to do with the poor yield so many agriculturists complain of this year. This is a subject into which the Agricultural Department should inquire at once."

Cronartium ribicola.—Mr. Plowright also sent specimens of *Pinus Strobus* attacked by the æcidiform stage of this fungus, with the following communication:—"At a recent meeting of the Scientific Committee specimens of this fungus on Currant leaves were exhibited, gathered in the garden of Mr. C. G. Boyes, Oakwood House, Setch, near King's Lynn. On August 13, I again visited the garden and examined the Pines, in order to find, if possible, the branches affected by the *Peridermium*. This I was successful in doing, and herewith send one of the affected branches. It will be seen that the mycelium of the *Peridermium* has caused hypertrophy of

the affected branch. The peripheral extremity bears a sickly tuft of foliage, but the branch itself is evidently dying, although at its base it shows the enlargement due to the mycelium extending downwards. There are two trees affected about 15 yards from the Currant bushes. I have also observed the *Cronartium* on Currants in the garden at Middleton Rectory." A vote of thanks was given to Mr. Plowright for his interesting communications.

Green-fruited Elder.—Mr. Henslow exhibited sprays of this rare form of the common Elder from a tree in his garden at Ealing. The foliage differs from the common form in being darker in colour, the two halves of a leaflet approximating each other as in the Portugal Laurel, the marginal teeth being curved forwards, whereas in the common form the leaf is paler green, the leaflets are flat, and the teeth straighter. The berries of the green variety are globular with ten veins, resembling Currants, the ordinary form being oblong and black. The taste is the same in both.

Floral Committee.

OCTOBER 18.—On this occasion a very excellent show of hardy fruit was brought together at the Drill Hall, James Street, Westminster, which was temptingly displayed on long tables in the centre of the hall. A pretty lot of Orchids, some rare and all beautiful, graced a table on one side; and a fine stand of several hundred Ferns, in fine condition for the time of year, well-furnished the opposite side of the building. Cycads, Chrysanthemums, tuberous Begonias, and coloured foliage formed the more prominent part of the remainder.

Present: W. Marshall, Esq., in the chair, and R. Dean, B. Wynne, H. Herbst, C. T. Druery, E. T. Bause, R. Owen, G. Phippen, R. B. Lowe, T. W. Girdlestone, W. C. Leach, W. Furze, H. H. D'Ombra, G. Gordon, C. Jeffries, H. Cannell, J. Walker, T. Baines, J. Fraser, C. Noble, W. Bennett Pöe, G. Paul, H. Turner, Owen Thomas, N. Davis, and E. Mawley.

Mr. H. B. May, Upper Edmonton, staged a large and tastefully arranged group of foliage plants, Ferns, &c., including some nice Crotons, and very ornamental varieties of Ferns (Silver-gilt Flora Medal). Messrs. Cannell & Sons, brought some single-flowered tuberous Begonias, that had been lifted from the open ground about a fortnight since. These were surprisingly good after the severe weather we have had. Also some zonal Pelargoniums, Madame Boudville, a pale salmon-pink with rose margin (single) received an Award of Merit, as did also Raspail Improved, a semi-double rosy-crimson variety. There were included in the collection a few plants of "Double New Life." It is striped like the single one, and is a mixture of scarlet and white. The plant is a descendant of the well-known Vesuvius, which threw the single-flowered variety "New Life," and a zonal with double deep scarlet blossoms, named "Wonderful," which latter in its turn produced this double-flowered New Life—a curiosity of white and scarlet flowers, arranged in a many-flowered truss. Some sprays of *Physalis Alkekengi* completed the exhibit (Bronze Banksian Medal).

From the Royal Garden, Windsor, came a beautiful group of plants of Carnation Marguerita, in colours from palest pink to dark purple. They were from seed sown on February 18, 1892 (Vote of Thanks).

Two very finely-flowered pots of *Nerine crispata* came from Mr. T. Bones, Tower House, Chiswick. They were in 6-inch pots, and had about two dozen spikes to each pot.

The Duke of Northumberland, Albury Park, Guildford (gr., Mr. C. Leach) sent a fine collection of sprays of ornamental autumn foliage, including *Euonymus europæus*, *Andromeda arborea*, *Cornus sanguinea*, *Azalea pontica*, *Rhus cotinus*, *Liquidambar styraciflora*, varieties of *Acer*, *Viburnums*, &c. (Silver Banksian Medal).

A few sprays of that most delicate and beautiful of all the *Ixoras* (*Ixora Westii*), were sent by Mr. Jas. Hudson, gr. to Lord Rothschild, Gunnersbury House, Acton.

To show the difference between Aster "Jno. Wood" and A. "Harpur Crews," the Rev. W. Wilks sent blooms of each; also a bloom of the old form of *Colchicum speciosum*.

Mr. Arthur Knowles, nurseryman, Horsell, Woking, sent a box of *Daphne Cneorum*. A group of clean healthy *Cycas revoluta* came from the nursery of Messrs. E. D. Shuttleworth & Co.; the plants were young, and illustrated the decorative value of the order in a marked degree (Silver-gilt Medal). Some sprays of *Berberis Thunbergii* and *Quercus ameri-*

canus splendens, both deeply coloured, came from Mr. Anthony Waterer, Knap Hill, Woking, Surrey.

The authorities of the Royal Gardens, Kew, contributed a white variety of *Thunbergia grandiflora* (T. g. var. *alba*); also a seedling *Streptocarpus*, the result of a cross between the new species, S. Galpini, and S. rex. Both the species and the hybrid are very beautiful, but the seedling has larger blooms, and the white throat of the species has given place to a dark purple one in the hybrid. From the same garden came *Satyrion sphaerocarpum*.

The advance guard of the "mums" put in appearance on this occasion, represented by a few new varieties of great promise. Foremost was William Seward, sent by a gentleman of this name residing at Hanwell, who last season exhibited at one of the meetings of the National Chrysanthemum Society a number of yearling seedlings of a character that promised remarkably well, and one of them is the variety just named. It is a large reflexed Japanese, of a rich crimson-maroon colour, with a bronzy-buff reverse, having great breadth of petal; and it is a singularly fine exhibition variety (Award of Merit).

Mr. W. J. Godfrey, nurseryman, Exmouth, had Beauty of Exmouth, a large reflexed white Japanese, pure in colour, deep and full, and a decided acquisition to the October-flowering varieties (Award of Merit). Duchess of Devonshire, Japanese, pale pink, with silvery reverse; was not in good condition.

From Mr. R. Owen, nurseryman, Maidenhead, came Mrs. Myers, a large reflexed pure white Japanese, having a yellow centre, great depth of substance and breadth of petal (Award of Merit); Baron Hirsch, a very fine and distinct incurved variety, pale orange Cinnamon or bronze reverse; amaranth surface, large, full, and of fine shape (Award of Merit); Mr. Owen also had Edith Owen, an incurved Japanese, pale pink with silvery reverse. From Mr. H. J. Jones, nurseryman, Lewisham, came Mrs. A. G. Hubback, an incurved Japanese of a bright rosy-purple tint with silvery reverse, two blooms only being shown; Madame E. A. Reg, also an incurved Japanese, pale ground, the points of the petals bright purple, very pretty and pleasing; also President Carnot, a new French incurved variety, buff reverse, tinted with yellow, and bright crimson surface, which will probably be seen again. Mr. W. Wells, nurseryman, Earlswood, had Mrs. W. R. Wells, a white sport from Vivand Morel, but there is a tendency on the part of this variety to sport to pale forms; William Wells, and deep primrose sport from Mdlle. B. Pigmy; Miss Gorton, a pretty blush Japanese; Margot, a charming hue of rosy-pink; Mr. R. Bahaunt, La Chirine, a good yellow, in the way of Sundowner, and others. From Dr. Franklin, Reigate Hill (Mr. C. Ritchings, gr.), came a stand of thirty-six blooms of Japanese. Conspicuous among them were Edwin Molyneux, Avalanche, Sundowner, Stanstead Surprise, Mrs. W. H. Lincoln—a very fine incurved yellow, Mons. Freeman, Elaine, &c.

Orchid Committee.

Present: Dr. Maxwell T. Masters, in the chair; and Messrs. Jas. O'Brien, Sec.; Jas. Douglas, E. Hill, J. Jaques, Rev. E. Handley, De B. Crawshaw, H. Williams, and H. M. Pollett.

An extensive group of Orchids was arranged by Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N., among them being fine examples of over twenty varieties of *Cypripedium*, including the fine *C. Pitcherianum* × *Williams' var.*, *C. vexillarium superbum* × *C. selligerum rubrum* × *C. insigne Mooreanum*, *C. Morganiae*, and *C. cænanthum superbum*. Also among Messrs. Williams' exhibits were *Bollea Patini*, *Dendrobium Phalaenopsis Schroderianum*, *D. Goldiei*, *D. Dearei*, *D. superbiens*, *Oncidium Kramerianum*, *O. Papilio*, *O. P. Eckhardtii*, *O. Ornithorhynchum*, some fine *Odontoglossums*, *Pleiones*, *Epidendrum Cooperianum*, &c. (Silver Banksian Medal).

Philip Crowley, Esq., Waddon House, Croydon (gr., Mr. W. King), staged a group of Orchids made up of fifteen finely-flowered plants of *Odontoglossum grande*, four good forms of *Vanda Kimballiana*, *V. tricolor*, well-bloomed; and a nice variety of the old *Cymbidium giganteum* (Bronze Medal).

Messrs. F. Sander & Co. sent some rare Orchids, one of the most beautiful being a specimen of the elegant *Platyclinis Cobbiana*, with many of its pendent spikes of white flowers with yellow centre. Another rare species was *Cattleya Brymeriana*, and among other good things were *Cattleya aurea chrysotoxa*, which has given such a remarkable series of beautiful variations; *Masdevallia gorgona*, *M. Roezlii*, *Colognye fuscenscens*, and *Brassia maculata*.

George Hardy, Esq., Pickering Lodge, Timperley, Cheshire (gr., Mr. W. Holmes), sent a four-flowered spike of the true *Cattleya Massaiana*, which may be likened to a form of *C. Hardyana*, with sepals and petals mottled rose and white; also *C. aurea*, and a spike of *Cypripedium* × (*caudatum* × *Ainsworthii*), under the name *C. Hardyana* ×. It bore a great resemblance to *C. macrochilum* ×, illustrated in the *Gardeners' Chronicle*, September 19, 1891, p. 343, and the committee desired to see it again.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester, showed a 3-flowered spike of a good bright form of *Cattleya aurea*.

Messrs. Linden, L'Horticulture Internationale, Parc Leopold, Brussels, sent a yellow *Odontoglossum*, under the name of *O. Inseayi* Lindenii, but the flowers were too much damaged to admit of the merits of the plant being accurately judged.

Fruit Committee.

Present: P. Crowley, Esq., in the chair; and Messrs. J. Lee, T. F. Rivers, G. Taber, T. J. Saltmarsh, J. Wright, A. Dean, A. H. Pearson, G. H. Sage, G. Wythes, J. Hudson, H. Balderson, J. Willard, R. Hogg, Harrison Weir, and J. Cheal.

We have seldom seen a better collection of fruits at the Drill Hall than was there on Tuesday last. In addition to the Apples, Pears, and Grapes, for which prizes had been offered, there were many and large exhibits of every variety of fruit in season. The 1st class was for ten dishes of Apples grown in the open (six dishes of cooking and four of dessert) amateurs, and the 1st prize was secured by Mr. A. W. Porteous (gr. to E. H. Watts, Esq., Devonhurst, Chiswick), whose collection comprised Lord Derby, Warner's King, Prince Bismarck, Emperor Alexander, The Queen, Peasgood's Nonsuch, Cox's Orange Pippin, Gravenstein, Worcester Pearmain, and Ribston Pippin; Mr. Nicholson, gr. to J. W. Mells, Esq., Sewardstone Lodge, Chingford, was 2nd.

Pears were solicited subject to the conditions that they had been grown in the open, that they were dessert varieties, and of six fruits to the dish, and six dishes (amateurs). J. W. Mells, Esq., was 1st, with commendable specimens of Pitmaston Duchess, Marie Benoist, Doyenné du Comice, Louise Bonne of Jersey, Rivers' Princess, and Beurré Diel; the Duke of Northumberland, who included fine specimens of Pitmaston Duchess, was 2nd.

For six bunches of Grapes, not less than three varieties, the 1st prize was awarded to Messrs. Rothschild, Gunnersbury House, Acton (gr., Mr. Jas. Hudson), who showed finely-coloured and well-finished bunches of Muscat of Alexandria, Black Alicante, and Lady Downes' Seedling; the 2nd position was filled by Mr. Thos. Osman, The Gardens, Ottershaw Park, Chertsey. This last exhibitor also received a 1st prize for six bunches of Grapes, of not less than three varieties (for flavour). The varieties were Muscat of Alexandria, Mrs. Pearson (good), and Mrs. Pince's Muscat; this latter variety was not well finished.

Mr. Geo. Wythes, gr. to the Duke of Northumberland, Syon House, exhibited a large and good collection of Apples and Pears, the most notable being—Apples, Cox's Orange Pippin, Alfriston, Blenheim Orange, Red Astrachan, Cellini Pippin, Worcester Pearmain, Warner's King, and Peasgood's Nonsuch. Pears, Pitmaston Duchess, Duchess d'Angoulême, and Beurré Diel (Silver Knightian Medal).

Mr. Samuel Mortimer, The Nurseries, Rowledge, Farnham, brought some good bunches of Black Hamburg and Alicante Grapes; these were well-furnished, but not large. Also Apples Golden Noble, Ribston Pippin, King of the Pippins, Alfriston, Burchard's Seedling, Warner's King, Blenheim Orange, and Hanwell Souring (Silver Banksian Medal).

A collection of thirty dishes of Pears came from J. W. Mells, Esq., Sewardstone Lodge (gr., Mr. Nicholson). This exhibit contained a very pretty dish of Durondeau (Bronze Banksian Medal).

The finest Pears we have seen this season from an English garden came from Martin Smith, Esq., Hayes Common, Beckenham (gr., Mr. Blick). There were twelve dishes, and the following were the varieties (from pot trees):—Uvedale's St. Germain (3½ oz. each), Pitmaston Duchess (2½ oz.), Doyenné du Comice (2½ oz.), Beurré Superfin, Beurré Diel, Conference, Princess, Magnate, Marie Louise, Marie Louise d'Uccle, Conseiller de la Cour, and General Todleben (Silver Banksian Medal).

From Mr. H. Becker, Jersey, came several sorts of Apples for Certificates. Monstrous Incomparable

was described as a very fine looking fruit from the only tree supposed to be in Jersey (on a wall). The variety is supposed to have been brought from France years ago; this was given an Award of Merit. The other varieties were not so fortunate. Mr. E. Molyneux, Swanmore Park Gardens, sent three dishes of Apples, Cox's Orange Pippin, and Mère de Ménage, both very well coloured, and Warner's King (good large fruits), gathered from bushes planted in 1890. Messrs. Paul & Sons, Cheshunt, had a collection of Apples and Pears, in which we noticed very fine Ribston Pippin, Maux Codlin, Emperor Alexander, and Baumann's Red Winter Reinette (Silver Knightian Medal).

Another very large collection of Apples came from Messrs. Jas. Veitch & Sons, Chelsea. There were 288 dishes, and especially noteworthy were dishes of Peasgood's Nonsuch, Lord Suffield, Emperor Alexander, Tom Putt, Cellini Pippin, Galloway Pippin, New Hawthornden, Histon Seedling, Baumann's Red Reinette, Cockle Pippin, and King Harry, a very nice early dessert variety that has been very popular this year. Also a number of bunches of autumn-bearing varieties of Raspberries in full fruit (Silver-gilt Knightian Medal). Messrs. Jno. Laing & Sons, Forest Hill Nurseries, had 60 dishes of fruits of general excellence. Bismarck Apple was very fine here, also Hollandbury, Mère de Ménage, Peasood's Nonsuch, Cellini Pippin, and Tom Putt (Silver Banksian Medal). Another collection of 100 dishes of fruit came from Messrs. J. Peed & Sons, Roupell Park Nurseries, Streatham. Among these the finest were Cellini Pippin, Golden Noble, Ribston Pippin, and Dutch Codlin. Also a pretty dish of Doyenné White Pears and Beurré Superfin (Silver Banksian Medal). To show what can be done within the three miles radius of London in the way of fruit culture, Mr. G. T. Bodley, 99, Loughborough Road, sent a few samples of Apples that he had grown in a back garden, of fair quality from such a position.

Mr. George Wythes, Syon House Gardens, obtained a First-class Certificate for a Seedling Melon that he had raised from a cross between Hero of Lockinge and an unnamed variety, also raised at Syon House. Beauty of Syon is a pretty yellow-netted variety, and was described by some of the members of the committee as an exceptionally good-flavoured variety. Mr. A. Bishop, gr. to R. Burrell, Esq., Westley Hall, Bury St. Edmunds, also staged a Seedling Melon.

From the Royal Horticultural Society's Garden, Chiswick, were exhibited Muscat of Hungary, Orez Tirdovanny Grapes.

Mr. J. Bowerman, Hackwood Park Gardens, Basingstoke, showed two dishes of Apples for Certificate. The fruits looked like over-coloured Worcester Pearmain, but were much harder.

A Seedling Apple (Hampton Court Pippin) came from Mr. Robert Morrow, Leominster. Seedling Apples also came from Mr. F. Smith and from Mr. W. Longley, The Mall Nursery, Faversham; and from Messrs. Dickson, Edinburgh.

Messrs. Cooper, Taber & Co., Witham, Essex, sent a box of well-coloured Worcester Pearmain Apple, a dish of Japanese Pole Cucumbers, and some American "Vegetable Peaches" (varieties of Melons that would not be appreciated here) (Accorded a Vote of Thanks).

Messrs. Philip Mayfarth & Co. exhibited fruits and sections of fruits that had been evaporated by their patent machine in the gardens of the Royal Horticultural Society at Chiswick. The results were highly satisfactory, and the samples of rings, parings, cores, &c., of Apples, and the Prunes, Plums, &c., were of the highest order (Silver-gilt Knightian Medal).

A collection of Onions came from Messrs. Jarman & Co., Chard, Somerset, and gained an acknowledgment for their good culture. Mr. J. Willard, Holly Lodge Gardens, Highgate, received a Vote of Thanks for some heads of Silver or Seakale Beet.

Mr. Leech, gr. to the Duke of Northumberland at Albury Park, was awarded a First-class Certificate for a dish of Tomatos (Lady Bird). The fruits were very even, deeply coloured, and appeared to be very prolific.

LECTURE ON CYCADS.—By W. CARRUTHERS, Esq., F.R.S., Keeper of the Botanical Department, British Museum.

Mr. Carruthers commenced his lecture by referring to the difficulty that was first experienced in classifying plants of this order before

any fruits had been seen, and said, that in appearance they had often been described as Palms, and many of them had been mistaken for Tree Ferns, but in reality they were more nearly related to the Pines than to any other family, and they occupy the very base in the classification of flowering plants. The lecturer then proceeded to describe the essential organs, and said that the ovules were quite naked, and that they were fertilised by the direct contact with the pollen grains, and that the absence of stigma, style, and ovary, were the characteristics of the group of flowering plants called Gymnosperms. Mr. Carruthers said that Gymnosperms occupied a very prominent position among the very first dry land vegetation of the globe, and were the remains of an otherwise extinct vegetation. They are now found abundantly in the tropical parts of the world, but in some parts north of the tropics, as in America, and south thereof, as in South Africa and Australia they are also to be found. The genus *Cycas* is most abundant along the borders of the Indian Ocean, and it extends eastwards as far as Tropical Australia, and westwards into Madagascar. In this genus the simple fruit is borne on the margin of the leaves.

Zamia and *Ceratozamia* (between which Mr. Carruthers could see but little difference) have cones whose scales have a linear arrangement, and which meet, but do not overlap at the edges, and the fruits are borne on the inner surface of the peltate scales. They come chiefly from the tropical regions of the New World, but three species are found in Florida. *Ceratozamia* in the New World were peculiar, in that they had cones composed of scales arranged in a linear manner, while, on the other hand, the cones of the Old World genera have scales which are spirally arranged.

Encephalartos, a well-known South African genus, is useful and decorative in large stoves in this country, has spirally-arranged scales. They are found chiefly in the extreme south of Africa.

Macrozamia, the lecturer stated, was found in Australia, had peltate scales, the tips of which are directed upwards.

Dioon (the principal species of which was *D. edule*) were found in Mexico. The cones were composed of flat imbricated scales, and this kind of scales Mr. Carruthers said was found in America, S. Africa, and in Australia.

Stangeria, a monotypic genus, with foliage like a Fern, and very unlike in appearance to the other Cycads, was a native of South-east Africa.

In conclusion, the lecturer said he would not go into the question of culture, but would merely warn amateurs having these plants under their care that they form a large amount of pith in the stems, and that after remaining for a long time dormant (even for years), they would sometimes spring into fresh growth without any apparent reason; it was, therefore, unwise to throw stems away, so long as they were not quite dead.

Dr. Masters (who occupied the chair), alluded to the geological history of the plants, and said that he was quite in sympathy with the lecturer in his surprise that members of the Cycad family were not more widely grown for decorative purposes than they were.

Mr. W. Watson, of the Royal Gardens, Kew, gave a few hints as to general culture, and also recited an interesting case of the wonderful vitality possessed by the old stem of these plants. The plant was *Macrozamia Moorei*, and a stem about 9 feet long, was imported, which remained in the Palm-house for years, without growing, and when looked at, the lower part of the stem was found to be rotten, and the top was then cut off, and put in as a gigantic cutting, and it is now a thriving plant.

In illustration of the lecture the authorities of the Royal Gardens, Kew, sent cones of *Dioon edule* (female), *D. spinulosum* (male), *Ceratozamia mexicana* (female), *Zamia muricata* (female), *Z. Skinneri* (male), *Macrozamia spiralis* (male), *Encephalartos villosus* (female), *E. Altensteinii* (male), *E. caffer* (male), as well as leaves of all the genera of Cycads.

FUNGUS FORAYS, 1892.

IN bygone days the reports of fungus forays were long and enthusiastic, not wholly lacking in adventure, nor wanting in interest. Of late years, the record has been written under a feeling of depression and disappointment. Those of us who remember the excursions of twenty years, or even of ten years ago, cannot fail to recognise in the field days of the past three or four years, only the ghosts and shadows

of the "long ago." It is a question of fact, and not of feeling, that an immense change has taken place. First and foremost in the great dearth of the larger fungi, those of the Mushroom kind, everywhere. To whatever causes we may attribute this, the fact still remains, that woods which in the days of our remembrance, literally swarmed with toadstools, are now comparatively bare. Then it was impossible to carry away in our baskets one-half of the good things met with, and the baskets were big ones, to adorn the tables for the annual exhibition. Now, it becomes incumbent to secure everything that is met with, good, bad, or indifferent, in order to make up an exhibition at all. Then it was that tables to the length of 150 feet could be closely packed with the spoils of two or three days; but now, a table of 10 or 12 feet in length is all sufficient. When we are compelled to confess that, in excursions extending over ten days, we only saw one juvenile specimen of the ubiquitous *Agaricus melleus*, it will be sufficient to astonish the old marauders of 1872 to 1882, and to justify us in our lament for the good old times.

The Yorkshire Naturalists Union held a fungus foray in the neighbourhood of Malton on September 13, 14, and 15, in localities to which, under ordinary conditions, no exception could be taken; but, unfortunately, although there was no lack of walking, the results were far from adequate, common species were conspicuously absent, and, in all cases, the number of individuals was remarkably small. It is not unusual, in such cases, to meet with one or two individuals of rare species, or at least of species having considerable interest, and such was the case on the present occasion. We were surprised to see that splendid edible agaric, which has hitherto been confined to about three British localities, *Agaricus (Psalliota) elvensis*, in Yorkshire, and also some few others which had not previously been recorded for the county, including a large species of the sub-genus *Inocybe*, allied to *Agaricus scaber*, which could not be referred to any described species, or, at any rate, only tentatively to a species described by Britzelmayer, and not previously known in Britain. There was considerable local interest in the fungus-hunt, and it was unfortunate that the exhibition could not be made more worthy of the occasion, notwithstanding the praiseworthy efforts of the several local naturalists who, many of them, undertook considerable journeys to be present.

In the following week, the Woolhope Field Club held their annual meetings at Hereford. Tuesday, September 20, was devoted to Whitcliff Woods, near Ludlow, an old hunting-ground of the Club; but on this occasion the persistent downpour of rain throughout the day rendered the gathering of fungi beneath the shelter of umbrellas an unenviable occupation, and entailed subsequent results not quite pleasurable to such as were not impervious. The Thursday's excursion in the woods of Dinmore was favoured with fair weather, and the collection made was much better than in the same locality two years ago. Somewhere about a dozen species, not recorded before for the county of Hereford, will have to be added to the flora of Herefordshire. One of the most noteworthy additions was *Agaricus (Stropharia) Percevalii*, only found previously near Morpeth. At the exhibition were to be found an interesting collection of fungi sent by H. Spencer Perceval, Esq., from the last-named locality, and a smaller collection made by T. Howse, Esq., in Surrey, amongst the latter being *Agaricus (Tricholoma) circumtectus*, for which only one locality had previously been known. In neither of the above cases of fungus forays held this year could sufficient edible fungi be collected to furnish the table with a dish, except, perhaps, of the Horse Mushroom, *Agaricus arvensis*, of which about six specimens were found. With such a record we, who remember better days, are apt to sigh for a return of "the good old times." M. C. Cooke.

NOTTINGHAM ST. ANN'S FLORAL AND HORTICULTURAL.

OCTOBER 6.—The last of this year's series of flower shows in connection with this Society, was held on the above date. The members have competed during the season for points, as well as for money prizes, and these points will now be added up, and a Gold Medal presented to the highest competitor, whilst the 2nd and 3rd will receive a Silver Medal and a Bronze Medal respectively. The series have ended most successfully, and in this last show the entries were numerous, and the quality of the exhibits was even higher than at previous exhibitions. There were classes for plants, Chrysanthemums, Dahlias, Roses, cut flowers, Tomatos, vegetables, &c.

THE ROSERY.

OCTOBER IN THE ROSE GARDEN.

This month is, or ought to be, a busy one with all those who wish to have their Rose garden a thing of beauty next year. Alterations have to be made, selections made as to what should be eliminated, and what added, and many other little matters set on foot. It may not then be out of place to put on record a few things which may be helpful to the Rose grower, whether he be an exhibitor or not. One hears a great deal of the enormities of exhibitors, and how their gardens are spoiled for the sake of the exhibition table, and these charges are to some extent true. It is a shock to one's nerves to go into a Rose garden and see the beds covered thick with manure, caps, parasols, and all sorts of contrivances scattered all over, but that need not be done—while, at the same time, the principles on which the exhibitor acts may be the very best for the non-exhibitor, who loves his Roses. For instance, exception is taken to the manner in which Roses are pruned, and so restricted in their growth that they are not allowed to grow more naturally, but I know no way in which Roses look so well as when they are grown as above, and carefully treated. To look over a garden so managed as was that of that true lover of the Rose, the late Mr. George Baker, of Reigate, was indeed a treat, and I feel sure it is sound advice to recommend all who wish to have really good Roses, to adopt that exhibitor's plan of growing dwarfs, and of treating them in the same way that he did, although they may never have the slightest intention of placing a box of Roses on the exhibition table.

I have in my mind in writing these notes not the large growers, who know more about these matters than I do, but those who are desirous of having the comparatively few Roses they do grow in as high a state of perfection as possible, and for such persons October comes with its many questions to be solved, as a rather serious matter. Their object may be either to make new plantations, or substitute some new plants for others they are anxious to discard. In the case of the former, it will be necessary to dig the ground well, or to trench it, provided the subsoil is fairly good. I have known ground trenched to the manifest injury of the garden, for it brought up an unhealthy soil to the surface, which was not got rid of for years. For both of these operations there are one or two things to be remembered. One is, not to allow any manure to come in contact with the roots of the early-planted Roses. Anyone who has noticed what takes place when plants have been laid in for a short time, will recollect the small white roots which are emitted from the older roots. Now, if these rootlets come into contact with the manure, they will find it too strong for them, and they become brown, and make no progress. Therefore, when a new piece of ground has to be trenched, the manure is laid at the bottom of the trench, so that it is some time before the new roots get to it. In the case of individual plants in beds, it is better to make a hole where the Rose is to be planted, and fill it up with fresh sweet fibrous loam from the top spit of a pasture, which has been laid up for a few months; failing this, any good sweet soil will answer. When the soil is too heavy, it may be lightened with leaf-mould; but it should always be borne in mind that the soil which the Rose loves is a rich, tolerably stiff loam, not clay, although it may be very near to it in its texture. In this sweet soil the young rootlets will revel, and by the time the manure reaches them, either from the trench or from the mulching, they will be prepared to absorb all its valuable properties without injury. Another reason for not applying manure close to the plants is, that you avoid thereby encouraging fungi, which are apt to considerably damage the roots.

Another necessary point to observe in planting is that of planting firmly. Of course, where standards are planted, stakes must be used to keep them firm;

but whether it be standards or dwarfs, the firm planting is a great point. The hole should be opened pretty wide, and the roots spread out evenly round; the soil should then be placed upon them, and when the roots are covered, that should be stamped down, holding the plant in one hand, and then the remainder of the soil should be added, and again pressed firmly down. If the shoots of the early-planted Rose are long, it may be advisable to place a short stake to keep all firm, for I am sure nothing is more injurious to the well-being of the plant than its being "wobbled" about by the wind; then again, in all cases, no matter what the stock may be, they should be planted so that the point where the bud was inserted, should be at least 2 inches below the surface, this secures the bud from drying up; and, moreover, after a little while, roots are emitted from the scion itself, and so the plant becomes doubly cared for, having the roots of the stock and its own roots to supply it with nourishment. This is the reason why, although we hear to the contrary, budded Roses are so long lived. I have two dwarf plants on the Manetti of *Souvenir de la Malmaison*, which have been in my possession for forty years at least.

The question of what to plant, and on what stock to have them, is a somewhat complex one; there seemed at one time as if the Manetti was to be ruled out of court, but it is asserting itself again, and on light soil, I believe, it is still the most desirable stock; on really good Rose-soils, such as the soft nutritious loams of Hertfordshire, the wild Briar, or the seedling, will hold its own; while for the Tea Rose there can be little doubt that the Manetti is not suited, the Briar standard, or half standard, and the seedling Briar are just suited for its wants, the Manetti is too vigorous and too early.

With regard to which varieties are to be selected to fill the vacancies in the beds, or to be used in the formation of new beds, there are several things to be considered, as the advice to be given will differ according to the necessities of the grower, i.e., whether he be an exhibitor or not. The former will look out for new varieties, or such flowers as will stand him in good stead on the exhibition table; the latter will consider best which may ornament his garden. I shall bear the latter in mind, and, although the Roses hereafter mentioned are exhibition Roses, they are none the less suitable for garden decoration. There are, for instance, some varieties which, although very lovely, are yet of such indifferent habit that they bring nothing but disappointment. Take, for example, those most lovely dark Roses, *Xavier Olibo*, *Reynolds Hole*, and *Louis van Houtte*: one often hears the statement concerning them that they are only good on maidens, implying that you must not look for them to bear more than one year, or at least to live so as to give good blooms. Such a flower also is *Horace Vernet*, and it was remarked as a noticeable fact of a grand bloom of this fine variety exhibited by Mr. E. B. Lindsell at Earl's Court that it was from a cutback. I would not, therefore, advise such Roses. Then again there are certain Roses which are frightfully subject to mildew, and which not only are extremely subject themselves, and disfigure the beds where they are planted, but also are likely to spread the fungus, of such I mention *Abel Carrière*, *Her Majesty*, *Jean Souper* (syn. *Great Mogul*); then, again, there are Roses both amongst the Hybrid Perpetuals and Teas, fair-weather Roses, such as *Jean Ducher*, *Marie Guillot*, and *Mons. Noman*; implying that when we have a wet season the blooms become glued together, and rot on the shoots, not merely disappointing our expectations as to flowers, but giving the plant a most unsightly appearance; and there being so many beautiful Roses in the same strains of colour, I do not think it is worth while to recommend any moderate growers, for this term implies weakness of constitution. Then there are other Roses which are called uncertain; that is, you may now and then have a good bloom, but they are few and far between, such, for instance, as *Boildieu*, *Henri Ledechaux*, and *Marie Rady*, beautiful when you get them, but

the when is a very uncertain quantity. I am quite aware that there will be some growers who will perhaps say of some of the Roses I have taken exception to, "Oh! that is very good with me." Yes, possibly, for Roses have their idiosyncrasies. Thus, in the garden of Mr. Fowler at Taunton, where Tea Roses do well, he can never, although the plants grow well, get a presentable bloom from Rubens or Anna Olivier, easily grown varieties, although he succeeds admirably with Comtesse de Nadaillac and Souvenir d'Elise, and such peculiarities may be seen in other places. I do not know anything to account for them. I would recommend the following:—

Alfred Colomb: this is so often like Marie Baumann, that it has been suggested that they should be bracketed together, but at other times it is quite distinct; Alfred K. Williams, exquisitely formed, very early, and a good autumnal bloomer; Baroness Rothschild, a long-established favourite—unhappily, it has no perfume; Beauty of Waltham, Camille Bernardin, Captain Christy; Charles Lefebvre, a grand old Rose, and I very much question if there is anything to surpass it—it is not so vigorous with many as one could wish, but I have seen it in splendid vigour at Mr. Hall's, of Larchwood, and in many other places; I believe it to be one of those Roses which the Manetti suits best. Sir Rowland Hill is a sport from this, which it too often shows by "harking back" to the type; Comtesse d'Oxford, Comte Raimbaud—I do not like to leave this out, although I have never grown it, but it has been shown beautifully, and is described as a vigorous grower. Countess of Rosebery, Devienne Lamy, Dr. Andry, very bright, very vigorous in growth, and abundant bloomer; Duke of Edinburgh, a fine vigorous grower and brilliant Rose, blooming well a second time; Earl of Dufferin, a very bright and beautiful Rose; Elie Morel; General Jacqueminot—although this Rose has been out so many years, there are times when there is nothing to beat it, so brilliant and beautiful is it. Prince Arthur, I look upon as a strain of this fine flower; Gustave Piganeau is a new Rose, of large size, and apparently good habit, but I think it is too early to judge it; it is not the style of Rose that I care for, but it will much please those who look for size; Heinrich Schultheiss, vigorous and free; Lady Helen Stewart, very bright; Marie Finger, Madame Gabrielle Luizet, a very lovely early-blooming Rose, hardly perpetual, although I have always had blooms of it in autumn; Madame George Schwartz, Madame Lacharme, a very full white Rose; Madame Victor Verdier, Magna Charta, Marguerite de St. Amand, Marie Baumann, perhaps, after all, the most beautiful Rose we have in its class—sometimes it seems difficult to grow it well, while at other times, it is very vigorous; Marquise de Castellane, Merveille de Lyon, Ferdinand de Lesseps, Madame Joseph Desbois, a good light-coloured Rose; Jules Margottin, an old but very delightful garden Rose very sweet-scented, and free-flowering; La France—there is no need to say anything about this universal favourite; Marie Verdier, Mrs. John Laing, a grand Rose, the best of Mr. Bennett's seedlings, very free, and an abundant autumn bloomer; Paul Neyron, very large, but valuable in autumn, though its first flowers are coarse; Prince Camille de Rohan, one of the best of our dark Roses; its constitution is better than many of the same colour; Rosieriste Jacobs, in flower; this seems to be identical with the Duke of Wellington, but it is a better grower; Sénateur Vaisse, an old Rose, sent out upwards of thirty years ago, but still first-rate; Star of Waltham, a fine Rose; Sultan of Zanzibar, a good dark Rose; Suzanne-Marie Rodocanachi, beautiful soft cerise colour; Ulrich Brunner, a large fine Rose, fine habit; Victor Hugo, a beautiful dark Rose; Vicountess Folkestone, a large, fine, and very effective garden Rose; Violette Bouyer, a very beautiful white Rose, with a very slight tint of pink; W. E. Bennett, very fine and bright. I will reserve the Tea Roses for a short notice in a future number. *Wild Rose.*

TREES AND SHRUBS.

INDIGOFERA GERARDIANA.

This is a distinct and useful leguminous shrub. It grows wild in the Western Himalayas at elevations varying from 2000 feet to 6000 feet above sea-level. Round London it grows with freedom in the open border, but farther north it requires some protection, as during severe winters its long wiry shoots are frequently cut to the ground-line; but with the return of spring new growths are made from the old stock, and are freely furnished with light green Acacia-like leaves. The bright rosy-pink flowers are carried in great profusion from the axils of the leaves on spikes several inches long. Where not sufficiently hardy to withstand the winters in the open, it well repays the trouble of planting it against a wall, making fast the principal growths thereto, and allowing the smaller shoots to spread at will; they will then assume a very graceful appearance, and in July and August its brightly-coloured Pea-shaped blossoms will be seen to advantage. In such a position it attains a height of 10 to 12 feet, but in the open border it is seldom seen more than half that height. Besides being of such a floriferous nature, it is also an ornamental shrub. Like a great number of the Leguminosæ, it thrives well in hot dry sandy soils. To increase the stock, select young growths about 3 or 4 inches long; these may be taken off with a sharp knife any time in the months of August and September, at which time the wood will be moderately firm. Dibble the cuttings into light peat soil in pots which have been well crocked, and when completed, give a good watering with a fine-rose can, and plunge the pots in Cocoa-nut fibre in close propagating-cases, with a bottom-heat of about 65° to 70°. In a couple of weeks or so roots will have formed, and they can then with safety be taken out of the cases and hardened off, ready for standing in cold frames for the winter, and the following spring they should be planted out in the nursery ground.

A very good companion to the above is *I. coronilæfolia*, sometimes confused with *I. Gerardiana*, upon which species it is a decided improvement; it flowers a week or ten days later. Its flower-spikes are bigger than the first-named, and the colour of its flowers of a deeper hue. It possesses a very strong constitution, and thrives well under the same treatment as *I. Gerardiana*. *H.*

TRADE NOTICE.

THE partnership which has existed between Mr. G. H. BROUGHAM GLASIER and HENRY J. DOWDEN, Fellow of the Surveyors' Institution, under the title of Messrs. GLASIER & SONS, of 6, Spring Gardens, Charing Cross, having ceased by effluxion of time, the latter gentleman informs the public that he will continue in practice on his own account, at 314, Regent Street, Portland Place, W.

Obituary.

WILLIAM HEATH.—We regret to announce the death of Mr. William Heath, the head of the well-known firm of Heath & Son, of the Royal Exotic Nurseries, Cheltenham. Mr. Heath, who had been long resident in that town, and whose services in various municipal capacities were greatly valued by his fellow townsmen, was a successful man of business, and a constant exhibitor of plants at west country shows, and sometimes in London and other cities. The deceased was an excellent cultivator of stove plants and Dahlias, his last prize, a 1st, at the Cheltenham show, being taken with twenty-four blooms against eight competitors. In the years from 1840 to 1850 he had a good record as a grower of all kinds of florists' flowers, particularly Carnations. The nursery at Cheltenham was started by

him in 1830. Mr. Heath, who, with another guardian of the poor, was visiting the out-paupers in the country district on September 28, was thrown from his waggnette. He died on Saturday, October 8, at the age of eighty-two years.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					Mean for the Week.		Percentage of possible Duration for the Week.	
	Above (+) or below (−) the Mean for the week ending October 15.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 3, 1892.	Below 42°, difference from Mean since Jan. 3, 1892.	More (+) or less (−) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.			
0	2	24	2	93	+ 209	6	200	38.6	20
1	2	25	4	294	+ 240	1	160	22.8	14
2	2	33	0	173	+ 177	13	154	21.1	21
3	3	40	3	159	+ 201	7	143	21.6	29
4	3	36	5	143	+ 241	5	138	19.3	33
5	3	44	2	121	+ 130	2	123	17.8	35
6	2	33	4	193	+ 188	7	159	35.7	33
7	2	36	0	129	+ 160	6	182	30.3	25
8	4	39	1	96	+ 113	3	146	23.2	38
9	3	30	5	158	+ 123	4	176	29.7	26
10	5	35	5	89	+ 133	3	152	29.6	38
* 3	—	62	0	+	51	+ 42	1	143	21.4

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

THE following summary record of the weather for the week ending October 15, is furnished from the Meteorological Office:—

"The weather although fair for a day or two in the middle of the period, was mostly wet and unsettled; especially in the north and east of England, were exceedingly heavy falls of rain occurred between the 13th and 15th. Lightning was seen at some of our southern stations on the night of the 14th.

"The temperature was everywhere below the mean, the deficit amounting to only 2° or 3° in most districts, but reaching 4° in 'England, S.W.' and 5° in 'Ireland, S.' The highest readings, which were observed at times varying greatly in the different districts, ranged from 54° in 'England, N.E.' and 55° in 'Scotland, N.' 'England, N.W.' and 'Ireland, N.' to 60° in 'England, S.' and the 'Channel Islands.' The lowest readings were registered mostly about the middle of the week, when the thermometer fell to 32° or less in all districts, excepting 'Scotland, N.' 'England, N.E.' and the 'Channel Islands.' In 'England, N.W.' 'England, S.W.' and 'Ireland, N.' the minimum readings were as low as 28°.

"The rainfall was less than the mean in Ireland, Scotland, and the southern parts of England, but a trifle more than the mean in the Channel Islands, and considerably in excess over the north and east of England. In 'England, E.' the amount was more than twice, and in 'England, N.E.' more than three times the average.

"The bright sunshine was in excess of the mean over the central and southern parts of England, as well as in the west of Scotland and the south of Ireland, but elsewhere there was a slight deficiency. The percentage of the possible amount of duration ranged from 14 in 'Scotland, E.' and 20 in 'Scotland, N.' to 35 in 'England, S.' and 38 in 'England, S.W.' and 'Ireland, S.'"

MARKETS.

COVENT GARDEN, October 20.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

TRADE still quiet, with fair supplies. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 1 0-3 6	Melons, each ... 0 6-1 3
Cobs 85 0-93 0	Peaches, per doz. ... 2 0-6 0
Grapes, per lb. ... 0 6-1 6	Pine-apples, St. Michael ... 4 0-6 0
Lemons, per case ... 15 0-35 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Ferns, various, doz. 4 0-9 0
Aspidistra, per doz. 15 0-30 0	— per 100 ... 5 0-8 0
— specimen, each 7 6-21 0	Ficus elastica, each 1 6-7 6
Asters, per doz. ... 6 0-12 0	Heliotrope, per doz. 3 0-6 0
Begonia, per doz. ... 6 0-12 0	Lilium, various, doz. 18 0-30 0
Chrysanthemums, p. doz. ... 4 0-12 0	Marguerite, per doz. 6 0-12 0
— large plants, ea. 1 6-2 6	Mignonette, doz. pots 6 0-12 0
Coleus, per doz. ... 3 0-6 0	Palms, various, each 2 0-10 0
Cyperus, per dozen 4 0-10 0	— specimens, each 10 6-84 0
Dacrydium, each ... 1 0-5 0	Pelargonium, scarlet, p. doz. ... 4 0-6 0
Erica, various, per dozen ... 9 0-18 0	Solanums, per doz. 9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 4 0-8 0	Mignonette, 12 bun. 3 0-6 0
Asters, p. doz. bun. 6 0-9 0	Pelargonium, scarlet, per 12 bun. 4 0-6 0
Carnations, 12 blms. 1 0-2 0	— 12 sprays ... 0 6-1 0
Chrysanthemums, p. doz. blooms 2 0-6 0	Primula, double ... 0 6-9 0
— p. doz. bunches 4 0-10 0	Pyrethrum ... 2 0-4 0
Eucharis, per dozen 4 0-6 0	Roses, Tea, per dozen 1 0-2 0
Gardenia, per dozen 1 6-3 0	— coloured, dozen 1 6-3 0
Gladiolus, 12 spikes 1 0-2 0	— yellow (Maréchal), per doz. 2 0-5 0
Heliotrope, per doz. sprays ... 0 3-0 6	— red, per dozen ... 1 0-2 0
Lilac, white French, per bunch 4 6-6 0	— outdoor, 12 bun. 4 0-8 0
Lilium Harrisii, doz. 4 0-9 0	Stephanotis, 12 sprays 4 0-6 0
— various, doz. 1 0-3 0	Tuberose, 12 blms. 0 4-0 9
Maiden Hair Fern, 12 bunches ... 4 0-6 0	Violets, Parme French, per bunch 4 0-5 0
Marguerite, per doz. bunches ... 3 0-4 0	— Czar, French, per bunch 1 6-2 6
Orchids:—	— small French, p. doz. bunches 2 0-2 6
Cattleya, 12 blms. 6 0-12 0	— small English, p. doz. bunches 2 0-3 0
Odontoglossum crispum, 12 blms. 2 0-6 0	

ORCHID-BLOOM in variety.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-
Beans, French, lb. ... 2 6-3 0	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 2 0-3 0	Carrots, per bunch ... 0 4-0 6
Carrots, per bunch ... 0 4-0 6	Parsley per bunch ... 0 6-...
Cauliflowers, each ... 0 3-0 6	Shallots, per lb. ... 0 6-...
Cucumbers, each ... 0 4-0 8	Spinach, per bushel 3 6-...
Endive, per dozen ... 2 0-3 0	Tomatoes, per lb. ... 0 4-0 9
Herbs, per bunch ... 0 9-1 0	Turnips, per bunch ... 0 4-0 6
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

For best samples the trade still continues to improve. Prices remain about same as last quotations. J. B. Thomas.

SEEDS.

LONDON: Oct. 19.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that more attention is now being given to Red Clover seed. The prices asked for French seed are this season extremely high. Alsike and White are just now neglected. Trefoil promises to prove a short crop. The high figures demanded for Rye-grasses check business. Winter Tares realise full prices. There is no change in Rye. Canary-seed keeps strong. Hempseed is steady at the late rise. Some fine new German Rubens is now obtainable at tempting quotations. Bird Millet points upwards. Blue Peas maintain former terms. For Haricots the trade improves. Buckwheat and Linseed are steady.

POTATOS.

SPITALFIELDS: Oct. 19.—Quotations:—Magnums, 45s. to 60s.; Sutton's Early Regents, 50s. to 60s.; Imperators, 60s. to 65s.; Beauty of Hebron, 50s. to 65s.; Early Rose, 45s. to 50s.; Snowdrops, 60s. to 80s.; Reading Wonder, 65s. to 70s.; Bruce Magnums, 60s. to 65s.; Sutton's Abundance, 60s. to 65s. per ton.

BOROUGH: Oct. 18.—Quotations:—English Magnums, 40s. to 60s.; Hebrons, 40s. to 60s.; Snowdrops, 50s. to 65s. per ton.

STRATFORD: Oct. 19.—Quotations:—Light land, 55s. to 70s.; dark land, 45s. to 50s.; Imperators, 50s. to 60s. per ton.

FARRINGTON: Oct. 20.—Quotations:—Magnums, 65s. to 70s.; Imperators, 60s. to 65s.; Sutton's Abundance, 60s. to 65s.; Hebrons, 65s. to 70s.; Reading Giant, 60s. to 65s.; and Snowdrops, 65s. to 70s. per ton.

GENERAL AVERAGES: Oct. 19.—Magnums, 50s. to 65s.; Hebrons, 65s. to 70s.; White Elephants, 80s. to 70s.; White Beauties, 65s. to 70s. per ton.

FRUITS AND VEGETABLES.

SPITALFIELDS: Oct. 18.—Quotations:—English Apples, 2s. 3d. to 6s. 6d. per bushel; American do., 10s. to 17s. per barrel; Pears, 2s. to 4s. 6d.; Prunes, 4s. to 4s. 6d.; Damsons, 3s. 6d. to 4s. 6d.; Bullaces, 2s. to 2s. 6d. per half-sieve; English Tomatoes, 4s. to 5s. per peck; foreign do., 1s. to 2s. per box; Savoy, 2s. 6d. to 5s.; Cabbages, 4s. to 6s.; Collards, 2s. 6d. to 5s.; Cauliflowers, 3s. to 7s.; Marrows, 3s. 6d. to 8s. per tally; Spinach, 1s. 6d. to 2s. 6d.; Scarlet Beans, 2s. 6d. to 3s.; Beetroot, 1s. 6d. to 2s. 6d. per bushel; Brussels Sprouts, 2s. to 2s. 3d. per half-sieve; Turnips, 2s. to 2s. 6d. per bag; do., 2s. to 2s. 6d.; Carrots, 1s. 6d. to 3s.; Onions, 3s. 6d. to 4s. 6d.; Parsley, 1s. 6d. to 2s. 6d. per dozen bunches; Mint, 1s. 6d. to 2s. 6d. per dozen bunches; Endive, 6d. to 1s.; Cabbage Lettuce, 3d. to 6d.; frame Cucumbers, 2s. to 3s. per dozen; Celery, 10d. to 1s.; Horseradish, 1s. to 1s. 2d. per bundle; Spanish Onions, 5s. 3d. to 6s. per case; Dutch do., 4s. 6d. to 6s. 6d.; Belgian do., 3s. 9d. to 5s. 6d. bag of 110 lb.; Cos Lettuce, 4d. to 1s. per score; Carrots, 25s. to 50s. per ton.

BOROUGH: Oct. 18.—Quotations:—Cabbages, 3s. to 4s.; Marrows, 3s. 6d. to 4s. per tally; Cauliflowers, 1s. to 1s. 6d. per dozen; Brussels Sprouts, 2s. to 2s. 6d. per half-sieve; Lettuce, 6d. to 1s. per score; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 1s. 6d. per dozen bunches; English Onions, 4s. to 4s. 6d. per cwt.; Horseradish, 2s. to 2s. 3d.; foreign do., 1s. 6d. to 1s. 9d. per bundle; English Apples, 2s. 6d. to 10s. per bushel.

STRATFORD: Oct. 19.—There has been an excellent supply of all kinds of produce at this market during the past week, for which a brisk trade was done as under:—Cabbages, 3s. to 5s. per tally; Savoy, 3s. 6d. to 5s. do.; Collards, 2s. to 2s. 6d. per dozen; Cauliflowers, 1s. 6d. to 1s. 9d. per dozen; do., 3s. to 6s. per tally; Turnips, 1s. 6d. to 2s. 6d. per dozen bunches; do., 40s. to 50s. per ton; Carrots, household, 30s. to 40s. do.; do., cattle feeding, 24s. to 30s. do.; Parsnips, 60s. to 65s. do.; Mangolds, 15s. to 20s. do.; Swedes, 20s. 6d. to 28s. 6d. do.; Onions, English, 6s. per bag; do., Dutch, 4s. 6d. to 5s. do.; Apples, English, 2s. to 5s. per bushel; do., American, 12s. to 14s. per barrel; Cucumbers, 1s. to 1s. 3d. per dozen.

FARRINGTON: Oct. 20.—Quotations:—Apples, King Pippins and Wellingtons, 4s. per bushel; Blenheim, 4s. 6d. do.; English Onions, 110s. to 120s. per ton; Belgian do., 100s. do.; Spanish do., 6s. 6d. per case; Carrots, 50s. per ton; Parsnips, 65s. to 70s. do.; Celery, 10s. per dozen rolls.

HAY.

Averages.—The following are the averages of the prices at the metropolitan markets during the past week:—Clover, prime, 80s. to 115s.; do., inferior, 46s. to 75s.; Hay, best, 60s. to 110s.; do., inferior, 26s. to 50s.; and Straw, 26s. to 41s. per load.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (bushel) for the week ending October 15, and for the corresponding period last year:—1892: Wheat, 28s. 1d.; Barley, 27s. 6d.; Oats, 17s. 8d. 1891: Wheat, 34s. 9d.; Barley, 29s. 6d.; Oats, 18s. 1d.

NOTICES TO CORRESPONDENTS.

*** PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

APPLE: R. C. D. Send better specimens.

BOOKS: *Amicus*: The last edition was in 1884; it is still the most complete in the account of the natural orders, but the physiological portion is somewhat out of date.

CATLEYA LABIATA AND C. VAROCQUIANA: J. J. The second is a variety of the first-named species. If distinct species are meant, you could scarcely exhibit them as being "distinct" (species) of Orchids.

CORRECTIONS.—Back Numbers of this Journal. All numbers are out of print up to 1887, but not inclusive of that year, as was stated in error in our last. In our last issue, NAMES OF PLANTS, No. 2, W. Naish, the plant-name Nerine, was accidentally spelled Nermi.

CHRYSANTHEMUM: W. G. Yes, a sport; there are many as good.

CONTRACT TO SUPPLY ROSE STOCKS: W. D. Consult a solicitor. It is a nice point.

CUCUMBER ROOTS: H. D. A bad case of eel-worm attacking the roots. Figures and descriptions have been repeatedly given in our columns. Burn the plants, turn out the soil, and start afresh with new soil.

ENDOSMOMETER: C. G. B. A funnel and a bit of membrane (bladder) stripped of its outer covering to tie over the nozzle, and a graduated scale are all that are wanted. You might make one.

FRUIT SALESMEN IN COVENT GARDEN MARKET: W. L. We cannot undertake to recommend salesmen. Consult our advertising columns.

INGA SEEDS: G. A. M. Seeds of Guizotia oleifera, a Composite, like a small Sunflower.

INSECT: C. A. P. The insects you send are millipedes (fig. 78 (4) below), often confused with wireworms, and for your purpose equally objectionable. It has nothing to do with any fly. Burn all the affected plants, turn out the soil and get fresh soil, carefully examining it to see that it does not contain some

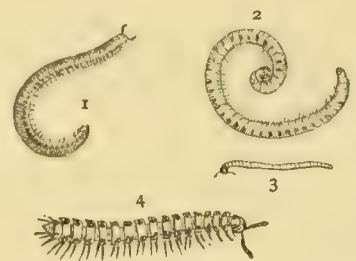


FIG. 78.—MILLIPEDES.

more of your enemies. If your plants are in pots you can trap some of the insects with pieces of Potato, Carrot, &c., and having trapped them, immolate them. Only beware of the anti-vivisectionists!—H. A. B. See the answer to "W. H. W." on p. 474, of our last issue. It is evidently a beetle.

NAMES OF FRUITS: No. 7. 1, Lady Henniker; 2, Cellini; 3, not recognised; 4, Minchall Crab; 5, not recognised; 6, Manks Codlin; 7, Louise Bonne.—J. Ratcliffe. 1, Striped Beefing; 2, Belle et Bonne; 3, Dutch Mignonette; 4, Northern Greening; 5, Fearn's Pippin.—Geo. Jones. 1, Bess Pool; 2, Fearn's Pippin; 3, Cox's Orange Pippin.—W. M. 1, Pitmaston Duchess; 2, Beurré Bachelier.—A. B. 1, King of the Pippins; 2, Bedfordshire Foundling; 3, not recognised; 4, Ribston Pippin; 5, Cluster Golden Pippin.—H. & S. Apple Tower of Glamis.—J. W. 1, Lamb Abbey Pearmain; 2, Warner's King; 3, Golden Reinette; 4, Pearson's Plate; 5, Round Winter Nonsuch; 6, Scarlet Nonpareil; 7, Hoary Morning; 8, Grange's Pearmain. Pears next week.—G. Abbey. 1, Emille d'Heyat; 2, Glou Morceau; 3, Urbaniste; 4, Knight's Monarch.—J. A. L. 1, Round Winter Nonsuch; 2, Mère de Ménage; 3, not recognised; 4, Striped Beefing; 5, Scarlet Nonpareil; 6, not recognised.—J. H. J. Apple Mère de Ménage; Pear, too far gone.—Totmor. 1, too ripe; 2, Shobden Court; 3, Beurré Hardy; 4, Beurré de Capiaumont; 5, Vicar of Winkfield; 6, General Todleben; 7, Louise Bonne.—Malcolm Brodie. Pears: 1, Marie Louise d'Uccle; 2, Thomson's; 3, Vicar of Winkfield; 4, Urbaniste; 6, Crème de Flandres. Apples: 5, Yorkshire Greening; 7, Minchall Crab; 8, Emperor Alexander; 9, not recognised; 10, Warner's King? 11, Cox's Orange Pippin; 12, Cox's Pomona.

NAMES OF PLANTS: J. B. Stone. 1, Catasatum sp. (next week); 2, Catasatum purum; 3, C. tridentatum; 4, Epidendrum nocturnum.—Davallia. 1, Davallia bullata; 2, D. Tyermanni; 3, D. canariensis, Gymnogramma chrysophylla, Selaginella Mertensii, Pteris (Doryopteris) palmata, Oncidium flexuosum.—T. S. Helianthus multiflorus, Composite; Physalis Alkekengi, Solanad; Narcissus italicus.—Nomen. An Aralia; near to chinensis. We cannot tell for certain from the withered bit sent.—Anderson. 1, not recognised;

2, *Pittosporum tenuifolium*; 3, *Coccoloba platycladon*; 4 and 5, *Farfugium grande* (Composite).—*T. J. & Sons*. *Griselinia littoralis*; excellent for sea-side (Cornaceae), New Zealand.—*Reginald*. *Hemp, Cannabis sativa*, Urticaceae.—*Head Gardener*. *Carduus benedictus*, the Virgin's Thistle (Composite); *Nicotiana glauca* (Solanad).—*A. W.* 1, *Picea excelsa* variety; 2, *P. orientalis*; 3, *P. Alcockiana*; 4, *Pinus monticola*; 5, an Ash—cannot tell which from scrap sent; 6, *Thuja orientalis* var.; 7, *Juniper*—impossible to name; 8, a *Juniper*—cannot be recognised from a scrap; 9, *Spiraea Fortunei*; 10, *Ilex microphylla*; 11, *Cornus tricolor*.—*E. M. C.* If you could see the flower as it reached us, you would not wonder that we cannot name it.—*C. H.* Ferns, next week; 6, *Euphorbia splendens*.—*A. B.* *Pyrethrum uliginosum* (Composite).—*Harris*. Next week.—*Brun* (Lyons). *Rosa*. No letter received at present.—*W. O.* *Cattleya granulosa*. Send all communications to the editor, and not to any member of the staff individually.—*J. C.* 1, *Cotyledon*—send when in bloom; 2, *Pilea muscosa*; 3, *Begonia* sp.; 4, *Callicarpa purpurea*; 5, *Croton*: we cannot undertake to name these plants—send to a nurseryman; 6, *Bromeliad*—send when in flower; 7, *Pellionia Daveauiana*.

NURSERY STOCK: *W. B.* The time allowed for clearing land of the saleable stock varies in different parts of the country. Twelve months is a reasonable and the more generally adopted limit. We have not before heard of two years being granted.

PROFITABLE SALE OF CUT BLOOMS, &c.: *Profit*. We are unable to afford you any other information than that which will be found in our pages in answer to similar enquiries. One man will starve where another succeeds.

SEEDLING PINKS: *B. L.* Very good for borders, but hardly suitable for pot culture. A purple self. What is the parentage?

SHRUBS: *C. P.* If the shrubs are part of your trade-stock you can remove them, and that too at the suitable time for removing them. Some landlords will grant a whole year in which to effect the removal of growing stock. If they are not saleable stock you cannot remove them if the landlord objects, nor can you make him pay you for them.

LATE PRODUCTS OF THE GARDEN: *T. W.* The Peas are good, but *Ne Plus Ultra* would be better still. The Perfect Marrow must not be despised as a late bearer. It is not at all unusual for Strawberries to bear in the autumn. Forced plants planted out after being carefully hardened off frequently so do if the season is warm. There are several varieties of Raspberries which are autumn bearers.

WASTE IN THE CROPS OF PEACHES AND NECTARINES: *P. K.* Many causes lead to loss of fruit which only those on the spot can detect. We may specify a few of the more common of these. The crop arriving at the ripening stage all at once or nearly so; the depredation of squirrels, wasps, hornets, flies, earwigs, and sometimes of blackbirds and thrushes. The pilfering of the fruit by persons having access to the garden, and the neglect to remove projecting nails and studs from the neighbourhood of the fruit, whereby wounds are made in the skin, and decay set up. When the fruits are gathered daily as they approach ripeness, and placed in a cool dry place, the loss from decay need not exceed one in a dozen, if the consumption of the fruit keep pace with its ripening.

COMMUNICATIONS RECEIVED.—*W. B. G.*—Comte de K.—*D. M.*—*R. D.*—*J. D.*—*F. v. D.*—*Dr. Goetze*, Griefswald.—*Canon E.*—*H. W.*—*H. J. V.*—*H. W. W.*—*M. H.*, Melbourne.—*Baron von Mueller*, Melbourne.—*J. F. J.*, Brooklyn.—*D. T. F.*—*F. R.*, Quedlinburg.—*T. B. H.*—*M. Y.* & Son.—*J. K. B.*, Utrecht.—*R. A. R.*—*J. J. W.*—*G. W.*—*R. M.*—*F. R.*—*E. Webb* & Sons.—*G. M. C.*, Ouid., next week.—*J. S.*—*J. D.*—*E. M.*—*W. T. C.*—*M. T.*—*W. H. D.*—*Vagabond*.—*A. P.*—*T. H.*—*H. C.*—*J. Chalmers*.—*Harris*.—*C. H.*—*W. B.* and *G. M.* (next week).

FRUITS RECEIVED.—*A. Bagg*.—*C. W. E.*—*D. McD.*—*W. A.*—*T. J. & Sons*.—*Rob Roy*.—*Ridley*.—*N.*, Devon (all next week).

SPECIMENS RECEIVED.—*H. A. B.*

RASPBERRY CANES.—*Norwich Wonder*, Carter's Prolific, also Fastolf, strong and well rooted. Not less than 1000 canes supplied. *ALBERT BATH*, Vine Court, Sevenoaks, Kent.

VICTORIA PLUMS, rough trees, 35s. and 55s. per 100. Standard-trained PEACHES and NECTARINES, fine trees, with good roots. *WILL TAYLER*, Osborn Nursery, Hampton Hill, Middlesex.

CELEGYNE CRISTATA, well grown, with bloom-spikes; also the CHATSWORTH, TRENTHAM, and MAXIMA VARIETIES. *TRUSTEES*, late J. STEVENSON, Timperley, Cheshire.

AZALEA INDICA.—Fine plants, well set with buds. Fine for Forcing. Only best sorts. 15s. to 18s. per dozen. *DEUTSCHE PERLE*, very fine, 21s. per dozen. Apply to *J. LION*, Park Nursery, Stanmore, Middlesex.

DESCRIPTIVE CATALOGUE.—ROSES, FRUIT TREES, RHODODENDRONS, CONIFERS, DECIDUOUS and EVERGREEN TREES and SHRUBS, FOREST TREES, CLIMBERS, &c., free on application. *H. LANE and SON*, Nurseries, Berkhamsted, Herts.

LAINGS' ROSES, FRUIT TREES, &c., are especially fine this Season, and we cordially invite inspection of the large and healthy stock of all kinds of Fruit Trees, Roses, Vines, Seakale, &c., as also Forcing and Flowering Plants. Descriptive Catalogues post-free.—*JOHN LAING and SONS*, Nurseries, Forest Hill, London; also Catford, Kent.

1000 BOUVARDIAS, fine, in bud, 9s. per doz.; 5000 CHRISTMAS ROSES, strong for planting, 10s. per 100; 10,000 SEAKALE for forcing, 12s. 6d. per 100, 95s. per 1000; 10,000 PICEA, PINUS, &c., fine ornamental plants, 9s. per dozen.—*WALSHAW and SON*, Scarborough.

PERNS! FERNS!!—Trade.—Greenhouse and Store, 25 saleable sorts, 12s. per 100; out of pots, at 10s. Strong Seedling Ferns, stores, in variety, 6s. per 100, 50s. per 1000. Large Adiantum cuneatum, Aralias, Cyperus, all in 48's, 6s. per dozen. Palms, Ficus, Hydrangeas, 1s. each. Large Ferns, 10 best sorts, 5s. 6d. per dozen, in 48's. Adiantum cuneatum and P. tremula, extra size, in 2½-inch pots, 16s. and 20s. per 100. Packed free, Cash with Order. *J. SMITH*, London Fern Nurseries, Loughboro' Junction, S.W.

150,000.—Special Offer of Kentias. *W. ICETON* has a large quantity of the above to offer, very reasonable, at from £7 10s. per 1000. Thumbs, well-established, £10 per 1000; in 60's, well established, at £30 per 1000. *W. ICETON*, Putney, S.W.

FRUITING DWARF-TRAINED PEACHES.—Grand extra-sized trees, from Cold-house. Sizes and prices on application. POT-PEACHES, fine fruiting trees, 6s. 6d. each; 18 Fruiting Canes, VINES, in 10-inch pots, Hamburgs, 18sters, and 2 Madresfelds, 6s. 6d. each. *J. S. HEWARD*, Arundel Nurseries, Littlehampton.

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" *MAGNIFICA* {
PINUS AUSTRIACA { 3, 4, 5, 6, and 7 feet.
" *LARICIO* {
THUOPSIS BOREALIS { 5 to 8 feet.
" *DOLOBRATA* {
HOLLIES, GREEN, Common, up to 10 and 12 feet.
" *HODGINS* {
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ABIES DOUGLASII, 5 to 10 feet.

THUIOPSIS BOREALIS, 2 to 7, and 8 feet.

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THUIA LOBBII, 3 to 8 feet.

WEYMOUTH PINE, 7 to 8 feet.

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LAURELS, COLCHICA, 2 to 6 feet.

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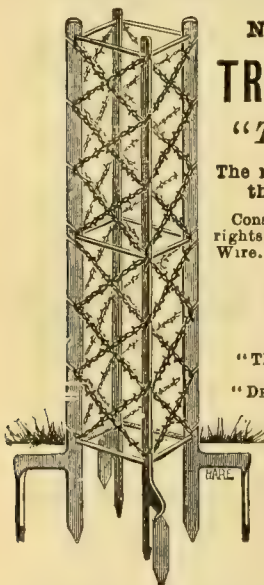
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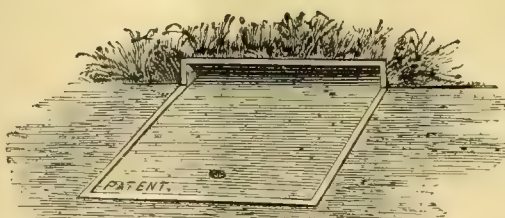
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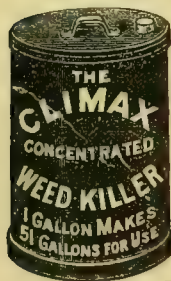
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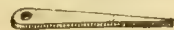
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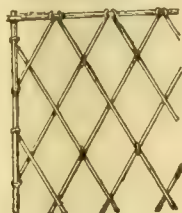
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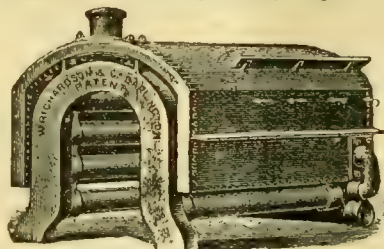
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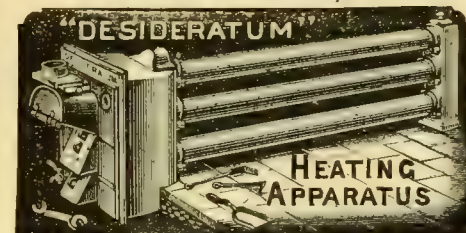
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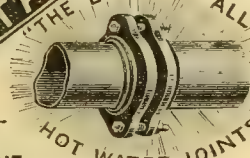
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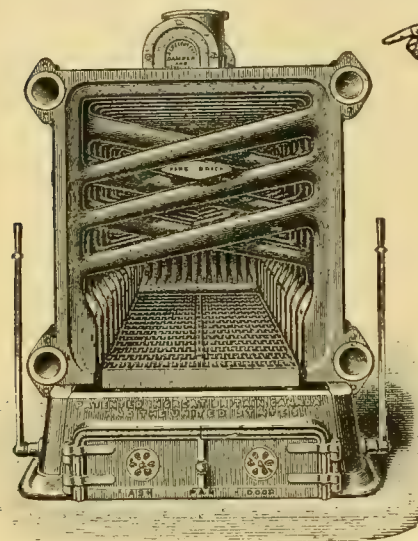
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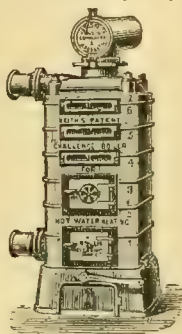
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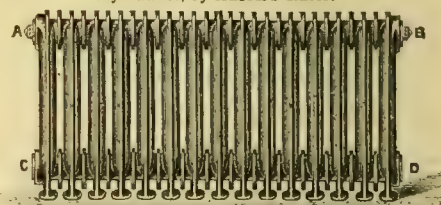
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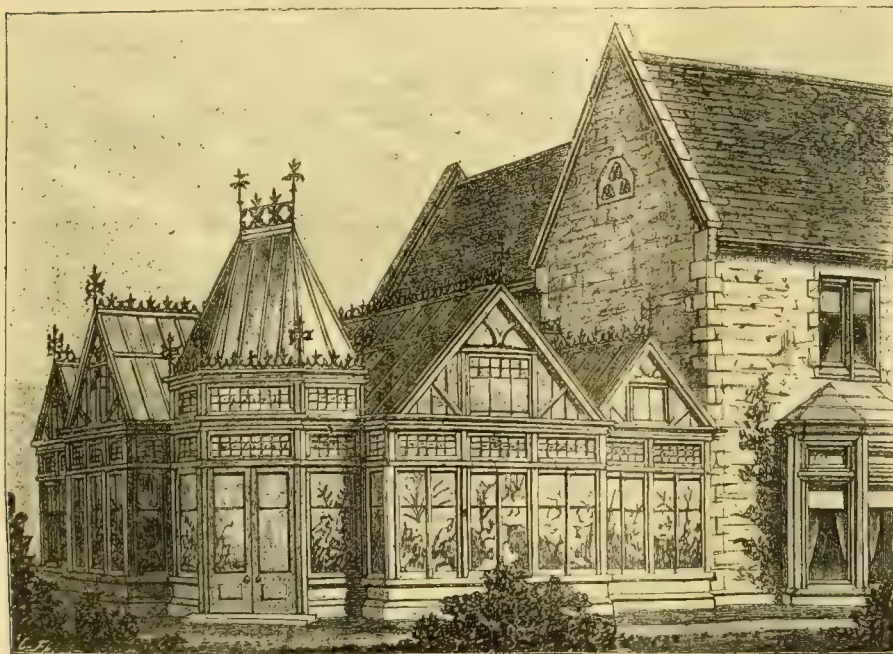


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The GARDENERS' CHRONICLE

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J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 10, Victoria Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers,

CENTRAL AUCTION ROOMS AND ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Monday, October 31. PLANTS FROM BELGIUM.

4000 specially fine Berlin Crowns LILY OF THE VALLEY.
500 grand Bulbs of LILUM LONGIFLORUM, English-grown.
13,000 Bulbs of LILUM HARRISII, being the contents of 43 cases.
50 lots of choice named DAFFODILS, CHIONODOXAS, &c.
Also a consignment received direct from Belgium, comprising
100 AZALEA INDICA.
50 " MOLLIS.
100 DRACENAS.
DEUTZIA GRACILIS, PALMS, comprising Kentias, Latantias, Phoenix, and Arecas; 75 plants, including ASPIDISTRAS, FICUS, and ARALIAS.
100 Chinese Sacred LILIES, GLOXINIAS, BEGONIAS, ORNAMENTAL PLANTS, GREENHOUSE and STOVE FERNS from an English Nursery; HARDY BULBS, SPIREA JAPONICA, IRIS, &c.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, October 31, at 12 o'clock precisely.

Knockholt, Kent.

SALE of well-grown and thriving NURSERY STOCK.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. A. Waterman to sell by AUCTION, on the Premises, the Hickmandias Nursery and Fruit Grounds, Knockholt, Kent, 2½ miles from Halstead Station, S.E.R., on WEDNESDAY NEXT, November 2, at half-past 12 o'clock, a portion of the well-grown and splendidly-rooted

NURSERY STOCK,

including 3000 Pines in variety, 650 Spruce Firs, 2 to 9 ft.; 1300 Laurels, of sorts; fine lot of specimen Conifers and Evergreen Shrubs, Rhododendrons, Yews; 6500 Standard Ornamental Trees, 6 to 11 ft.; 500 Ash, Copper Beech, large quantity of Standard and Pyramid Fruit Trees, including Lord Suffield, Wellington, and other Apples, Pears, Plums, and Cherries; 5000 Raspberry Canes, 300 Strong Cob Nuts, 1250 Ivies, 4 to 5 feet; flowering Shrubs, Clematis, Herbaceous Plants, &c.; Light Spring Pony Van, Pony Cart, Artillery Wagon, in first-class condition; Chaff-cutting Machine, Manure Pump, Set of Harness, and other items. Conveyances will meet the morning trains at Halstead Station on day of Sale to convey intending purchasers to the Nursery.

May now be viewed. Catalogues had on the Premises, at the Station Master at Halstead Station, at the Crown and Horse Shoe Hotels, Knockholt, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Isleworth.

IMPORTANT SALE of Valuable NURSERY STOCK, in splendid condition for removal, by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, the Arboretum and Wood Lane Nurseries, Isleworth, near the Isleworth Station, on THURSDAY and FRIDAY NEXT, November 3 and 4, at 12 o'clock precisely each day, a portion of the exceptionally well-grown and particularly healthy NURSERY STOCK, for the growth of which these Nurseries are so well known. The Sale comprises a splendid lot of CONIFERS and EVERGREENS in the Borders for immediate effective planting, Standard Ornamental Trees, a large quantity of well-grown Eucalyptus and small Conifers, adapted for the Trade for growing on; 4000 Silver, Golden, and other Eucalyptus; Cupressus laeta; 1000 Cupressus erecta viridis, 350 Araucaria imbricata, 1500 English Yews, Phillyrea laurifolia Jackmanni, superb; 1000 Clematis of the best sorts; Hardwicke Box, Solanums in berry, Palms, Kentias, 4 to 5 feet; Thrinax elegantissima, Cocos Weddelliana, 10 Maiden Victoria Plants, 200 Fruiting and Planting Vines, Araucaria excelsa, White Jasmine in pots, and other Climbers.

May be viewed, and Catalogues had on the Premises, at the Royal Vineyard Nurseries, 2, Hammersmith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Thursday Next.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, November 3, at 12 o'clock—

50 Plants of ARALIA CHABRIERI, a beautiful foliage plant.	36 RHODODENDRONS
200 AZALEA INDICA	50 DEUTZIA PERLE AZALEAS
100 " MOLLIS	24 Fine Selected Plants of AZALEA FLAG OF TRUCE
24 DRACENA INDIVISA	
36 ASPIDISTRAS	

From well-known Nurseries in Belgium.

Greenhouse FERNS, DAFFODILS, GLOXINIAS, BEGONIAS, HARDY BULBS and PLANTS, &c.

On view morning of Sale, and Catalogues had.

Great Northern Railway.

WITHOUT THE LEAST RESERVE.

GREAT TRADE SALE OF ORCHIDS.

Owing to the Great Northern Railway Company requiring a portion of the Nursery and Orchid-houses for the erection of a Railway Station on the Establishment,

MESSRS. PROTHEROE AND MORRIS have been instructed by Messrs. F. Sander & Co., St. Albans, to sell by AUCTION, on TUESDAY, November 22, about 10,000 ORCHIDS, to make the necessary room. This will include thousands of ODONTOGLOSSUM ALEXANDRE, of our famed type, absolutely unflowered; large quantities of Market CATTLEYAS and LELIAS, &c. The bulk of the Orchids offered in this Sale will be specially suitable for cut-flower purposes and growing for Market.

The plants will be removed, for convenience sake, to Messrs. Protheroe & Morris' Rooms, 67 and 68, Cheapside, London, E.C.

Tottenham, N.—Annual Sale—Tuesday Next.

Adjoining the Tottenham Hale Station, Great Eastern Main Line, close to the Bruce Grove Station, on the Great Eastern, and also South Tottenham Station, on the Tottenham and Hampstead Railways.

IMMENSE SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, The Hale Farm Nurseries, Tottenham, N., on TUESDAY NEXT, November 1, at 11 o'clock precisely, in consequence of the unusually large number of lots, by order of Mr. Thomas S. Ware, an enormous quantity of well-grown

NURSERY STOCK,

comprising 30,000 named CARNATIONS and PICOTEEES, consisting of all the finest varieties including Germania, the best yellow; Mrs. Reynolds Hole, salmon-apricot; Mrs. Frank Watts, the best white; Redbraes, purple-edged Picotees; Sir Beauchamp Seymour, orange-buff; crimson Gloire de Dijon, large white Gloire; Alice Ayres, pure white, striped carmine; Princess Alice, rich bright salmon; Napoleon III., bright scarlet, one of the best; Fireman, rich bright scarlet; and many other first-class varieties in the finest possible condition. Also

5000 NEW CARNATIONS.

offered for the first time, consisting of Florence Emily Thoday, new white; Danger, new scarlet, a grand market variety; Mrs. Rieffel, glowing apricot; Lord Byron, bright scarlet, very large; and Horace, rich scarlet.

25,000 HER MAJESTY PINK.

the finest variety ever raised. Thousands of SOUVENIR DE LA MALMAISON CARNATIONS, both blush and crimson, in the finest possible condition; strong plants in pots.

20,000 HOLLYHOCKS, PYRETHRUMS, &c.

25,000 CLEMATIS.

and other Climbers, fine strong stuff, including Jackmanni, Jackmanni alba, Beauty of Worcester, Countess of Lovelace, Anderson Henri, Gipsy Queen, and other first-class varieties. Also 2500 Ampelopsis Vetchi, 4 to 5 feet; 1000 A. hederaea; 5000 A. hirsuta, 2½ to 5 feet; Hogg, 2 feet; humifolia, 2 feet; and purpurea, 3 to 4 feet; 500 Escallonia, including montevideusis, 3 to 4 feet; macrantha, 2½ feet; Ingrami, 3 feet; 200 Bigonias, including coccinea, radicans, sanguinea, and Thunbergi, fine strong stuff, 3 feet; 1000 Hedera maderiense variegata, 3 to 4 feet; 3000 in variety, including H. digitata, 4 to 5 feet; H. Donierale, 3 to 4 feet; H. taurica, 3 to 4 feet; H. Cavendishi variegata, 3 feet; H. latifolia maculata, 5 feet; H. marginata rubra, 3 feet; H. marmorata minor, 3 to 4 feet; and many other varieties. Many thousands of Akebia quinata, Coteaster Simmondsi, strong, 2 feet; Plumbago, of sorts; Cydonia japonica and Maulei, fine stuff, 2 feet; Jasminum nudiflorum, 2 to 3 feet; J. n. aureum, 3 feet; Lonicera, in great variety, aurea reticulata, 3 feet; brachypoda, 3 feet; flexuosa, 3 feet. Passiflora, corulea and Constance Elliot, very strong stuff, 3 feet; Tacsonias, of sorts; T. Van Volxemi and exoniensis, 3 to 4 feet; and many other popular varieties.

5000 LILIES, &c.

Choice Home-grown Lilies, named Narcissus, Iris, and many others; among the Lilies will be found extraordinary fine roots of Lilium colchicum, Browni chalcidolum, Humboldtii, the new Bloomerianum magnificum, from Mexico, Martagon album, pardalinum, dalmaticum, Washingtonianum, the rare Wallichianum superbum, Wallacei, speciosum in great variety, and numbers of other rare and beautiful varieties;

250,000 BERLIN CROWNS LILY OF THE VALLEY.
Fine forcing Crowns, and all the true German varieties; 1000 New Dwarf ROSES, 1000 BAMBUSA GRACILIS,

100,000 FORCING PLANTS and BULBS.
All first-class forcing-stuff, including 5000 Spirea multiflora compacta, S. palmata, palmata alba, japonica, Lily of the Valley, Clumps and Crowns; Delytra spectabilis, Narcissus in great variety, Lilies in variety, Christmas Roses in variety, fine Clumps for Forcing, and numbers of other plants and bulbs adapted for forcing purposes;

100,000 SEAKALE and ASPARAGUS,
Exceedingly fine forcing crowns;

ROSES, ORNAMENTAL TREES, and SHRUBS;
A grand lot of Maréchal Niel in pots, 10 to 12 feet; Gloire de Dijon, 6 to 8 feet; White and Yellow Banksian; Common China, Pompon de Paris, W. A. Richardson, fine stuff, in 4's and 3's, 3 to 6 feet; Bouquet d'Or, and many others; Maiden's Blush, Lanei, York and Lancashire; Standard and Dwarf Roses in variety, including all the popular varieties; 2000 Veronica Traversi, buxifolia, carnosula; Cistus, of sorts; 500 Olearias in variety, Lombardy Poplars, fine stuff, 10 to 16 feet, well furnished; Hydrangea paniculata grandiflora, good stuff; American Blackberries, hundreds of Black Italian Poplars, and many other useful stock; PERENNIALS, including thousands of Eulalia and other Ornamental Grasses, Everlasting Peas, Anemone japonica, several varieties; Hemerocallis, Sunflowers, Gaillardias, Poppies, Centaureas, Doronicums, Lychnis viscaria splendens plena, Campanulas, Rudbeckias, Yuccas, a grand Collection of IRIS, fine strong clumps, including the best forcing varieties; Pumila of sorts, Olbiensis of sorts, Sibirica of sorts, Florentina, the sweet-scented variety; Germanica, in great variety; Kempferi, and many others; Delphiniums, thousands of Hollyhocks, and hundreds of other important plants, too numerous to mention.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Feltham. — Preliminary Notice.

By order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION on the Premises, the Nurseries, Feltham, on FRIDAY, November 11, CONIFERS of the best kinds, Green and other Hollies, Laurels, Privet, &c.

Full particulars will appear in future announcements.

Tuesday Next.

CLEARANCE SALE. ABSOLUTELY WITHOUT RESERVE. SECOND PORTION of the extensive STOCK of ORCHIDS, at the Clapham establishment, by order of Messrs. Charlesworth, Shuttleworth & Co. (of Heaton, Bradford, and Clapham), in consequence of expiration of Lease. The plants being removed for convenience of Sale to the Auction Rooms.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 1, at half-past 12 o'clock, the SECOND PORTION of the extensive and well-grown Collection of ORCHIDS, comprising large quantities of ODONTOGLOSSUM CRISPUM (ALEXANDRE), and other choice varieties; CATTLEYAS, MASDEVALLIAS, CYPRIPEDIUMS, &c., especially lotted for Large and Small Buyers, and particularly worthy of the attention of the Trade as well as Private Buyers.

On view morning of Sale, and Catalogues had.

Friday Next.—Without Reserve.

The first portion of the valuable and well-grown COLLECTION of ORCHIDS formed by S. Lutwyche, Esq., of Eden Park, Beckenham, FOR SALE, in consequence of his removal to this Residence.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 4, at half-past 12 o'clock, the first portion of this valuable collection of well-grown ESTABLISHED ORCHIDS. Amongst the plants may be mentioned—

Lelia elegans Turneri	Vanda Denisoniana
" alba	" Sanderiana
" anceps Dawsonii	Dendrobium d'Albortisii
" alba	" Crassinode alba
Lycaste Skinneri alba	" Wardianum alba
" " Xanthoglossa	" nobile alba
" plana Tautzii	" nobiliss, from ori-
Odontoglossum Schillerianum	" ginal plant
" Insigne splendens	" Cooksoni
Cattleya labiata vera	" hybrid Schneiderianum
" chocoensis	" Leech-anum
" Sanderiana	" rhodostoma
" triane marginata	" eudocharis
" Laurenceana	" Dominicanum
" exoniensis	" nobile, four immense
" Gaskelliana alba	specimens in No. 1 pots

and OTHERS.

On view morning of Sale, and Catalogues had.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.
MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY, at 12 o'clock, large consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland. Lotted to suit the Trade and Private Buyers. 12 tons are sold every week.

On view morning of Sale, and Catalogues had.

The Alexandra Palace, Muswell Hill, N.

Close to the Palace Gates and Wood Green Railway Station. Unreserved Sale of the SPECIMEN and other STOVE and GREENHOUSE PLANTS, by order of the London Financial Association.

Important to Noblemen, Curators of Botanical and Winter Gardens, the Furnishing Trade, and Others.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to sell by AUCTION, on the Premises (in the Large Conservatory attached to the Palace, admittance by Wood Green entrance only), the Alexandra Palace, Muswell Hill, N., on THURSDAY, November 10, at 12 o'clock precisely, without the least reserve, the whole of the valuable

SPECIMEN STOVE and GREENHOUSE PLANTS,

including noble examples of the following:—
Phoenix dactylifera, 2 plants, 200 large Azalea indica
in 24-inch tubs
Cyathia dealbata, two specimens; stems 8 feet—24 and 18 fronds
" 8 feet, 30 leaves
Dicksonia antarctica, two; 5 feet stems, 50 and 40 fronds
Chamaerops Fortunei, 8 feet stem, 50 leaves
" several in 14-inch pots
Scaevola elegans, very fine plant; stem 23 feet, 12 large leaves
Araucaria excelsa, 20 feet
" Bidwillii, 2 grand plants, 40 feet high
Latania borbonica, splendid specimen; stem 2 feet, 6 in., 20 leaves, 16 feet round.
Sabal umbraculifera, 18 fronds, 12 feet through; stem 5 feet
200 Heliconias, 150 Agapanthus umbellatus, 200 Genista fragrans, Ferns in great variety, Imantophyllums, Acacia armata, 300 Calla aethiopica, Yucca recurva, Aloe americana and variegata, Aspidistras, Grevilleas, and hundreds of other Greenhouse and Ornamental Plants.

May be viewed on and after November 5. Admission by Catalogue only, obtainable of the London Financial Association, 1, Draper's Gardens, E.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Tuesday, November 8.

IMPORTATION of ANGRECUM from NATAL.
360 PLANTS and 12 CLUMPS. Collector describes them as follows:—Flowers milk-white, from 2 to 1 inch in diameter, resembling A. sesquipedale, only smaller.

MESSRS. PROTHEROE AND MORRIS will include the above in their ORCHID SALE on TUESDAY, November 8.

EXPIRATION OF LEASE.

SECOND CLEARANCE SALE OF CHOICE ORCHIDS.

(UNRESERVED SALE.)

By order of Messrs. CHARLESWORTH, SHUTTLEWORTH & CO.,
Of HEATON, BRADFORD, YORKSHIRE, and CLAPHAM, S.W.,

CONSISTING OF

ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), and other choice varieties;
ONCIDIUMS, CATTLEYAS, MASDEVALLIAS, CYPRIPEDIUMS, &c.

TO BE SOLD BY AUCTION BY

MESSRS. PROTHEROE AND MORRIS, at their Central Sale Rooms,
67 & 68, Cheapside, E.C., on TUESDAY NEXT, November 1, at half-past 12 o'clock precisely.

Stafford.

Two Days' CLEARANCE SALE of the whole of the NURSERY STOCK growing at the Branch Nursery, by order of Messrs. Sandy & Son, who have disposed of the Home Nursery and Business, IMPORTANT to GENTLEMEN, NURSEYMEN, and OTHERS engaged in PLANTING.

MESSRS. PROTHEROE AND MORRIS will
SELL BY AUCTION, on the Premises, the Farm Nursery, Stafford, on TUESDAY and WEDNESDAY, November 8 and 9, at 12 o'clock precisely each day, without the least reserve, the well-grown

NURSERY STOCK,

comprising 10,000 Oaks, 16,000 Scotch Firs, 12,000 Spruce Firs, 18,500 Beech, 3500 Horse Chestnuts, 8000 Larch, 900 Limes, 16,500 Pinus austriaca, 3000 Pinus laricio, 300 P. cembra, 5500 Sycamore, 3000 Birch, 4500 Hollies, 150 Weeping Ems, 350 Copper Beech, 400 Double Pink and White Thorns, 350 Aucubas, 900 English Yews, 300 Azalea pontica, 200 Cupressus Lawsoni, 1500 Pears, 5500 Apples, 25,000 transplanted Quick Rose Stocks, and various other items.

May be viewed any day prior to the Sale. Catalogues may be had of Messrs. Sandy & Son, Nurserymen, Stafford; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Bagshot.

THREE DAYS' UNRESERVED SALE of beautifully-grown and well-rooted NURSERY STOCK, in splendid condition for removal, by order of Messrs. John Waterer & Sons, Limited.

IMPORTANT to NOBLEMEN, GENTLEMEN, and OTHERS, MESSRS. PROTHEROE AND MORRIS will
SELL BY AUCTION, on the Premises, the well-known Bagshot Nurseries, Bagshot, Surrey, on TUESDAY, November 8, and TWO FOLLOWING DAYS, at 12 o'clock each day, several acres of NURSERY STOCK, grown to the greatest perfection, and exceedingly well rooted, comprising a great variety of CONIFERS, splendid specimens for effective planting, 4 to 8 feet; hundreds of well-coloured Golden Retinoporas; very fine specimen Gold and Silver Variegated Hollies, 4 to 6 feet, standard and pyramids; 1000 Green Hollies, 3 to 5 feet; Aucubas, Laurels, English Yews; 2000 named Rhododendrons, 2 to 2½ feet, bushy plants, of the newest kinds; Potentilla Rhododendron in quantity; 1000 Spruce Firs, 2½ to 4 feet, and a quantity of larger plants 4 to 8 feet, specially adapted for Christmas Trees; 2000 Standard Ornamental Trees, 8 to 12 feet; Purple Beech, Limes, Chestnuts, Poplars, &c.; thousands of Flowering Shrubs, in large quantities; small Conifers for potting and boxes, consisting of Cupressus, Retinoporas, &c.

Bagshot Station is on the Nursery, whence goods may be transmitted to all parts.

Purchasers will be allowed until December 31 for removing their lots, and Messrs. Waterer & Sons will undertake to lift and forward any goods bought at the Sale, simply charging for the time and labour occupied.

Stock may be viewed any time prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Sale—November 11.

By order of F. Sander & Co., St. Albans.

NEW ORCHIDS FROM THE NATUNAS ISLANDS.

No other Collector has ever explored this Group.

A remarkable and distinct-looking SACCOLABIUM, provisionally named Sanderæ, flowers white and amethyst.

An extraordinary large white flowering COELOGYNE, with long racemes; this is no doubt the premier representative of the genus, provisionally named after our intrepid and indefatigable collector, C. Ericsson.

A NEW DENDROBIUM, in the way of D. amethystoglossum. Also a CYPRIPEDIUM, reminding one of the Western Palm-foolium.

Further and full particulars will appear in next week's *Gardeners' Chronicle*.MESSRS. PROTHEROE AND MORRIS,
67 & 68, Cheapside, London, E.C.

Barnham Nurseries, near Bognor.

TWO DAYS SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will
SELL BY AUCTION, on the Premises, as above, by order of Mr. S. S. Marshall, on TUESDAY and WEDNESDAY, November 15 and 16, at 12 o'clock each day, a portion of the GENERAL NURSERY STOCK, comprising 6000 Conifers, Evergreens, and Deciduous Shrubs, 12,000 splendidly-grown Fruit Trees of the best varieties, including Maiden, two-year, Standard and Fruiting Pyramid Apples, Pears, Plums, Cherries, and several hundreds of extra size trained Pears, Apples, and Plums; 25,000 Crab Stocks; 1000 Specimen Border Shrubs, 2 to 8 feet; 1000 Lilacs, 3 to 7 feet; 1500 Box, 1 to 2 feet; 2000 Standard and Dwarf Roses, of the best varieties; 10,000 Manetti Stocks; Ornamental Trees for Avenue planting, consisting of Sycamore, Horse Chestnuts, Limes, &c., and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Thursday November 17.

GREAT SALE OF PALM and other SEEDS.

(These have been specially collected, and packed in damp-proof sand, and are expected to arrive in fine condition.)

21,000 KENTIA BELMOREANA
17,500 " FORSTERIANA
1,250 " CANTERBURYANA
1,800 CASTANOSPERMUM AUSTRALIS
(The most beautiful of Australian Evergreen Trees)
114,000 CORYPHA AUSTRALIS
8,000 MACROZAMIA SPIRALIS
15,000 PHENIX RECLINATA
10 lb. EUCALYPTUS GLOBULUSMESSRS. PROTHEROE AND MORRIS will
include the above in their SALE on THURSDAY,
November 17.

Choice Bulbs from Holland.

MR. J. C. STEVENS will SELL BY AUCTION, every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice BULBS arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.
On view mornings of Sale, and Catalogues had.

Tuesday Next.

A FINE IMPORTATION OF BULBS from a well-known Grower in Holland, in first-rate condition, and specially lotted for all buyers; choice IRIS KEMPHERII and SIBIRICA, DIELYTRA SPECTABILE, white GLADIOLI, and FREESIAS, IXTAS, SPIRÆA, LILY OF THE VALLEY, &c.

MR. J. C. STEVENS will include the above
in his SALE BY AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT,
November 1.

On view morning of Sale, and Catalogues had.

Wednesday Next.

5000 LILIUM AURATUM, 2000 L. SPECIOSUM ALBUM, and 1000 L. SPECIOSUM RUBRUM, just received direct from Japan; 10,000 LILY OF THE VALLEY CROWNS, 2000 CLUMPS of ditto, 2500 L. HARRISII, ANEMONES, choice DAFFODILS and NARCISSUS, GLADIOLI, FREESIAS, PANCRACTHUMS, 2500 SPIRÆA JAPONICA, &c.

MR. J. C. STEVENS will include the above
in his SALE BY AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT,
November 2.

On view morning of Sale, and Catalogues had.

WANTED, a PARTNER, with £500 to £1000 in the business of a FLORIST and MARKET GARDENER. Good outlet for all produce. Compact Premises with Dwelling-house, and about 10,000 feet of Glass-houses, well constructed and thoroughly fitted with the best heating apparatus. Seven miles from Covent Garden.—Apply, P. E., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a sound SEED and SUNDRIES BUSINESS, in or near London, or a good town. Must bear investigation. Apply, with full particulars, to C., Hurst & Son, 152, Houndsditch, London, E.C.

WANTED, TO RENT (in Sussex preferred) small MARKET NURSERY, with Residence and Glass-houses; or Dwelling house, with Land suitable for erection of Glass.—HORTUS, 68A East Street, Brighton.

WANTED, HALF SHARE of a small NURSERY and JOBBING BUSINESS. Apply to—G. B., 4, Perry Hill, Catford, S.E.

WANTED TO PURCHASE, SEED, FLORAL, or FRUIT BUSINESS, with or without Nursery.—J. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.WANTED, TO RENT, GLASSHOUSES in good repair.—500 to 1000 feet run of Span-roof Houses for trade purposes, with 3 or 4 acres of Land. Good open locality, not more than 13 miles from Covent Garden, south side of London; must be near railway station.—Full particulars to SPECIALIST, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO FLORISTS and OTHERS.—Well situated and valuable LEASEHOLD NURSERY, containing 5 Greenhouses, 2 Large Frames, good Bedding-out Ground, and small Brick-built Cottage, &c., for IMMEDIATE DISPOSAL. (No stock).—Apply, R. PECKITT and CO., House Agents and Valuers, 1, Wellington Street, Woolwich.

TO NURSEYMEN and FLORISTS.—

Close to main road, in a rapidly improving North-West Suburb, Capital PREMISES and GOODWILL to be SOLD; Long Lease at low rent. Good Glasshouses. Owner selling on account of ill-health.

LEOPOLD FARMER, Auctioneer and Surveyor, 12, High Road, Kilburn, N.W.; and 46, Gresham Street, E.C.

Rare opportunity, very seldom met with.

FOR IMMEDIATE DISPOSAL, or RENTAL, as a thorough-going concern, large MARKET, FLORIST, and LANDSCAPE BUSINESS. Established over thirty years, in one of the most fashionable South Coast watering-places. Nearly 25,000 feet of Glass, all thoroughly heated on latest principle. The houses are full of Stove, Greenhouse, and other Marketable Plants. There is also a grand opportunity for Erica and Tomato-growing. Stock-in-Trade, &c., at valuation. This is a genuine affair, and only principals treated with. Full particulars will be given and every enquiry courted. Apply to HORTICULTURE, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Sussex.—By order of Executors.

TO MARKET GARDENERS, FRUIT GROWERS, and OTHERS. Thoroughly genuine Business. Established for many years.

MESSRS. PROTHEROE AND MORRIS are instructed to DISPOSE of a choice and productive FREEHOLD MARKET GARDEN and FRUIT GROUND, about 14 Acres, abundantly stocked with the best kinds of Fruit Trees; also convenient Residence, Stabling, and Out-buildings. Immediate possession.

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HAMPTON-ON-THAMES, on the Marling Park Estate, free from London fogs, a deep rich Loam, the favourite neighbourhood for Growers. FREEHOLD LAND for SALE, on easy system of Purchase, or to be LET on Lease. For full particulars apply to Mr. FRED. G. HUGHES, Surveyor, The Estate Office as above.

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TO BE LET, an excellent FARM, situate within 3 miles of Stephenson Place, Birmingham. There is a large House and extensive Buildings, and the Land is well adapted for Market Gardening, being close to the City. It consists of Arable and Pasture Land, and is about 173 Acres.

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ORCHIDS.—Many rare and choice Cattleyas, Dendrobiums, Cypripediums, &c., always in stock.

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THE VINEYARD AND NURSERIES,
CARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS,
FERNS, &c., &c.

CATALOGUES, with full particulars, post free on application.

Special Quotations to the Trade.

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KENT COUNTY CHRYSANTHEMUM SOCIETY.

The FIFTH GREAT ANNUAL SHOW OF CHRYSANTHEMUMS AND FRUIT will be held on TUESDAY and WEDNESDAY, November 1 and 2, at The Rink, Blackheath.

OVER ONE HUNDRED POUNDS IN PRIZES.
OPEN CLASS—36 Blooms—Four Prizes, £10, £7, £4, £3.
Schedule on application to

H. J. JONES, Hon. Sec.,
Ryecroft Nursery, Hither Green, Lewisham.

ASCOT, SUNNINGHILL, SUNNINGDALE,
and DISTRICT HORTICULTURAL SOCIETY.

GRAND STAND, ASCOT, November 2 and 3.

£7 15s. Od. for 24 incurved, 18 varieties.
£7 15s. Od. for 24 Japanese, 18 varieties.
Schedules from— F. PATTON, Ascot.

CRYSTAL PALACE.

GRAND EXHIBITION OF CHRYSANTHEMUMS, FRIDAY and SATURDAY, November 4 and 5, 1892.

Schedule, post free, on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close October 28.

KINGSTON AND SURBITON
CHRYSANTHEMUM SOCIETY.

President—G. C. SHERRARD, Esq., J.P.
The SIXTEENTH ANNUAL GRAND SHOW OF CHRYSANTHEMUMS, FRUITS, PLANTS, &c., will be held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, November 8 and 9, 1892.

Over £130 offered in Prizes, in addition to the Sixth Grand Champion Challenge Vase, value 25 Guineas; also Silver Cup, value 5 Guineas.

Schedules, and other information, from the Hon. Sec., Mr. GEO. WOODGATE, Warren House Gardens, Kingston Hill, Surrey.

NATIONAL CHRYSANTHEMUM SOCIETY.

GREAT AUTUMN FESTIVAL and EXHIBITION, TUESDAY, WEDNESDAY, and THURSDAY, November 8, 9, and 10, at the ROYAL AQUARIUM, WESTMINSTER.

Competition for the National Challenge Trophy, and the valuable Holmes Memorial Cup and Medals.

Prizes for Table Decorations and Fruit. Valuable Special Prizes for Vegetables. Floral Committee at 1 o'clock.
Schedules of Prizes and particulars of RICHARD DEAN, Secretary and Superintendent, Ranelagh Road, Ealing, W.

SOUTH SHIELDS and NORTHERN
COUNTIES CHRYSANTHEMUM SOCIETY.

Show will be held, NOVEMBER 9 and 10, in Royal Assembly Hall, South Shields. £120 in Prize Money. £15 for 36 Japanese Blooms. £11 for 24 Incurved Blooms.

N.B.—Affiliated with National Chrysanthemum Society of England.
Harton, South Shields. BERNARD COWAN, Hon. Sec.,

THE BATH CHRYSANTHEMUM SHOW,

NOVEMBER 9 and 10, 1892. Entries close November 4. For Prize Schedules, apply— B. R. F. PEARSON, { Secs.
2, Northumberland Edges., Bath. W. JEFFERY,

BOURNEMOUTH CHRYSANTHEMUM
and HORTICULTURAL SOCIETY.

The SIXTH EXHIBITION, November 9 and 10, will be held in THE WINTER GARDENS HOTEL, MONT DORE. Open Classes. Thirty-six Cut Blooms—Japanese and Incurved. 10-Guinea Challenge Cup, and £5, £3, £2, and other good Cash Prizes. Entries close November 2. Schedule on application to—

JAMES SPONG, Secretary,
Lindisfarne Gardens, Bournemouth.

CALNE HORTICULTURAL SOCIETY.

The TWENTY-EIGHTH ANNUAL EXHIBITION and CHRYSANTHEMUM SHOW will be held in the TOWN HALL, CALNE, on THURSDAY, November 10, when the following Prizes, amongst others, will be offered in the Open Class:—

GROUP OF CHRYSANTHEMUMS, in Pots (space not to exceed 10 feet by 5 feet), £3, £2, £1.

CUT FLOWERS, 24 blooms, Japan ... £3, £2, £1.
24 blooms, Incurved £3, £2, £1.

Schedule of Prizes to be obtained of—

FRED. C. HENLY, Hon. Sec.

SHEFFIELD, HALLAMSHIRE, and WEST
RIDING UNITED CHRYSANTHEMUM SOCIETY.

ANNUAL SHOW, in CORN EXCHANGE, SHEFFIELD, on FRIDAY and SATURDAY, November 11 and 12, 1892.

£200 in Prizes. £50 Open Class Cut Blooms; also Silver Cup, and the Gardeners' Magazine Silver Medal.

Schedules free, on application to—
WM. HOUSLEY, Secretary.

BRADFORD and DISTRICT CHRYSANTHEMUM SOCIETY.

NOVEMBER 11 and 12, 1892.

Entries close November 7.
GEO. R. TAYLOR, 102, Godwin Street, Bradford.

TWICKENHAM HORTICULTURAL SOCIETY.

The ANNUAL AUTUMN SHOW will be held at the Town Hall, Twickenham, on TUESDAY and WEDNESDAY, November 15 and 16. Intending competitors will oblige by forwarding their entries on or before Friday, November 11.

For Schedules and further particulars, apply to
JAMES J. G. PUGH, Hon. Sec.,

2, Heath Road, Twickenham.

ROYAL BOTANICAL SOCIETY of MANCHESTER.

The ANNUAL CHRYSANTHEMUM SHOW will be held in the Town Hall, Manchester, on November 15 and 16.

SILVER CUPS of the value of £10 & £5 given for 36 Blooms. For Schedules apply to the undersigned.

Botanic Gardens, Manchester. BRUCE FINDLAY,

WEST OF ENGLAND CHRYSANTHEMUM SOCIETY.

FIRST EXHIBITION, ST. ANDREW'S HALL, PLYMOUTH,

November 15 and 16, 1892.
Over £100 in Prizes—£30 Cash for 24 Incurved and 24 Japanese. Entries close November 9, 1892.

For schedules, apply to—
Messrs. WILSON AND DAMERELL, Hon. Secs.,
4, North Hill, Plymouth.

RUGBY CHRYSANTHEMUM EXHIBITION, November 16 and 17, 1892.

£75 in Prizes. Entries close November 9. Schedules from—
19, Oliver Street. WILLIAM BRYANT, Secretary.

YORK CHRYSANTHEMUM SHOW.

The THIRTEENTH ANNUAL SHOW will take place on November 16, 17, and 18, 1892, in the FINE ART EXHIBITION BUILDING.

£170 in Prizes is offered. Proportionately Liberal Prizes for Plants, Flowers, Fruits, and Vegetables.

Entries close November 9. Schedules, &c., from—
J. LAZENBY, 13, Feasegate, York.

WAVERLEY MARKET, EDINBURGH.—
GRAND CHRYSANTHEMUM EXHIBITION,

November 17, 18, and 19. City of Edinburgh CUP, value £20, for 48 Blooms (Japanese), not less than 36 varieties, and many other VALUABLE PRIZES.—Schedules on application to the Secretary,
ROBERT LAIRD, 17, Frederick Street.

THE FINEST AND MOST INTERESTING

CHRYSANTHEMUM SHOW

In the Country will be on View from NOVEMBER 2, at J. R. PEARSON and SONS' CHILWELL NURSERIES.

Beeston Station (M. R.) is 10 minutes' walk from the Nurseries.

W. UNWIN, Long Market, and Stand 283,
Flower Market, Covent Garden, W.C., is open to receive choice CUT FLOWERS to SELL on COMMISSION.JOHN COLLINGRIDGE is open to receive
Consignments of Choice CUT FLOWERS for SALE, on COMMISSION. Highest references.

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MATTHEW POULTON, WHOLESALE
FLOWER SALESMAN, 123, Flower Market, Covent Garden, W.C., is OPEN to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS for SALE on COMMISSION.

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SALESMEN, North Row, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of GRAPES, TOMATOS, CUCUMBERS, & all kinds of HOT-HOUSE PRODUCE.

Our business connections being amongst the best houses in London, we are in a position to secure the highest prices for all choice goods. Account Sales forwarded daily, and cheques weekly, or daily if required. Empties and labels supplied. Reference, London and County Bank, Covent Garden Branch.

THE "WALKER" PATENT CHRYSANTHEMUM CUP and TUBE.

Commended by the National Chrysanthemum Society. Price, 6s. 6d. per dozen. Cash with Order. By Parcel Post, 9d. per dozen extra. Descriptive List, free on application.

JAMES YOUNG, 36, Herbert Road, Wimbledon.

MIGNONETTE—GIANT MARKET, in 60's,
for Potting-on. Several hundred for Sale, cheap; want of room. Also TEA ROSES, in 48's.

CHIFFERFIELD, Thames Valley Nursery, Hampton Hill.

CARNATION Mrs. Reynolds Hole, the popular
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CRANE AND CLARKE, Hillside Nursery, March, Cambs.

50,000 LILIES OF THE VALLEY.

Only first-class Crowns for Forcing, 22s. per 1000, free on board, Hamburg. Samples can be had. Apply to
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10,000 ROSES, in 60 sorts, strong plan ts
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AZALEA INDICA.—Fine plants, well set,
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DEUTSCHE PERLE, very fine, 21s. per dozen. Apply to—
J. LION, Park Nursery, Stanmore, Middlesex.

FERNS! FERNS!!—Trade.—Greenhouse and
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Strong Seedling Ferns, stores, in variety, 6s. per 100, 50s. per 1000. Large Adiantum cuneatum, Aralias, Cyperus, all in 48's, 6s. per dozen. Palms, Ficus, Hydrangeas, 1s. each. Large Ferns, 10 best sorts, 6s. 6d. per dozen, in 48's. Adiantum cuneatum and P. tremula, extra size, in 24-inch pots, 16s. and 20s. per 100. Packed free, Cash with Order.

J. SMITH, London Fern Nurseries, Loughboro' Junction, S.W.

FOR SALE Cheap, TRUE NATIVE
LARCH, 15 to 18 inches, 2 to 2½ feet, and 12 to 3 feet.

SYCAMORE, 7 to 8 feet, and 8 to 10 feet, clean stems. THORNs, 5 years, strong, 8s. per 1000. MAPLES, 5 to 6 feet. WEEPING BIRCH, 4 to 5 feet. Samples and prices upon application to THOS. HUNTER, Barnard Castle.

Cheaper than Previous Offers, to Clear.
DAFFODILS, SNOWDROPS, SCILLAS,

STARS, NARCISS, &c., all English-grown, and good firm blooming roots. Sure to please. Cash with Order.—Daffodils, Single, 10s.; second, 6s. Snowdrops, Double, best, 15s.; second, 8s.; Single, best, 14s.; second, 7s. Aconites, 8s.; Star of Bethlehem, 8s.; Blue Scillas, 10s.; Pheasant's Eye, large, 8s.; Double White Narciss, 15s.; second, 9s.; Biflorous Turin Narciss, extra large and fine, 12s. per 1000. Narciss Burbidgei, 3s.; Aurantiaca, Double, 3s.; Orange Phoenix, 4s. per 100.

GEO. YORKE, Bulbist, Retford.

FOR SALE, about 1000 MAIDEN APPLES,
clean and strong varieties, suitable for Fruit Growers.

Lord Suffield, Lord Grosvenor, Warner's King, Cox's Pomona, Bramley, Blenheim Orange, &c., 50s. per 100.

COBBAN AND SON, Fruiterers, Market Place, Rotherham.

ASPARAGUS, of fine quality—for Forcing,
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Extra large and good Trees, subject to not being sold on receipt of order.

Royal George | Barrington | Eearly York
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The above were lifted last season.

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T. JANNOCH, Largest Grower of LILIES

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Catalogue of beautiful flowering Bulbs for all seasons.

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COLLECTIONS OF BULBS, 10s. 6d., 21s., 42s., 63s., & upwards. COLLECTIONS OF DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s. Hyacinths, Tulips, Crocus, Daffodils, Iris, Pionies, Lilies, &c.

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The Daffodil Bulbs are magnificent.

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Grand Monarch Polyanthus Narciss, 40s. per 1000, 5s. per 100; Grand Soliel d'Or, 30s. per 1000, 4s. per 100; Scilly Whites, 50s. per 1000, 5s. 6d. per 100; Double incomparable Narciss, 15s. per 1000, 2s. per 100; Poeticus, 10s. per 1000; Biflorus, extra large 10s. 6d. per 1000, 1s. 6d. per 100; Ornatus, true, 35s. per 1000, 4s. per 100; Gladiolus "The Bride," true, 3s. 6d. per 100. All fine Bulbs, true to name, and offered for Cash with Order.

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SPECIAL TRADE OFFER,
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500,000 RHODODENDRONS, from 2 to 4 feet.
ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 9 to 10 feet.

Mountain, 3 to 4 feet, 6 to 7 feet, 9 to 10 feet, 10 to 12 ft. BEECH, Common, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 10 to 12 ft. BIRCH, 9 to 10 feet, and 10 to 12 feet, fine.

CHESTNUTS, Horse, 3 to 4 feet, 5 to 6 ft., 8 to 9 ft., 9 to 10 ft. ELM, 3 to 4 feet, 6 to 8 feet, 9 to 10 feet, stout.

LIMES, red twiggied, 6 to 7 feet, 8 to 9 feet, 9 to 10 feet. PINES, Weymouth, from 2 to 6 feet, various sizes.

POPLARS, 3 to 4 feet, intermediate sizes up to 10 feet. PRIVET, oval-leaf, 2 and 3 feet; evergreen, 3 to 4 feet.

THORN QUICK, many hundred thousands, from 4 to 6 years old, very strong; SYCAMORE, 6 to 10 feet; LILACS, PINES, Austrian, from 3 to 6 feet, fine trees; ACUBAS, LAURELS; HOLLIES, various; BERBERIS AQUIFOLIA, 1½ to 2½ feet; BOX, YEWs; ELDER, golden; IVIES, and General NURSERY STOCK.

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RHODODENDRONS, to name, best varieties, flowering plants,
 12 to 15 inches and 18 inches to 2 feet.
 " **Ponticums**, many thousand, 1½ to 2½ feet, suitable for
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KALMIA LATIFOLIA, 10 to 12 inches, full of bud.
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BERBERIS AQUIFOLIUM, 12 to 18 inches.

" **DARWINII**, 18 inches to 2 feet.

SPRUCE FIR, 3 to 7, and 8 feet.

PINUS AUSTRIACA, 2 to 5 feet.

ABIES DOUGLASII, 5 to 10 feet.

THUIOPSIS BOREALIS, 2 to 7, and 8 feet.

ARBOR-VITÆ, AMERICAN, 4 to 6 feet.

CUPRESSUS LAWSONIANA, 2 to 6 feet.

THUIA LOBBII, 3 to 8 feet.

WEYMOUTH PINE, 7 to 8 feet.

AZALEA PONTICA, 18 inches to 2 feet.

LAURELS, COLCHICA, 2 to 6 feet.

" **ROTUNDIFOLIA**, 2 to 2½ feet.

" **PORTUGAL**, 2 to 4 feet.

LIGUSTRUM OVALIFOLIUM, 2 to 3 feet.

" **COMMON**, 2 to 3 feet.

QUICK (THORN), 2 to 3, and 3 to 4 feet, extra strong.

GOOSEBERRIES, fruiting trees, to name.

CURRENTS, fruiting trees, to name.

A large assortment of **FLOWERING SHRUBS**.

STANDARD FOREST and ORNAMENTAL TREES.

Also strong **FRUIT TREES**.

GREEN HOLLIES, Common, 1½ to 2½ feet.

Price and sample of any of the above on application.

Inspection invited.

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THE COLORADO BLUE SPRUCE,

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Handsome specimens, 2, 3, 4, 5, and 6 feet high. These are
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 The Queen and H.R.H.
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JOHN MOOY, BULB GROWER, from Holland,
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This favourite first early Potato, suitable for any Garden,
 indispensable for Forcing and Early Borders, and likely to take
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The stock we offer is the true yellow-fleshed variety and not
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Price per cwt. and ton. State requirements to

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A very large quantity of the above for Sale, in 48's, with
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**MARLY LILAC**

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 The best of all for Forcing. Thousands
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FRUIT TREES.**ROSES and VINES**

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HOLLIES, GREEN, Common, up to 10 and 12 feet.

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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 29, 1892.

DR. ROBERT LYALL

(BOTANIST AND TRAVELLER, 178(?)—1831).

ROBERT LYALL was born in Scotland some twenty years before the close of the last century, and the story of his wanderings and botanical observations and collections is apparently so little known that a brief notice of his life may be worth recording in the pages of the *Gardeners' Chronicle*. Mr. Dowie, the courteous assistant-clerk of the University of Edinburgh, who has searched the records in his charge, states that Robert Lyall's name first occurs in the index of the University album as attending the class of chemistry in 1801, and that from 1807—1810 the name of the same student appears as studying in various other classes at Edinburgh; but he does not appear to have taken a degree in medicine. As, however, according to his own account, he states that he was at one time studying at Manchester, some of our Manchester correspondents may be able to afford information on this point. Although apparently unsuccessful in the practice of his profession, Dr. Robert Lyall published in *Nicholson's Journal* (vols. xxiv.—xxviii.), between 1809—1811, some papers on the "Irritability of Plants" (a list of which appears in the Royal Society's Catalogue of Scientific Papers), which attracted some attention among the scientists of the day. Domestic or pecuniary troubles seem to have driven him away from Great Britain shortly afterwards, for, to use his own words, he "twice found an asylum from misfortune, and passed some of the best years of his life," in the Russian empire. Dr. Lyall has left no record of the exact date of his first visiting Russia, but from interval evidence of his published works, it appears that in 1815 he resided at St. Petersburg as physician to a nobleman's family, and travelled to Kaluga with Mr. Pollaratskii. He is next found attached for four years (1816—1820 presumably), to the establishment of the Countess Orlof-Tchémsenska, at Ostrof, about 16 miles from Moscow, in the summer months, and in winter at the ancient capital, which was then being rebuilt on a grand scale after the Napoleonic invasion four years previously.

Whilst in the neighbourhood of Moscow, Dr. Lyall accompanied Dr. Goldbach, Professor of Botany, in examining the plants in and near the city, and prepared a catalogue of them. "Several years previously," writes Dr. Lyall, "when studying the Mushrooms with unremitting zeal at Manchester," I had the curiosity

* Dr. Lyall was a corresponding member of the Literary and Philo-sophical Society, and of the Natural History Society of Manchester. It is to be hoped that this Society has preserved a notice of Dr. Lyall's labours and correspondence. Can your Manchester correspondents give information on this point? Mr. Charles Bailey informs me there is no record in this Society's papers of Lyall. S. P. O.

to enumerate the species which are indigenous in Britain, according to Withering's *Arrangement of British Plants*, and found their number, if I do not deceive myself, to be above 500. I now am ready to exclaim—how many of these species are edible!—how many would the Russians, by their modes of preparing and dressing, render edible! What a supply of food, especially for the poor, in hard times, may be annually lost for want of knowledge! Lyall published his *Remarks on Mushrooms*, "with catalogues of the species reckoned edible by the Russians and notices of the method of preparing them." Subsequently, when in London, he had a conversation with his distinguished friend, Sir Alexander Crichton, who informed him that the Misses Crichton, accompanied by a servant who followed his family from Russia to England, had repeatedly collected and used numerous species of Mushrooms reckoned edible in Russia, but thought poisonous in Britain. So strongly was the cook of the latter opinion, that she would not allow the said poisonous Mushrooms to be prepared in her dishes; she would not even consent to touch them, far less to prepare them, lest death should be laid at her door. They were consumed, however, with avidity, and produced no bad effect. In fact, Dr. Lyall was among the first, if not one of the very first, in this country, who was persuaded that the history of edible Mushrooms, and the modes of dressing them, had not attracted sufficient attention from writers in any of the languages of Europe. He was convinced of the importance of the investigation of this subject, even in a political point of view; for only in times of famine, such as that which has prevailed over vast districts in Russia quite recently, can the value of the edible Mushrooms be rightly appreciated.

"The knowledge of edible Mushrooms," says Dr. Lyall, "like a tradition, has been handed down in Russia, from parent to child, through a long series of ages; and the discrimination of these from the hurtful or poisonous Mushrooms is learned by practice in the years of infancy and youth. Such a valuable acquisition to the store of general knowledge can only be made by the foreigner who is a botanist, and through him alone may be expected to be communicated to foreign nations, which, in the course of time, may share in the rich supply of dainties for nourishment, as well as for the gratification of taste—a supply which hitherto has only been allotted for the use of the more northern nations. The liberal consumption of Mushrooms by the natives of milder climes is more securely prevented by fear than if they were contraband articles, or imported under a heavy tax."

In 1821, Dr. Lyall was attending General Natschokin at Semeonovskoye, also in the vicinity of Moscow; but he seems to have been glad to terminate his engagement with this officer, and he next travelled, in the double capacity of conductor of the journey and physician, with the Marquis Pacci, Count Salazar, and Mr. Edward Penrhyn through the Crimea, Georgia, and the other southern provinces of Russia. Starting from Moscow in April, 1822, he returned from his journey in August, and then proceeded to St. Petersburg.

Dr. Lyall's description of the Botanic Garden of Górenki, 17 miles from Moscow, which belonged to Count A. K. Rasumóvskii, as they existed in 1822, may be quoted as interesting to readers of the *Gardeners' Chronicle*.

"Its situation is rather flat, in consequence of which the triumphs of labour and art are so much more conspicuous. The mansion is quite a princely residence. It is large, not overloaded with ornaments, and built in a good style of architecture. The interior apartments are very spacious and elegant, and the furniture is quite consonant with the exterior impression. In the basement story is a fine promenade through a gallery 910 feet long, including at each end a commodious forcing-house. It has a magnificent appearance, and is made doubly agreeable by the sweets of Orange and Lemon groves, as well as by the quantities of Peaches and Apricots produced. The gardens are laid out with a good deal of taste.

Gravel walks, ponds, lakes with islands, together with temples and statues, are their chief ornaments, and in them grow nearly 2000 perennials. The collection of plants here amounts in all to between 9000 and 10,000. The hot-houses are eleven in number, in six separate buildings, arranged in two rows. Some of them are extremely large, and the front of the whole, collectively, amounts to 1148 feet. Here are enjoyed Asiatic pleasures in the rigorous climate of Russia—walks amidst groves and woods of tropical vegetation, even when the cold is 35° below zero of Fahrenheit. The establishment at Górenki, *in toto*, is one of the most magnificent in the world, and perhaps its equal was never supported by any individual. The cost for wood alone in the cold climate of the north, is enormous, and I have been assured that the annual expenditure has been from 70,000 to 100,000 roubles. Górenki has been known about twenty-two years by its botanical gardens, but it is chiefly within the last eighteen that it has acquired such renown. Dr. Radóvskii, a man of talents, was its director for a few years, and had formed a considerable collection of plants. My worthy friend, Dr. F. Fischer, that distinguished botanist, and most amiable man, has been director of these gardens for about sixteen years, and to him almost the whole celebrity of Górenki is due. His zeal and discoveries are well-known throughout Europe, and require no encomium from my pen. . . . The gardens of Górenki form a famous nursery, and may be called the Botanical Emporium of the Russian empire; of the Ukraine, the Crimea, the Caucasus, Georgia, part of Tartary, Siberia, Kamtschatka, and the Russian isles, between the latter and America. Catalogues of the plants contained in this nursery are frequently published, and are distributed throughout Europe. By connections already established in different countries, seeds have been received at Górenki of numerous undescribed plants. Indeed, many new plants which have enriched and embellished the botanic gardens of Europe, most probably would have remained unknown to the botanic world for many years to come, but for Górenki and its director. The correspondence of Dr. Fischer with Europe, and the number of packets of seeds annually sent by him to the botanic gardens, and to distinguished patrons of botany is so enormous, that I dare not state it, fearful of exciting suspicions as to its authenticity. For these he receives seeds from all quarters in exchange; a practice which he wishes to encourage to the greatest extent."

Unfortunately these gardens have come to ruin in consequence of the immense debts of the Count. The collection was offered to the Russian Government for 300 000 roubles, but as the Crown would only give 150,000 roubles, the offer was rejected. Dr. Fischer became the director of the extensive botanic garden at St. Petersburg, and the gardens at Górenki are gone. Perhaps some of the correspondents of the *Gardeners' Chronicle* who may happen to know the vicinity of Moscow can give information as to whether any attempt has been made to reinstate this once-famous establishment.

Dr. Lyall made no secret of his opinions, nor of the contents of his MS. works, while in Russia; but, at length, he got timely notice that his papers might be seized, in consequence of a report having arisen that he was about to quit Russia on account of the severe observations contained in his volume, which was said to be already published in London. By an excellent opportunity he despatched what he esteemed his dangerous papers; and, afraid of a visit from the police, he made all haste with his family to Britain, arriving in London sometime in August, 1823. The same autumn his publishers (Cadell in London, and Blackwood in Edinburgh), brought out Dr. Lyall's well-known book on Russia, *The Character of the Russians, and a Detailed History of Moscow*, a portly quarto volume, fully illustrated, which was dedicated to the Emperor Alexander. The Russian Emperor, however, was displeased at the frank manner in which the manners, mode of life, and morals of his nobles were exposed to the public in the pages of this volume, which, nevertheless, long remained a standard work on the subject. This book was followed by *Travels in Russia, the Crimea, the Caucasus and Georgia*, in two vols., 8vo, brought out by the same publishers in 1825. Meantime, the author had published *An Account of the Organisation, Administration, and Present State of the Military Colonies in Russia in 1824*; in this volume he included an interesting journal of General Yermolof's embassy to Persia in 1817.

The disapprobation expressed by the Czar of all the Russias prevented the return of Dr. Lyall and his family to that country. That his conduct was approved by his superior officers, Sir Alexander Crichton and Sir Jas. Wylie, seems evident from the fact that after a short residence in England, he was appointed to an important foreign mission by the government of which the Earl of Liverpool was

Prime Minister, and Lord Castlereagh the Foreign Secretary.

On the death of Mr. Hastie (the British Agent at the capital of Madagascar, October 8, 1826) becoming known in England, Dr. Lyall was appointed to succeed him, and proceeded immediately with his wife and family to Mauritius, where he arrived in the summer of 1827. Hearing that King Radama was expected to visit the coast, he proceeded to Tamatave, where he was introduced to the King, by whom he was received with all the respect to which his office entitled him; but as the time was unfavourable for entering the country or proceeding into the interior, he returned to Mauritius, and remained there till the return of the season suitable for journeying up to the country of the Hovas, the following July, 1828. On his journey up to Antananarivo, he received tidings of the illness of Radama, and hastened with all possible despatch to the capital, but he did not arrive until August 1, when the King's death had actually taken place, although the fact had not been announced to the people. When he arrived, he was received with the usual salute of cannon and other marks of attention from the Malagasy Government, but had no opportunity of presenting his credentials or holding any official intercourse with the Ministers. All public business was suspended by the national mourning, and in these circumstances Dr. Lyall and his family remained at the capital as private individuals until November 28, when an official message was brought to him by the officers of the palace, to the effect that the new Sovereign, Queen Ranavalona I., did not feel herself bound by the treaty of her predecessor, the great Radama, and that she would not receive him as the agent of the British Government; and four days afterwards he was informed that the Queen would no longer receive the subsidy which the British Government granted to Radama, although she did not intend to revive the slave trade in her dominion. Mr. Lyall continued to reside at the capital until March, 1829, when he requested permission to proceed to Tamatave. A fortnight afterwards, on March 29, his family were astonished to see a large crowd of natives coming to their house early in the morning, headed by the keepers of the idol Ramahavaly, who carried that effigy on a long pole. One of Dr. Lyall's servants was seized and put in irons, and the agent and his sons were peremptorily ordered to leave the house and proceed to Ambohipeno, a village some six miles outside the city. He was not even allowed time to change his clothes, to take any luggage, or even re-enter his house to take leave of his family. The courtyard of his house was filled with snakes, large bagfuls of which had been brought and emptied out on the ground. These reptiles were supposed to be the servants of the god Ramahavaly and the instruments of his wrath. Dr. Lyall was told that the idol ordered him to leave, and the idol-keepers hurried him away on foot, refusing even to allow him to ride in his palanquin. The idol and its escort, each of whom carried a snake held by some dried grass, followed him, accompanied by a large body of spectators who had been attracted by the tumult. Mr. Freeman, one of the missionaries, came to the assistance of Mrs. Lyall and the rest of her family, and obtained permission to obtain bearers to carry them and their effects to join Dr. Lyall at Ambohipeno, from whence they were all allowed to proceed to the coast on April 22.

The reason assigned for this outrage upon the person of the British Agent, was that he had proceeded himself, and had allowed his horse to approach one of the villages sacred to the idol, and that he had further transgressed by sending his servant to catch butterflies, reptiles, and botanical specimens which he was collecting for scientific purposes.

Dr. Lyall managed to secure a certain proportion of his botanical specimens which he transmitted to Kew, in the herbarium of which establishment many of his collections still remain. Unfortunately Dr. Lyall contracted fever during his journey down to Tamatave, and although he survived long enough to live a year or more in Mauritius, he ultimately succumbed to that malady at Port Louis in 1831.

His correspondence whilst in Madagascar and Mauritius has fortunately remained, and duplicate volumes of it are to be found in the Record Office among the documents of the Colonial Office.

[Extract from Britten & Boulger's Biographical Index of British and Irish Botanists, published in *Journal of Botany*, No. 322, October, 1889, vol. xxvii., p. 311.] "There is a genus of acrocarpous mosses created by Robert Brown and called 'Lyella,' but whether this is after the botanist named above I am not aware."—*Captain S. Pasfield Oliver, late Royal Artillery, Moray House, Stokes Bay, Gosport, August 1, 1892.*

NEW OR NOTEWORTHY PLANTS.

PLEUROTHALLIS TERETIFOLIA, Rolfe, n. sp.*

This most remarkable little *Pleurothallis* is a native of Pernambuco, in Brazil, and was introduced by Messrs. Charlesworth, Shuttleworth, & Co., of Heaton, Bradford, together with *Cattleya labiata*. It belongs to Lindley's group *Brachystachya*, and for the present may be placed next to *P. teres*, Lindl.

is also very remarkable, and much thinner in texture than the rest of the flower. Altogether, it is a very interesting little plant. *R. A. Rolfe.*

CHRYSANTHEMUM-BOX AND STAND.

WHATEVER may be the outcome of the Conference held recently under the auspices of the National Chrysanthemum Society with regard to increasing the size of stands, it is a fact that the bulk of the blooms exhibited at the present time need more space to show them off properly than is afforded by the present show-stands, and which are regarded as of regulation size. For some years now, some few of the leading Chrysanthemum societies have recognised this want, and have inserted a clause in their schedules to the effect that the stands for Japanese blooms may be larger than those previously employed and allowed. If all societies were to adopt this view, not making it compulsory that all stands must be larger for Japanese, the end, it appears to me, would be gained, because those persons now so adverse to all change would be quick to note the advantages

suffice for all sections, except the Japanese, and for the reflexed and incurved blooms in the Japanese, where these are required to be shown as a distinct class. At the largest exhibitions it seems quite necessary now to have classes for both these, where space and funds will allow of the addition. For the Japanese varieties the board should be 28 inches long by 21 inches wide, 8 inches in depth at the back, 3 inches in front; this is a substantial increase, and one that will last for some years, and avert complaints as to want of size now heard. The regulation pattern at present is 2 feet long and 1½ feet wide, 6 inches high at the back, and 3 inches at the front. This size suffices for twelve blooms.

For twenty-four blooms, two stands of twelve each are usually employed, as being more convenient than one of 4 feet. The question of transit-costs will crop up with the advent of larger stands, and that of expense in making them will be another item to be considered by those who require additional space. Instead of going to the cost of providing what are known as travelling boxes made to fit the stands, with the blooms already arranged on them, I would suggest a rough box fitted with loose trays, one fitting on

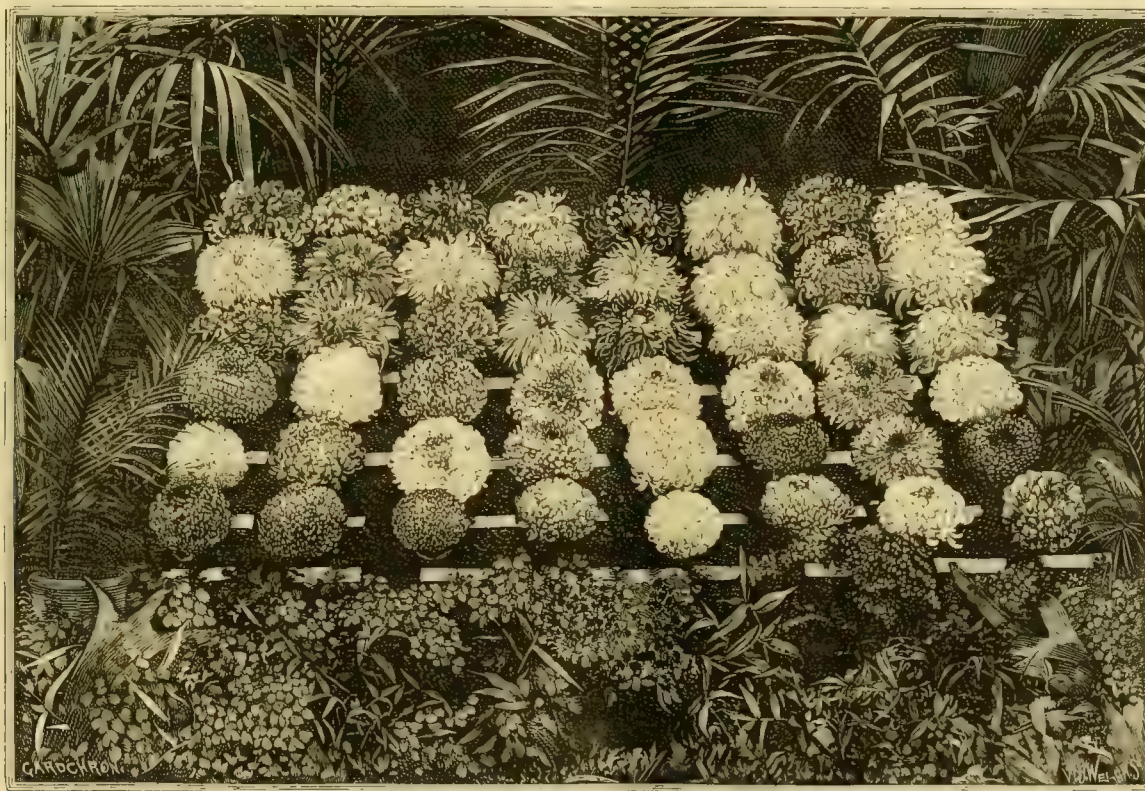


FIG. 79.—A STAND OF JAPANESE CHRYSANTHEMUMS. (SEE PAGE 522.)

It is remarkable for its narrow terete leaves, somewhat like those of a *Brassavola*, but in other respects the habit is that of *Pleurothallis*. The racemes are pendulous, three to seven-flowered, and the flowers themselves are horizontal or sub-erect, of a dull brownish claret colour, puberulous outside, and the sepals are so connivent, that the flowers only open at the summit. The lip, described in detail below,

* *Pleurothallis teretifolia*, n. sp.—Plant densely tufted, about 9 inches high. Stems slender, about 3 to 5 inches long, sometimes shorter, with three membranous sheaths. Leaf terete, obtuse, slightly channelled at base, 2 to 2½ inches long, 1½ to 2 lines broad. Raceme slender, pendulous, 1 to 2½ inches long, three to seven-flowered. Bracts sheathing, obtuse, 1 to 1½ line long. Flowers 6 to 8 lines long, and of a dull brownish claret colour. Sepals fleshy, connivent, linear, subobtusely, minutely-puberulous, the lateral ones slightly falcate. Petals, obovate, oblong, obtuse, 2 lines long, rather brighter than the sepals. Lip light yellow, 3 lines long, with a long slender unguis nearly equalling the limb, and with a pair of sagittate teeth at its base. Limb oblong, subobtusely, minutely ciliate, base cordate. Column two-thirds as long as the petals, apex tridentate, pollen masses two. Native of Brazil.

gained by the bigger stands for displaying the blooms, and soon would follow suit, especially when they saw their chances of winning prizes narrowed, owing to their failing to grasp the good points of these stands. If exhibitors of larger blooms intend to win prizes they must adapt themselves to circumstances, and move with the times. To fail to win looks in this case like "sinking the ship for a ha'porth of tar." There is one point, though, about this increased size of stand, which those who are inexperienced should pay attention to—not to have the increase too great, or the remedy may be worse than the evil. Blooms placed on a stand that is too large for them do not look so well as those which are too large for a stand, for the reason that the size of the stand lessens in appearance the size of the blooms.

During a somewhat wide experience of Chrysanthemum showing last season, I came across several instances of too much board and too little flower, which is a mistake in point of appearance, and entails unnecessary expense. The existing size will

the top of another, these being lifted out at the top by means of holes cut in the trays, one at each end. Such a box can be made of any size that strikes the owner, because I suggest that the stands upon which the blooms are to be arranged should be carried loose to the show, the blooms being placed on them there. The box would then simply act as a receptacle for carrying the blooms, and nothing more. Even with the present method of carrying the blooms, they are seldom exhibited as arranged on the stands before leaving home; and it would be just as easy to lift the blooms out of the trays singly at the show, and put them in their places on the stand—in fact it would be simpler than the present methods. The box could be made in packing-case form, only that it need not be extra stout, and should be fitted with a hinged lid for convenience and security; blocks of wood could be fastened to the sides of the box for the trays to rest upon, a screw fixed on the top of the tray would prevent the trays moving should the box chance to be turned upside down. Holes the

same size as the cup which contains the water could be bored in the tray in which the flowers would be placed during transit. To obviate the difficulty which now exists of the cups of the tray above coming in contact with the blooms beneath, as in the case of the stands in ordinary travelling cases, the holes could be cut angle-wise; in the trays the blooms could be packed more easily and securely.

The blooms which are intended for the front row in the stand, being smaller, will need to be packed in the lower tray, the largest, for the back row, on the top, so that in removing them simplicity in the arrangement on the stands is effected. Less space between the trays in the lower part of the box would be required, owing to the smaller size of the blooms in the lower stands. Such a travelling case could be made by any one at a small cost, and if regard were paid to the lightness of the wood used, the cost of transit and of labour in removal would not exceed what is the rule now. *E. Molyneux.*

[As an illustration of the manner in which they can grow Chrysanthemums in Tasmania we give a figure (see p. 521) from a photograph sent us by Messrs. F. Walker & Co. of Launceston. It not only shows how well our friends at the Antipodes can grow their flowers, but it also illustrates a point raised by Mr. Molyneux and shows how unadvisable it is to exhibit flowers of different sizes and sections on the same board. It is useless, we suppose, to repeat our oft-expressed opinion that our colonial friends would render much greater services to horticulture by developing their native flowers than by slavishly imitating European customs. The Tasmanian flowers are singularly beautiful. Ed.]

THE WHEAT CROP OF 1892.

THE autumn of 1891 was generally unfavourable for wheat sowing. October, which is the great seed-time, was exceedingly wet. At Rothamsted, nearly 7 inches of rain were measured during the month; and there was also a considerable excess in the eastern, midland, and southern districts of England—especially in the southern. There was, again, a considerable excess of rain in December. Not only, therefore, was the land generally in too wet a condition for favourable sowing and early growth, but there would be in many cases unusual loss of soluble manurial matters, especially of nitrates, by drainage. From the beginning of January to nearly the end of May the rainfall was considerably below the average, almost throughout the Wheat-growing districts of England and of Scotland. It was also below the average in the eastern, midland, and southern districts of England, until past the middle of June. From this time to the end of August there was, upon the whole, a considerable excess of rain, which was pretty continuous during the greater part of July and the latter half of August.

As to temperature, the autumn of 1891—indeed, the whole period September to December inclusive—was considerably warmer than the average, excepting at the end of November, and again towards the end of December, the week ending December 26 being extremely cold. The greater part of January was also very cold; but warm weather set in towards the end of the month, and continued to about the middle of February. From this time, however, until the end of the first week in May, the temperature was, with the exception of a short period early in April, considerably below the average throughout the chief Wheat-growing districts of the country. The remainder of May and the beginning of June were warmer than the average, the end of May being unusually hot. Excepting early in July, when the temperature was rather over average, the period from the second week in June to nearly the middle of August was, upon the whole, considerably colder than the average.

The season may, therefore, be summed up as one of very great fluctuations, both of rainfall and of temperature. Up to the middle of June, however, there was a prospect of a fair crop of Wheat in many localities, and this was particularly the case at Rothamsted; but the frosts which occurred about and after the middle of the month, following some weeks of high temperature, did in mense damage. The result was blight

and mildew over large areas, and in this way the crops in the experimental field suffered very much. Lastly, the harvest weather has very generally been unfavourable.

The following table shows, in the usual form, the produce of Wheat on the selected plots in the field at Rothamsted, which has now grown the crop for forty-nine years in succession. It also gives, for comparison, the average produce over the immediately preceding ten years, the previous thirty years, and over the forty years, 1852 to 1891, inclusive.

Harvest.	Unmanured. Plot 3.	Farmyard Manure. Plot 2.	Artificial Manures.				Mean of Plots 3 2, and 7, 8, 9 (or 16).	
			Plot 7.	Plot 8.	Plot 9 (or 16).	Mean.		
<i>Bushels of Dressed Grain, per Acre.</i>								
1892	9½	33½	32	38½	31½	34	25½*	
Averages:—								
Ten years, 1882-91...	12½	38½	35	3½	38	37½	19½†	
Thirty years, 1852- 1881	13½	33½	32½	36	36½	34½	27½‡	
Forty years, 1852-91	13	34½	33½	36½	36½	35½	27½§	
<i>Weight per Bushel of Dressed Grain, in Pounds.</i>								
1892	59½	61½	60½	60½	60	60½	60½	
Averages:—								
Ten years, 1882-91...	59½	61	60½	60½	60½	60½	60½	
Thirty years, 1852- 1881	57½	60	59½	59½	58½	58½	58½	
Forty years, 1852- 1891	58½	60½	59½	59½	59	59½	59½	
<i>Total Straw, Chaff, &c., per Acre, Cwts.</i>								
1892	7½	30½	28½	35½	34	32½	23½	
Averages:—								
Ten years, 1882-91...	8	34½	34½	42½	42½	39½	27½	
Thirty years, 1852- 1881	11½	32	33½	39½	41½	38	27½	
Forty years, 1852-91	10½	32½	33½	40½	41½	38½	27½	

* 25½ bush. = 25½ bush. at 61 lb., and 25½ bush. at 60 lb. p. bush.
† 29½ bush. = 29½ bush. at 61 lb., and 29½ bush. at 60 lb. p. bush.
‡ 27½ bush. = 26½ bush. at 61 lb., and 26½ bush. at 60 lb. p. bush.
§ 27½ bush. = 27 bush. at 61 lb., and 27½ bush. at 60 lb. p. bush.

Before proceeding to draw any comparison between the produce of the present year and that of past seasons, it will be well to call attention to the fact that, over the last ten years, the average produce of the unmanured plot was rather less than that of the preceding thirty years; but, that of each of the manured plots was considerably higher over the last ten, than over the preceding thirty years. Thus, the produce by farmyard manure, was nearly 5 bushels higher over the last ten, than over the preceding thirty years, and the mean of the three artificially-manured plots was 2½ bushels more over the ten, than over the thirty years. Again: the general average produce of the selected plots, as shown in the last column, was 2½ bushels more over the last ten than over the preceding thirty years; or, if the forty years be divided into five periods of eight years each, the last eight years ending 1891, give a higher average produce than either of the four preceding eight yearly periods, and much higher than the two immediately preceding periods 1876-1883, and 1868-1875. In other words, the average produce of the last eight or ten years is considerably higher than that of the preceding years of the forty, and this should be borne in mind in comparing the produce of the present season with past averages.

It will be seen that, in 1892, the unmanured plot yields only 9½ bushels per acre, against an average of 12½ bushels over the last ten years, and of 13½ bushels over the preceding thirty years, showing a deficiency, therefore, of about 3½ bushels compared with the average produce of preceding years. The farmyard manure plot yields this year only 33½ bushels, against an average of 38½ over the last ten years, equal to a deficiency of nearly 5 bushels, though the produce is very nearly the same in the

present year as the average of the thirty years preceding the last ten. Two out of the three artificially-manured plots also yield much less than the average of the last ten years, but the third shows scarcely any deficiency. Taking the mean of the three artificially-manured plots, there is a deficiency of more than 3 bushels compared with the average of the last ten years, and of nearly a bushel compared with the average of the preceding thirty years. Upon the whole, however, the artificially-manured crops do not show so great a deficiency as the farmyard manured, or the unmanured. This is doubtless partly due to the fact that the greater portion of the artificial nitrogenous manures is not applied until the spring, and so it has escaped the autumn and winter rains, and loss by drainage. In contrast to the above results obtained this year, it may be observed that in 1891 the produce of the farmyard manure plot was 48½ bushels, which was 11½ bushels more than the average of the preceding ten years by that manure, and 7½ bushels higher than the mean produce of the artificially-manured plots in the same year. This year, on the other hand, the produce by farmyard manure is even slightly less than the mean of the three artificially-manured plots. It is probable that spring-sown and spring-manured Wheat, when got in in good time, will generally be better than the autumn-sown and autumn-manured, by reason of the less loss of nitrates by drainage.

Taking as usual the mean produce of the unmanured, of the farmyard manured, and of the three artificially-manured plots taken as one, the average produce of the selected plots is seen to be 25½ bushels; and as the crop was harvested under favourable conditions as to weather, the weight per bushel was 60½ lb., which is equal to the average of the last ten years, and more than the average of the preceding thirty years. The table further shows, that the produce of straw on the selected plots was this year considerably below the average; and it was besides much damaged. There is too much reason to believe that the result has been much the same in the country generally, and so far as this is the case, the farmer will not, as sometimes happens, have some compensation for a poor yield of grain in an abundance of straw.

As shown in the notes at the foot of the table, the 25½ bushels at the actual weight per bushel, correspond to 25½ bushels at 61 lb., and to 25½ bushels, or rather less than 26 bushel, at the standard weight of 60 lb. per bushel, which is now adopted by the Departments in the Official Returns. There can be no doubt that large areas of the crop of the country have been got in later and in worse condition than that of the experimental plots at Rothamsted. Indeed, the reports show more and more damage the later the harvest. Under these circumstances, it is pretty certain that the yield of the country at large will be less than that indicated by the mean results on the selected plots. But when it is considered that every bushel per acre more or less on our present reduced acreage, would only correspond to little more than a quarter of a million (286,898) quarters, it is obvious that so far as any estimate of the requirement for consumption, and consequently of the required imports, is concerned, exactitude in the estimate of the home crop comes to be of less importance than formerly; and this is especially the case in a year of low yield per acre as well as reduced area.

If, however, we adopt, by way of illustration, the yield indicated by the results on the experimental plots, namely 25½ bushels per acre at 60 lb. per bushel, as the average yield on the 2,295,183 acres under the crop in the United Kingdom, the aggregate home produce would be less than 7½ million (7,423,483) quarters; and deducting from this 2 bushels per acre for seed = 573,796 quarters, the home produce available for consumption would be less than 7 million (6,849,687) quarters. Next, taking the estimated population of the United Kingdom at the middle of the current harvest-year at nearly 38½ millions (38,318,588), and the consumption per head at 6 bushels of 60 lb. per bushel, as adopted last year for reasons then fully explained,

the total requirement for consumption would be 28½ million quarters (28,738,941). Deducting from this the amount assumed to be available from the home crop, there would remain nearly 22 million quarters (21,889,254) required to be provided from stocks and imports. We have thus the remarkable result that, even on the too favourable assumption of rather less than 26 bushels per acre, the produce of the reduced area under the crop in the United Kingdom would, after deducting the amount required for seed, supply considerably less than one-fourth of the total requirement for consumption! Or if, on the other hand, we were to suppose the crop of the country at large to amount to only 22 bushels per acre, the quantity of it available for consumption would represent only one-fifth of the total requirement. As already said, on the higher estimate of the home produce, the quantity required to be provided from stocks and imports would amount to nearly 22 million quarters, and on the lower estimate it would amount to almost exactly 23 million quarters, or only a little over one million more.

It may be observed that our estimate of the average yield of the country at large last year was thirty bushels per acre, at 60 lb. per bushel, and the evidence at command is in favour of the assumption that the estimate was more probably too low than too high. According to it, the quantity required to be provided from stocks and imports to meet the consumption of the harvest year was about 20 million quarters at 60 lb. per bushel, but the actual net imports within the period amounted to nearly 23 million quarters at 60 lb. per bushel. It is admitted that at the end of the past harvest-year the stocks of foreign Wheat in hand were very unusually large, whilst those of the home crop of 1891 were also large. With such an excess of supply over the requirements for consumption, there can be little surprise at the very low prices prevailing; nor can there be much doubt that whether the requirement for the current harvest-year be 22 or 23 million quarters beyond that supplied by the home crop, the accumulated stocks and further imports will prove adequate for our wants. *J. B. Lawes, Rothamsted, Oct. 20, 1892.*

FRUIT TREES ON NORTH WALLS.

THE advice of your correspondent, "H. W. W.," is worthy of consideration, viz., "never to put all your eggs in one basket," and in compliance with this maxim, do not plant all your fruit trees of whatever species upon the same aspect. He mentions the circumstance of having during the current season obtained a crop of Coe's Golden Drop Plum from trees trained to the north side of a wall, or on a north aspect, so that no doubt the bloom was somewhat later in expanding than that of similar trees trained on a south or on an east aspect, which were all destroyed by the late spring frost. I can well confirm the fact of this fine Plum, although now a very old variety, still one of the best, annually ripening its fruit upon an aspect facing due north. This Plum appears to have originated in the town of Bury St. Edmunds more than a century ago, and in a large garden near to that town there are, or at least there were, two large trees of this variety, which occupied a considerable portion of the north side of a somewhat high garden wall. These trees could only, at most, have a very few hours of direct sunshine, and that in the very early morning and late in the evenings, so that, as might have been expected, the blooms were somewhat later in expanding; but they had at the same time the advantage of escaping the effects of late spring frosts, which not infrequently proved fatal to that of trees upon a south, west, or east aspect, while the summers generally proved long enough to enable the trees on the northern aspect to ripen their fruit, which was in all respects as fine and as well flavoured as that of the trees on other aspects. It is quite possible that the northern sides of garden walls might with advantage be used more frequently than is at present the case,

for the purpose of training other species of fruit trees than the Morello Cherry and the red Currant upon, particularly in cases where, on account of danger from late or spring frost, it is desirable to retard rather than to hasten the expansion of flower buds.

As the season advances, the effect of sunshine upon the south side of a wall influences, to a very considerable extent, the opposite or northern side, so that there is possibly less danger to be apprehended from unripe fruit or immature wood and fruit-buds for the succeeding season than might be supposed. The bearing shoots and fruit-buds of the Morello Cherry, when trained, as is usually the case, on a northern aspect, seldom fail to ripen, and the same might be found to be the case as regards other varieties of the Cherry. Most varieties of the Plum, and many varieties of the Pear, will be found to succeed on a north aspect, and even the Apricot might, to some extent, be tried on this aspect. From its well-known habit of blooming so early in the season, its blooms, or embryo fruit, is possibly more frequently injured or even entirely destroyed by late frost than is the case with any other hardy fruit, and if its period of blooming could to some extent be retarded, it would doubtless be found to be an advantage. Most, if not all, the best varieties of Gooseberries will succeed upon a north wall, and the fruit will ripen as early, and will be found to be of as good quality as that of the same sorts produced on bushes fully exposed to the influence of the sun. It is not here intended to recommend the selection of a northern aspect for the cultivation of the Apricot, nor yet of the Plum, nor the Pear, further than to a limited extent, or by placing a portion of such trees on various aspects, an entire loss of any particular crop of fruit is less likely to occur. *P. G.*

THE HERBACEOUS BORDER.

THE PENTSTEMON.

Frost and wet combined made sad havoc of the garden flowers in October. The Michaelmas Daisies, of course, are less affected by the weather than any other hardy flower, but next to them come the Pentstemons. We flowered this summer a number of species of Pentstemons which had passed through the winter in the open borders, and very interesting they were as hardy garden plants for the flower garden; but I did not find any of them worthy to be compared with the October-flowering garden varieties. I say October-flowering advisedly, because the flowers are much more valuable in that month, the beauty of the flower garden having by that time well-nigh departed. A dazzling display might well be obtained during the months of August and September; but if the same plants are expected to flower in October, the seed-pods should be removed as soon as formed, else, if they are allowed to remain, the plants become too weak to flower so well in October as in the two previous months.

The culture of Pentstemons presents no difficulties, and the plant itself ought to be hardy, at least, so far as it is derived from *Pentstemon gentianoides*. Humboldt and Bonpland found it rather more than half a century ago, "in cold situations on the sloping sides of the mountain of Toluco (whose summit is covered with perpetual snow), at an elevation of 11,500 feet above the level of the sea." Lindley, describing the plant in the *Botanical Register* for the year 1838, t. 3, says, "10,500 feet above sea-level." He also states that "the plants will stand out all the winter unprotected, but generally suffer very much from the wet." That is the reason they do not stand the winter well out-of-doors in Great Britain, and why many other plants, which a knowledge of their habitat would lead us to believe should be quite hardy in the open, succumb to our winters. The wet and frost together make sad havoc with them, whereas, on their native mountains, although the cold is more intense, the plants are covered at the time thickly with snow. It is generally supposed

that the parentage of the garden *Pentstemon* may be traced to *P. gentianoides*. This, I believe, is quite correct, so far as the deep red, rose, crimson, and scarlet varieties are included. The flowers which belong to those colours are differently formed, and droop more than those of other species. The corolla is longer, rather more slender, and the mouth does not open so widely. The arrangement of the flowers on the spikes is rather different from that of the varieties with purplish flowers. The variety figured in the *Botanical Magazine*, t. 3661, is evidently a good garden form, the flowers a rich scarlet-crimson colour. I fancy that the varieties with shorter corollas and more open flowers, with shorter peduncles, have been derived from *P. campanulata*, also a native of Mexico, but introduced into British gardens about the closing years of the last century by Sir Joseph Banks. Probably the two species have also been hybridised in gardens, and together have produced the very varied colours now possessed by the garden varieties. I am indebted to Mr. Forbes, of Hawick, and Messrs. Stuart & Mein, of Kelso, for collections of the best varieties cultivated by them, the colours ranging from white with a faint tinge of pink and lilac to deepest purple, crimson, and scarlet. A long list of names might be thought tedious; but after carefully looking over the collections in the third week of October, I found the following to be the best at that time:—Walter Scott, a vigorous plant, producing an immense spike of well-formed, reddish-purple flowers, the throat white, blotched on the lip dark purple; Mrs. Chaplain, delicate purple; Mrs. Rae, rose, white throat; Mrs. Grieve, rose, well opened white throat; Jas. Fairbairn, bright deep rose, white throat; Mrs. Tait, purplish-rose crimson, blotch on the lip; Mrs. Gladstone, deep pink, darker blotch in the throat; Eclipse, deep rosy-red, rich maroon throat; Alphonse Daudet, rosy-crimson, the throat prettily veined; Mrs. Page, a lovely scarlet colour; Pyramide, lilac and white—fine; John Duncanson, crimson-scarlet, white throat—fine; A. McCullum, reddish-crimson, maroon blotch; Conspectus, lilac, purple and white; Mrs. Bosanquet, purplish-red; Matthew Young, Mont Blanc, and Olivier de Serre, have a striking family likeness—white, with a faint rosy blush; Le Borda, rich purplish colour, maroon throat. The above are the cream of the collection, although many others should be named; but I purposely left it until very late, so as to ascertain the best varieties for standing frost and wet.

We put in the cuttings of Pentstemons a few days ago, as we like to have very late flowering plants, and the later the cuttings are struck, the later the bloom. The cuttings are inserted in sandy soil, and they are sometimes merely covered with hand-lights; but for the last few years I have found it to answer better if we use boxes of a compost of two parts loam, one of leaf-mould, one of rotted manure, and one of sharp sand. There are always plenty of suitable young growths on the plants, and these are taken off just under a pair of leaves, and inserted firmly in the boxes. The cuttings strike under the same conditions as shrubby *Calceolarias*, and may be wintered like them in cold frames. In spring, they are planted out in other boxes, and at wider distances apart, and, finally, planted where they are to flower in the month of May. If planted in beds or patches, 18 inches should be allowed from plant to plant, and the soil should be worked to a good depth and well manured. The plants will, with good cultivation, grow to a height of 3 feet, and produce numerous flower-spikes. *J. Douglas.*

DAWPOOL.

NEAR the ancient Norse village of Thurston, on the low red sandstone hills, which afford a full view of the estuary of the Dee, lies the residence of T. H. Ismay, Esq., called Dawpool. The situation is exposed to strong westerly winds. Trees are scarce in the neighbourhood, the hills being clothed with Heather and Gorse. The soil is sandy and shallow, but in the low-lying parts large deposits of boulder clay exist. In such a situation as this it is necessary

to afford efficient protection from the strong gales which frequently blow from the sea. The gardener, Mr. Bryers, finds that hedges are better than walls as wind-breaks.

A belt of mixed trees protects the lawn; inside this are a number of good standard Tea Roses, doing well. In the centre of the lawn is a pair of Hodgin's Holly, about 32 yards in circumference. Hollies thrive very well here. The terrace wall in front of the hall is covered with choice flowering shrubs, such as *Ceanothus*, *Berberis*, *Cotoneaster*, *Gum Cistus*, &c.; the roots of each are in a chambered space, to keep the plants dwarf, and encourage flowering. A steep bank, facing north-west, is clothed with mixed *Pernettya mucronata*, full of berries, and the rock where it crops up to the surface has been planted with *Skimmias*, *Heaths*, *Cotoneasters*, *Andromedas*, *Salins*, &c. Clumps of *Rhododendrons* and *Heaths* insensibly merge into the Gorse and Heather of the hills. A drive, about half-a-mile, has been planted with Austrian Pine on the windward side, but although the protection thus afforded will be good, the effect will be monotonous, unless other coloured evergreens are planted between.

Greenhouses.—The houses are very substantial structures, the foundations of stone, with sheets of lead between it and the woodwork, the paths covered with red tiles, and a supply of water laid on.

The Vines are bearing good crops—*Madresfield* Court grafted on *Hamburg*, and *Muscat of Alexandria* on *Sweetwater*; *Alicantes* on own roots.

The orchard-house contains a number of good standard and pyramid Peaches, *Nectarines*, and *Plums* in pots; the pots are plunged, but the roots are not allowed to ramble outside. Trained Peaches on front and back; the former stopped at about 2 feet from the wall to let in sunlight to latter.

Poinsettias are largely grown; cuttings put in in March, and grown in cool house until October, when they are removed to the stove, which is furnished with large tank, through which hot-water pipes flow to give bottom-heat.

Chrysanthemums are used to decorate the vineries in winter; they are grown in 10-inch pots, cut back once to 2 inches, and subsequently pinched; when the flower-buds appear, top-dressings of *Standen's* manure are used—by this treatment, dwarf plants, bearing several large flowers, are formed.

A fernery, furnished with a tank, with thick plate-glass front, containing fish, looks very effective, but the fountain, with a pair of terra-cotta figures bearing an umbrella, seems out of place.

Fruit-room, potting-sheds, &c., are built of stone, with concrete floors, and teak-wood shelves, and fitted with electric light. *F. V. D.*

ROUND BIRMINGHAM.

HIGHBURY, MOOR GREEN.—Standing in its own grounds of rather more than 30 acres in extent, the fine residence of the Right Hon. Joseph Chamberlain, M.P., is a prominent object, and the gardens with which it is surrounded form a centre of attraction to all interested in gardening, and especially cultivators of Orchids. In the management of the gardens, Mr. W. Earp has ably succeeded the late Mr. Cooper; and in the culture of the Orchids, Mr. H. A. Burberry, during the few years he has held the office, has succeeded in putting the stamp of good culture on them all. But in every part of the garden the guiding spirit of the master is evident, it being almost his only pleasure. On the occasion of our visit, he was kind enough to accompany us on our tour of inspection, and it soon became evident that he had an intimate knowledge of every specimen, its history, and, in many cases, interesting stories to tell of the battles which were fought before it could be subjected, and induced to grow well and flower properly, as civilised Orchids should.

The garden, which was laid out by the late Mr. Milner, has a few fine old trees, whose numbers,

however, are slowly diminishing. Already a fine Beech, in a spot where it was much wanted, has gone, and another is but barely existing. The same sort of decay of old trees is going on in many places, and the new systems of town drainage seem to be the more probable cause of it. One grand old Yew at Highbury has a pleasant nook arranged for it, and it is carefully looked after, for it is of special interest, as being one of two in this district mentioned in *Doomsday Book*.

Looking from the high ground, just below the mansion, we see the undulating grass-clad gardens with their banks and borders of shrubs, shelving away to the pretty sedge-bordered lake below, on an island in which the moor-fowl and others make their home. A winding walk runs around the gardens, sometimes by banks of shrubs and stately Conifers, and sometimes alpine rockeries and ferneries, and beneath the branches of trees, whose variety of foliage at the present season give even more beautiful tints than do the summer flowers. For the purpose of coloured foliage, the American Maples have been largely planted, and the yellow-leaved *Retinosporas* are thrifty plants, although many other Conifers do not succeed. Beside the walk which traverses the gardens, herbaceous and alpine plants are plentifully planted, as on these the outdoor display mainly depends, *Pelargoniums* and summer bedding plants being confined to a few beds near the dwelling. Beyond the roseries is a pretty model dairy; and on all sides charming views open up, in which the dark green of the Hollies contrasts well with the bright yellow and red of the autumn tints of other trees.

The Orchid-houses.—These and other houses, form a block of some thirteen or fourteen span-roofed buildings connected by a corridor, which runs from the dwelling, and by a lofty warm conservatory and rockery planted with Ferns, and terminated with a *Dendrobium* and other Orchid-houses. The wall of this connecting corridor is utilised as a back for the large lean-to *Odontoglossum*-house and the smaller *Masdevallia*-house. The conservatory, corridor, and principal houses are lighted, when necessary, by electric light, and the whole block is so conveniently arranged that any part may be visited from the house without once going into the open air. Few more beautiful walks can be imagined than that in the lofty conservatory, with its tall specimens of Palms and Tree Ferns, and passing through the cool Fern-clad rockery, and along the corridor or covered way, from the roof of which depend bright flowers of the *Passifloras*, *Habrothamnus*, *Jasmines*, *Lapagerias*, *Plumbagos*, and other climbers, which are planted in the narrow borders beneath, and in which are graceful Ferns and *Eucharis*, *Ixoras*, and other flowering plants. Some few Orchids, too, are grown in this corridor. Here is a strong tall plant of *Sobralia Cattleyæ*, which, after its fashion, grows on and on, but never flowers. On the roof, the varieties of Mexican *Lælias* and *Barkerias* are found to thrive well at certain stages of their growth, but during the summer they are kept in one of the sunny fruit-houses.

The first Orchid-house entered showed a superb lot of *Cattleyas* and *Lælias*, equal to any in the country for vigour, and for the healthy, hard sharp-edged foliage, which bespeaks continued health and vigour. Quantities of *Cattleya labiata* vera of various importations were flowering, and exhibited the usefulness and beauty of the species. *C. Gaskelliana*, too, is well liked, and the long period of its flowering is not its least recommendation. A fine white form of it, and of *C. Mossii Wagneri*, are in the Highbury collection. One large specimen of *C. Trianae* alba had ten flower sheaths, and many large specimens of other rare species or varieties were noted. Hybrid *Cattleyas* and *Lælias* seem to get a good deal of attention, and among them are to be found most of the rare or showy varieties, as *C. Chamberlainiana* ×, *C. Brymeriana* ×, *C. Sororia* ×, *Lælia exoniensis*, &c.; and in some home-raised seedlings, between *Lælia cinnabarina* and *Cattleya Lawrenceana* and other promising combinations, the

Highbury collection contributes to garden Orchids that which seems now to be expected from any establishment of note. Specially remarkable in the first *Cattleya*-house were *Cattleya Bowringiana*, with numerous flowers on strong spikes; some healthy plants of *Compactia*; nice tufts of *Sarcocylus Hartmanni*, and other small-growing species, which thrive here admirably, suspended close to the glass.

In the first division of the next range, suspended from the roof, was a grand collection of *Phalenopsis* with large leaves, and numerous aerial roots, the whole forming a sight rarely seen; for in most collections the *Phalenopsis*, which here thrive so well and flower so profusely, refuse to be comforted, although they be tried in every possible manner. *P. Schilleriana* and *P. amabilis* form the chief part of the collection, but many other species are grown, and all do well. In the next division, *Aërides Lawrenceana* and *Miltonia Roezlii* were doing well, as also a number of plants of *Angraecum Sanderianum*, a great favourite here, and which were showing profusely for bloom.

The next is an intermediate-house with a good show of flowers of *Cattleya maxima*; here a grand form of *Lælia elegans Schilleriana*; a splendid show of *Odontoglossum grande* and *Vanda cœrulea*, with exceptionally large flowers; a pretty and graceful sprinkling of plants of *Dendrobium Phalenopsis Schroderianum*, *D. bigibbum*, and some of the elegant *Oncidium incurvum* were observed. Plants of *O. Forbesii* were furnished with very massive spikes; also *Lælia Dayana* and *L. præstans*; some fine white and orange-flowered *Dendrobium formosum giganteum*, *Cattleya aurea*, *C. Dominiana* ×, and other species, the whole being cleverly arranged and interspersed with Ferns.

In the *Odontoglossum*-house, the appearance of the plants maintained the high standard found in the other houses, the plants of *O. crispum* and *O. Pescatorei* being in first-rate condition. Along the roof were hung a number of *Odontoglossum Rossii majus*, *O. Cervantesii* varieties, and the pretty scarlet *Cochlioda Noetzeliana*. In the Mexican *Lælia*-house, the white and coloured *L. anceps* were observed to be well furnished with flower-spikes. Among the coloured ones, *L. a. Chamberlainiana* is the largest and brightest-coloured variety known, and *L. a. Highburiensis* is very remarkable; *Lælia Gouldiana*, too, and other species are about to flower.

The next is the house of the lesser-growing *Cattleyas*, *Miltonia vexillaria*, *Cœlogyne cristata*, *C. c. alba*, &c. Then comes a house in which the plants of *Odontoglossum citrosum* were superb, and the *Lycastes*, *Oncidium tigrinum*, &c., equally good. After that the collection of showy *Masdevallias* follow, and so on through all the general run of showy Orchids, until we came to the *Dendrobiums*, which, with the *Phalenopsis*, the *Cattleyas*, and *Lælias*, and the *Odontoglossums*, may be said to be the pride of the collection. The *Dendrobiums* are arranged in two houses, one at present holding the bulk of those at rest, and the warmer one the plants of *D. Phalenopsis*, *D. bigibbum*, and others of that class; and these grow here to unusual proportions, and flower most satisfactorily. One plant of *D. bigibbum* had a very thick pseudobulb 2 feet 9 inches in length, and it might easily have been mistaken for *D. superbiens*. *Cattleya Lawrenceana* and *C. Massiana* do well in this house. The *Dendrobium Wardianum* and *D. nobile* varieties have extraordinary growths; and *D. Venus* ×, *D. Casiope* ×, *D. Leechianum* ×, and other hybrids, seem even more easily grown than the species.

And now, perhaps, the question will be asked, "What about the *Cypripediums*?" Well, the truth must be told: they are not liked. It is true that that wonderful new species, *C. Chamberlainianum*, was named in honour of Mr. Chamberlain, and that the best piece of it imported is to be found there, but the rest are conspicuous by their absence. However, *chacun à son goût* is well understood among orchidists, and each, as a rule, goes on his own way rejoicing.

Having left the Orchid-houses, we passed through those that contained Camellias, Azaleas, &c.; the pretty Fern-house, with its hanging-baskets of Maidenhair; the stove-house, bright with scarlet-spathed Anthuriums; the Cyclamen and Primula-house, the large Tea Rose-house, the long range of fruit-houses, sheltering a vast army of fine Chrysanthemums, and so we passed out, well pleased with what we had seen and heard.

(To be continued.)

SCOTLAND.

DUPPLIN CASTLE, PERTH.

It is not uncommon, when travelling by railway to Perth from the west, to hear passengers comment strongly on the long stretches of glass and spacious

form an imposing picture, with the river Earn (then much swollen by the rains) sweeping along the strath. Mr. Browning, the head gardener, was from home, but a representative who knows all that is necessary to enlighten a visitor, was easily found. A long range of houses, somewhat narrow, and about 500 feet in length, was entered, in which fruits and Roses (for early blooms) are extensively grown. Alicante Grapes were first-rate in every respect, and would grace any exhibition table—Mrs. Pearson and Golden Queen were in good condition. Muscats and Mrs. Pince are largely grown, and fine in bunch and berry.

In the Peach-houses, the back walls are clothed with healthy trees; Bellegarde and Walburton Admirable are in great favour. The fronts of these houses are used for Tomato-growing, where they produce abundant crops; Austin's Eclipse is noticeable for its free-cropping proclivities and its fine

flowering) was entered, and we then emerged into a plant-stove, in which are numerous table plants and flowering species for winter supply. Dendrobium nobile and Jamesianum, Maxillarias, and Cattleyas are among the leading species. Cypripediums were numerous and healthy, and some were throwing up their flowers. C. insigne occupies much space, and is much valued. C. Sedeni was flowering freely, Pancratiums, Crotons, Eucharis, and other plants were also in luxuriant condition. A Cucumber and another Tomato-house were passed through, meeting the requirements with plentiful supplies; another structure was filled with Begonias of nearly every shade of colour. Then a small house, with Odontoglossums (chiefly Pescatorea and Alexandræ) and Masdevallias, was inspected, where all the inmates are in capital condition. Lapageria rosea and alba were in great profusion of bloom overhead in corridors, and of much value for table work. Heliotropes,



FIG. 50.—VIEW OF DUPPLIN CASTLE, PERTH.

walled-in gardens which, on the face of the hill, near Forteviot, are landmarks of no ordinary kind. I wended my way to inspect them, and found much in this fine garden to render my hurried visit a profitable and enjoyable one. The view alone from the front of the main range of glass is so grand that one feels amply repaid for a journey to Dupplin, the splendid seat of the Earl of Kinnoull. In the south, east, and west, scenery of the most attractive description meets the eye. The numerous seats along the northern side of the Ochil hills form a beautiful and continuous landscape. The hill of Moncrieffe is very striking, and at the base is the pretty seat of the Moncrieffe family. Rossie, a rising place of horticulture, is seen adjoining the finely-wooded domain of Freeland, of Orchid fame, and westward, the romantic and picturesque grounds of Inverary are conspicuous, and many of the fine seats in Strathearn are readily descried in the distance, which

appearance, and is undoubtedly one of the best. Long lines of zonal Pelargoniums line the sides of the paths, and are valued for decorative purposes. Figs on back walls were in most fruitful condition; Brown Turkey and White Marseilles appear to be most in favour. Camellias are grown extensively, and are loaded with flower-buds; the old double white is in special favour. Foliage itself is attractive on many of the fine plants. Greenhouse Rhododendrons and Azaleas are extensively and well-grown.

Passing by several small structures, the Gardenia-house was entered, where an attractive collection of choice plants is loaded with open and opening flowers. The foliage on the huge specimens was in perfect health and thoroughly clean. The plants are planted out in a bed, and are most serviceable. G. florida appears to be much in favour, and is one of the freest-flowering varieties. Passing down a corridor, a Rose-house (chiefly for winter-

Habrothamnus, and other free-flowering plants cover available spaces on back walls of plant-houses. Passing outward, Chrysanthemums are seen in great numbers. Single Dahlias, Antirrhinums (a fine strain), and Dobbie's choice Violas (among numerous species of decorative plants in borders) were remarkably attractive. The vegetable garden, which slopes very steeply to the south, partakes largely of the ornamental as well as the useful, and about 10 acres are enclosed with walls. The moist season appears to have suited vegetable-growing at Dupplin, every available space being closely cropped with fine culinary produce. Apples and Pears were scarce, but Apricots (the crop was gathered) had been a fine show, and such a long wall covered with healthy fruit-bearing trees is very creditable indeed; the position at the head of the slope appears to suit them remarkably well. Much more could be written on these fine gardens, and also of the grounds (in which

are fine Conifers and other arboricultural treasures), which form one of the finest seats in Perthshire, and it is very pleasing to visit an extensive place in such fine order, and one which throughout reflects much credit on Mr. Browning's skilful management. *M. T.*

A MYSTERY SOLVED.

For the past fifty-three years, a curious production has been known to mycologists as occurring buried in the ground in Australia, and known to the colonists as "Native Bread." In 1839, Berkeley described it in the *Annals of Natural History* (p. 326) as *Mylitta australis*, under which name it was figured by Corda in his *Icones Fungorum*. Although no fruit has ever been discovered, there was a suspicion of its being related to the Truffles, from the fact of its being subterranean, and from the mottled appearance of its internal substance. It has often been found as large as a child's head, but when dry it is as hard as a stone. Latterly, there have been many insinuations of a suspicion that this production was nothing more than a large sclerotium, a suspicion now proved to be true. Nearly twelve months since I was informed that a specimen had been found with a Mushroom growing from it; and now that a specimen has been sent to me with the fungus growing upon it, the whole mystery is clear. The sclerotium or *Mylitta* was about 6 inches in diameter, and from it was growing a pure white *Polyporus*, closely allied to *Polyporus ovinus*. In the present instance there were two individuals growing so closely together as to appear but one and the pair almost as large as a man's fist, perfectly white and fleshy, but becoming tough when dry. The pileus was convex, almost hemispherical, and finely velvety on the surface, supported upon a short thick stem, not exceeding an inch in length. The tubes of the hymenium 7 millimètres long, and the angular pores about half a millimètre in diameter, with an acute edge. It is intended to describe this new species fully and technically under the name of *Polyporus Mylittæ*, Cooke and Massee but such an interesting discovery should be made known at once. The specimen above alluded to was found in South Australia, but we have heard of another in Victoria. *M. C. Cooke.*

FORESTRY.

LAND PREPARATION, DRAINAGE, &c.

As a general rule, trees have now matured their growth for this season, and when the young wood becomes hard and firm, the trees may be lifted and planted out where they are to remain. In view of such circumstances, the fencing, draining, trenching, and other preliminary work in advance, should now command the planter's attention, so that no time may be lost when the proper time for planting out arrives. I need hardly say, that the draining of wet ground should take precedence of all other operations, the number and size of the drains required to be made will depend on local circumstances, and must always be settled on the spot. I may, however, state that I have occasionally seen a large area of ground kept almost in a quagmire by a single spring, and when such is the case, the spring should be tapped at its source by cutting a drain large enough to carry off the water at any season; and should other wet spots occur here and there along the line of this drain, small branch-drains should be cut of sufficient number and size to render the surface dry and firm. This branch of forestry requires to be well studied and carried out before a plant is put into the ground.

Plantation drains should always, if possible, be kept open, as pipe or tile drains are almost sure to become choked up with tree-roots in course of time, and thus create a great deal of trouble and expense. Dry ground, on the other hand, that is resting upon a hard subsoil of moor pan, should be broken up with a pick at the spots where the

trees are to be planted, but in cases where hardwood trees are to be used of a pretty large size, capacious pits should be dug so as to allow the roots to be spread out to their full length without crossing each other. The spots that are loosened with a pick may be planted with small Conifers by the "notch" system of planting, which is a great saving of labour and expense.

PLANTATION ROADS.

In the formation of plantations of any great extent for ornament and utility combined, it is necessary to lay out roads, and this can be done best whilst the ground is unplanted. The size of these roads may vary to taste and local circumstances; but roads 24 feet wide, so that two vehicles can pass each other with freedom, will be found to give general satisfaction. As a general rule, these forest roads do not require to be macadamised—a small ditch cut along either side of the road, and some loose material laid on the centre of the road to raise it a little above the sides, so that the water may run off into the ditches will suffice. Where the surface is loose and open, sow the seeds of some hardy grasses with deep spreading roots, which in due time will render the surface firm and passable. *J. B. Webster.*

THE BULB GARDEN.

NARCISSUS BIFLORUS.

This late-flowering variety is well worthy a place in the mixed border, as it prolongs the display of these flowers, both for cutting and for decoration, where growing. Its pleasant perfume is a point in its favour, especially as a cut bloom. It is one of the species of *Narcissus* which will go on increasing for years in the same place if left alone, which is a great advantage, as it saves the troublesome job of lifting after ripening. *E. M.*

FLORISTS' FLOWERS.

DAHLIAS.

On paying the nursery of Mr. M. V. Seale a visit recently, where Dahlias are largely and well grown, many novelties were noted which were quite fit for exhibition. The finest of the doubles were R. T. Rollinson, Mr. Gladstone, Glow-worm, Mrs. Langtry, Mrs. John Downie, Mrs. Saunders, Hugh Austin, and Prince Bismarck. In fine single-flowered varieties were Guliema, W. C. Harvey, Duchess of Albany, Miss Jefferies, James Scobie, Albert Victor, and Northern India, all of which are of great merit. The Cactus formed a grand section, some of the best being St. Catherine, Baron Schroder, Kyneth, Duke of Clarence, Delicata, Cannell's Favourite, Robert Mayhew, Harry Freeman, and Professor Baldwin. The noticeable Pompon Dahlias, some of which were at their best, were Admiration, Phoebe, Lilian, Leila, Whisper, Lady Blanche, and Margery, a salmon-red, a free bloomer, and with good habit, *R. Edwards, Beechy Lees, Oxford.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

DIGGING AND MANURING.—When charred rubbish is to be obtained in quantity, it is a valuable fertiliser to be dug into the soil at this season, and is a capital substitute for stable and farmyard manure. When these have been much employed, the soil of gardens long under cultivation is generally too rich in vegetable matter, and good results are sure to follow the use of burnt materials and of lime. The fertile portion of the soil is the surface, and in digging and trenching it is not wise to turn this to the bottom, and let its place be taken by the soil poor in organisms from the subsoil, and the practice is far worse than shallow digging. The deep cultivation of the land, and the retention of the best

soil at the surface, may be carried out at the same time. Vacant plots of ground should not be allowed to lie fallow, but manured at the earliest moment, if manure be required by the kind of crop that it will carry next year, and be trenched or dug, tidying it, or, in any case, leaving it in a rough state. Manure-heaps should be turned, the sides into the middle, and be put up fair and square, the roughest and least decayed portion being got well below the surface. Fresh rubbish and crop clearings may be got into a condition fit for use by mixing lime in a fresh state with them in process of turning. If manure-heaps are small, a covering of soil should be laid on top and sides, to prevent in a measure the loss of ammonia. To light land add loam and burnt soil, and even clay will be of benefit if spread on the surface for the frost to act upon it, and then be forked into the staple. Chalk and lime should now be spread on land deficient in lime, and especially where stone fruits are grown.

CLUBBING OF CABBAGES, ETC.—The free use of lime and chalk will diminish the loss of plants from this cause; gas-lime is also of much benefit, if not applied too heavily. It is best to spread it evenly, and allow it to lay on the land for a few weeks before digging it in. Gas-lime should be broken up quite small before it is dug into the soil. As a remedy against wire-worm it is very effective, and the good uses of soot and fresh-slaked lime are well known. Peruvian guano, superphosphate of lime, and nitrate of soda applied to the soil in winter, if much infested with injurious insects, are of great service.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

THE PLANT STOVE.—The temperature of this house should be slightly reduced to 65° and 75° by day, according to the state of the weather and the outside temperature; and at night 60° or 65°. When affording air—and a little fresh air should be admitted every day—much care should be exercised, admitting it as early in the morning as the weather permits, and closing the ventilators soon after noon, so as to shut in a quantity of the sun's heat. Keep the foliage of all plants required for furnishing purposes clean by frequent sponging it with clear water; and if the smaller specimens of *Dracenas*, *Palms*, *Crotons*, *Pandanus*, and others, be infested with the white or the brown scale insects, special attention should be given to well cleaning them of these disfiguring insects. Most summer-flowering plants, as *Allamanda*, *Clerodendron*, *Stephanotis*, *Bougainvillea*, *Dipladenia*, should now be in a state of rest, or suspended growth, and may be placed together at one end of the stove, so that they can have similar treatment. These plants should not be allowed to get dust dry, or the wood will shrivel, which is usually an injury to the plant, but sufficient water should be given, at intervals, to preserve the plumpness of the wood—more than that is not necessary. If *Stephanotis* is wintered in a cool-house, as some are, less water is needed. Specimen plants of *Ixora* which have ceased to flower should also be kept drier at the roots, and in a little lower temperature. The young stock of *Ixoras* will now be growing freely, and should be kept in a light position to prevent weakly growth of shoots and leaves; and such shoots as are taking an undue lead should have their point pinched out, which will throw strength into the weaker ones. Large plants of *Croton* which have got straggly should be kept dry at the roots for a few days preparatory to their being headed back. They will be, after this operation, made shapely plants. After the cutting-back is done, the pots containing the plants should be plunged in heat, and if the bed consists of hard tree leaves, so much the better. A light overhead syringing with tepid water should be afforded these plants every morning to induce a good break; and afford but little water at the roots before the young shoots have fully appeared. Mealy-bug usually infests *Crotons*, and a sharp examination should be made frequently, and if any of these insects are discovered, remedies must be at once taken against them, and this is the more easily done while the plants are sparingly furnished with shoots.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

FIGS.—If the houses in which Figs are grown are specially devoted to this fruit, they should undergo the same thorough kind of cleansing as that recommended for vineries and peacheries. Thin

out as much of the old wood of the Fig trees as circumstances will permit, and all small twiggy growth which is not required to cover the trellis of trained trees; reduce the number of shoots of the current year's growth to what is necessary to cover the allotted space, so that they stand at from 4 to 6 inches apart, retaining always those which are the best ripened and best placed to form the groundwork of the tree, those which are intended to supply the first crop, and those growths which will yield later fruit the following year. Any very gross shoots should be cut well back, or removed entirely. The shortening of young growths, however, should be avoided in all cases when they have attained maturity, as it is from them that the first fruits will be taken. When large plants have been allowed to throw up suckers freely from the root, and these have been laid in to form part of the tree, the plants in time will consist entirely of these unfruitful branches, and the present time may be utilised in altering this undesirable state of things, by removing as many of these branches as can be spared, and spreading out the others to fill the space occasioned by their removal. By first taking off the lower branches on each side of the centre, and allowing the one nearest that point to make as much growth as possible during the growing season, the plants in a few years can be got to stand on single stems, and in this form they will be found more fruitful than they have been. Figs grown as standards or bushes should also have their weakly wood cut out, and their fruiting shoots thinned to 6 inches asunder. Nothing is gained by crowding these, and when the plants have occupied the space at command, the longest branches may be removed, if there are younger ones to succeed them. In clearing the plants of scale or red-spider, nothing beats a stiff brush and Fir-tree oil. The brush lifts the old scale which covers hundreds of its progeny, and enables the oil to destroy them. After re-tying these plants on their trellises, another good dressing of this insecticide may be afforded them by means of a syringe. I may here state that this insecticide is most efficacious when applied in a hot state, and the water used free from lime or other minerals. One or two applications between now and the time of starting to force will be of great benefit in checking the spread of these insects. Remove the surface of the border, and top-dress with a mixture of friable loam and lime, or lime-rubbish, and afford a slight watering if the soil is dry. On no account, however, indiscriminately soak the border, or more harm than good will be done. Keep the atmosphere cool and airy, and admit a few degrees of frost, if this can be done without risk to the heating apparatus, or other occupants of the house.

THE ORCHID HOUSES.

By H. A. BURBERRY, *Orchid Grower, Highbury, Birmingham.*

AN INSECT ENEMY TO DENDROBIUMS.—A species of beetle, not large, but apparently large enough to be capable of destroying valuable Dendrobiums, has made its appearance in collections, causing Orchid-growers much uneasiness. They have already enough reason to complain of the greatness of the number of the enemies to their plants. The short space of time which has elapsed since my introduction to this last recruit prevents my speaking authoritatively on the subject, but my experience, such as it is, I hasten to give, fearing that the pest may possibly be busy at work in somebody's collection unobserved. The beetle, according to present knowledge, seems peculiar to the Dendrobiums of North Australia, and those generally belonging to that section. It was discovered here on *D. biggibum*, and a further search resulted in its being found on *D. Phalanopsis*, *D. Phalanopsis Schroderianum*, *D. superbium*, *D. stratiotes*, and *D. Dalhousianum*, the last-named being the most severely attacked. All of the specimens found are of the same size, being about half the size of an ant, resembling too, the ant in colour, and when seen through a strong lens, they look like an ordinary black-beetle. They are very slow of motion, but it may be they are not fully developed, and their movement in the adult stage may be livelier. Their presence is indicated by small cleanly eaten holes on the pseudobulbs, which look like the holes seen in worm-eaten furniture. If these holes escape notice, the yellowing of the leaves and the shrivelling of the pseudobulbs for about an inch above and below the hole will show that something is wrong; and on cutting the pseudobulb open a nest or small cavity will be found, containing one or more of the beetles, and the surrounding tissues

will be quite decayed. It is an open question whether the holes are first pierced by the adult beetle, and the larvæ deposited therein, or whether they are hatched in the pseudobulb and afterwards eat their way out of it, as in the case of the Cattle-fly. I incline to the former theory. It would be interesting, however, to have the experience of other growers on the subject, and information as to its first appearance in this country, and whence imported. If allowed to propagate unchecked, this beetle would doubtless become a source of great annoyance to orchidists; but there is, at present, little cause for alarm, as the pest will, in all probability, soon be stamped out if proper precautions are taken. I would advise an examination of the plants, and if indications of the beetle are found, to cut the pseudobulbs, and burn them, and for that matter the whole plant might be burnt if badly infested; and all other plants cleaned with some proper kind of insecticide.

THE FLOWER GARDEN.

By H. W. WARD, *Gardener, Longford Castle, Salisbury.*

ROSE-PLANTING.—In continuation of my remarks in the previous week on the planting of Roses, I now give a select list of varieties of the various classes of Roses. They are what is understood as garden varieties, in contradistinction to those which are essentially show Roses, being of good habit, strong constitution, and profuse bloomers, and handsome withal.

BOURBON ROSES.—Acidalie, white, tinted rose, very beautiful; Armosa, clear, bright pink—an old but excellent Rose, of China Rose-like habit; a constant-blooming variety. Catherine Guillot, very bright carmine-rose, free bloomer, and good habit; Queen of Bedders, deep crimson, and very free-flowering; Rev. H. H. D'Ombrai, bright carmine, large, and of good form; Souvenir de la Malmaison, pale blush, very large—a fine free-blooming autumn Rose; a time of year when the Bourbon Roses produce their finest blooms.

CHINA ROSES.—American Banner, flowers semi-double, yellowish-white, with broad, rose-magenta stripes—very free-flowering; Archduke Charles, rose, changing to deep crimson; Clara Sylvain, pure white, large; Cramoisi Supérieur, brilliant crimson: fine for beds; Ducher, pure white, medium size, full and well formed, growth vigorous, fine for massing; James Sprunt, deep crimson, pretty shape, of moderate size, a distinct, climbing-habited sport from Cramoisi Supérieur.

HYBRID CHINA ROSES.—Blairii No. 2, pale blush, very large and double; Coupe d'Hébé, waxy-pink, beautiful; Fulgens, bright crimson-scarlet, superb; Juno, pale rose, very large; Madame Plantier, pure white, in large clusters; Paul Verdier, very bright rose, large, full, and fine shape, and very vigorous.

HYBRID PERPETUALS.—A. K. Williams, bright carmine, red, large, round, imbricated flower; Alfred Colomb, bright red, full and very showy; Auguste Rigotard, bright crimson, large and good; Beattie Johnson, blush-white, large, very sweet, and good habit; Captain Christy, delicate flesh colour, deeper in the centre, very effective; Charles Lefebvre, fine, bright, dazzling crimson-scarlet colour, and form very good; Comtesse d'Oxford, brilliant carmine, very large and full, of fine form and vigorous growth; Dr. Sewell, brilliant crimson-scarlet, shaded with purple, large and full, and finely-cupped form; Duchess of Edinburgh, a fine light-coloured Rose, large, full, and well-formed; Duke of Connaught, rich, bright velvety-crimson, with a fiery blush, free and good; Fisher Holmes, bright scarlet, imbricated; François Michelin, deep rose, reverse of petals silvery, large, full, and globular form; Helen Paul, white, sometimes shaded with pink, full, and globular; Hippolyte Jamain, fine, bright rose, shaded, with carmine, very large and full; John Hopper, fine rosy-crimson, back of petals fine lilac tint, large and full; Jules Finger, white, centre shaded with pink, growth very vigorous, flowers large and full, and perfect in form; La France, beautiful rosy-lilac, very distinct, large, and full, free-blooming; Madame Eugène Verdier, bright rose, suffused, with white, large and showy; Magna Charta, bright pink, suffused with carmine, very large, full, and of good form; Marguerite de St. Amand, bright pink, large, full, and imbricated; Marie Baumann, light crimson-red—very large and full; Mdle.

Marie Rady, fine brilliant red—good form, and very fine; Miss Hassard, delicate pinkish-flesh, large, full, fine shape, and very sweet; Ulrich Brunner, bright cerise-red, large, and full.

MOSS ROSES: SUMMER VARIETIES.—Alice Leroy, blush, shaded with rose—large and double; Baronne de Wassenaer, deep rose—very large and double; Captain Ingram, dark velvety-purple—fine; Marie de Blois, bright rose—large, full, and well mossed, handsome bud; Nuit de Young, velvety-purple; White Bath, paper-white, beautiful, large, and good.

PERPETUAL MOSS ROSES.—Blanche Moreau, pure white, of perfect form, well mossed, the sepals passing beyond the bud nearly an inch; James Veitch, deep violet, shaded crimson, large and double; Madame Moreau, fine vermilion-red, veined with white—very large; Madame Edouard Osy, reddish-crimson; Perpetual White Moss, white—very pretty in the bud; Souper et Notting, fine bright rose—perfect form, very large and full. Brief lists of Noisette, Tea, and other sections of the Rose not included in the above, will be given shortly.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, *Gardener, Mereworth Castle, Maidstone.*

ORCHARDS.—Now that the best time to plant fruit trees has arrived, the work, if on a large scale, should push forward, so as to get the planting finished before the very frosty weather sets in. The early planted trees, if the work is well done, usually start away freely the following spring, and make rapid progress the first year; whereas those which are planted late in the winter or in the spring make much slower growth, especially if the summer be a dry one, and the time at the disposal of the gardener does not admit of their being well watered. The planter should select and plant only the most serviceable varieties, and not too many of these. The land should be got into thorough order previously to planting. If the land is under grass (where the fruits are always better in colour) remove from 6 to 9 square feet of turf, and then throw out the top spit, breaking up the subsoil. If poor and unsuitable, it should be carted away, and the holes filled up with a better compost; otherwise, the bottom spit may be ameliorated by mixing with it road scrapings, burnt earth, and mortar rubble, and in poor soil manure should always be added to the subsoil, and also to the upper portion, the trees growing well in this kind of soil, when manure is added at first, and at intervals afterwards. The larger-growing varieties of Apples and Pears should stand from 30 to 40 feet apart; Plums at 20, and Damsons at 25 feet apart, unless they are intended as a windbreak, then from 10 to 15 feet apart will be more desirable distances at which to plant. The wider intervals between the permanent trees admit of bush or half-standard Apples, Pears, Quinces, Medlars, being planted midway between them, to be left or taken away as may appear desirable in after years. The Medlar and Quince are scarce fruits in all large towns, fetching comparatively high prices at the present day, and there is no reason why their culture should not be greatly extended. After the stations for the trees have been prepared, strong stakes should be driven into the hard bottom for fastening the trees to as soon as planted. In planting, the roots must not be too deeply buried in the soil, and it is advisable in damp soils to plant a little above the ground-level, and firm. Orchard land should be well drained, and, if possible, have a slope to the north, and the trees should be in lines running north to south. Damsons may well be used in the outermost lines, and the Farleigh Prolific is a fine variety to plant, and may be planted somewhat close together, and in that way, as aforesaid, the trees form good wind screens. The following are good varieties to plant:—Dessert: Cox's Pomona, King of the Pippins, Margil, Blenheim Orange, Kerry and Ribston Pippins, Summer Golding, Wyken Pippin, Worcester Pearmain, Red Quarrenden, Gladstone, Winter Queening (for very late), Claygate's Pearmain, and Mabbot's Pearmain. These are all good, but there are many others to select from. For high colour, Baumann's Reinette, which keeps well. Kitchen varieties: Warner's King, Lady Henniker, Fillbasket, Lord Derby, Lord Grosvenor, Waltham Abbey Seedling, Lane's Prince Albert, Stirling Castle, Ecklinville Seedling, Queen, Golden Spire, Stone's, New Hawthornden, Yorkshire Beauty, Keswick, Bramley Seedling (very good), Northern Greening, Wellington, Tower of Glamis, Alfriston, &c.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	Nov. 1	Royal Horticultural Society Committees meet at Drill Hall, James Street, Westminster.
FRIDAY,	Nov. 4	Dundee Horticultural Association.

SHOWS.

TUESDAY,	Nov. 1	Royal Horticultural Society, at the Drill Hall, James Street, Westminster. Prizes for Chrysanthemums, &c.
WEDNESDAY,	Nov. 2	Chrysanthemums at Brighton, Brixton, Barnstable, and Watford.
THURSDAY,	Nov. 3	Chrysanthemums at Croydon, Portsmouth, Ascot, and Ealing (two days).
FRIDAY,	Nov. 4	Chrysanthemums at Hertford (two days).
FRIDAY,	Nov. 4	Steyning and Romford (two days).
FRIDAY,	Nov. 4	At Bolton, Chrysanthemums, Plants, Fruits, &c. (two days).

SALES.

MONDAY,	Oct. 31	Dutch Bulbs, Lilies, Plants, &c., at Stevens' Rooms.
TUESDAY,	Nov. 1	Bulbs and Plants, at Protheroe & Morris' Rooms.
TUESDAY,	Nov. 1	Dutch Bulbs, Lilies, Plants, &c., at Stevens' Rooms.
TUESDAY,	Nov. 1	Dutch Bulbs and Orchids, at Protheroe & Morris' Rooms.
TUESDAY,	Nov. 1	Annual Sale at Hale Farm Nurseries, Tottenham, by Protheroe & Morris.
WEDNESDAY,	Nov. 2	Dutch Bulbs, Lilies, Plants, &c., at Stevens' Rooms.
WEDNESDAY,	Nov. 2	Sale of Nursery Stock, at Hickmandias Nursery, Knockholt, Kent, by Protheroe & Morris.
WEDNESDAY,	Nov. 2	Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	Nov. 3	Sale at Lee's Nursery, Isleworth, by Protheroe & Morris (two days).
THURSDAY,	Nov. 3	Dutch Bulbs and Plants at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 4	Sale of Orchids and Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 4	Dutch Bulbs, Lilies, Plants, &c., at Stevens' Rooms.
SATURDAY,	Nov. 5	Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—45°·5.

WE are, all of us, so accustomed to think of Apples as articles of food, that we do not give the great army of cider-drinkers a thought; and yet good cider would, if it were plentiful, run beer hard for the first place in the estimation of many persons. It was known to the ancients; and PLINY alludes to perry and cider as a wine made from the Syrian pod, from Pears and Apples of every kind. Cider seems to have been brought into Normandy by the Moors of Biscay. It was afterwards spread through some other provinces of France, whence it was introduced into England. As a refreshing beverage with but small intoxicating powers when drunk in moderation, it should certainly have preference over the thin ales, made from we know not what, which persons, not total abstainers, ordinarily drink.

Cider Apples are divided into three classes—the sweet, the bitter, and the sour. The second are the best; they afford a denser juice, richer in sugar, which clarifies well, and when fermented, keeps a long time.

The French, who make a good deal of cider, classify some of their favourite Apples according to their specific gravity, and taking distilled water at 1000, the following varieties give the different results:—

Juice of the Green Reinette	1094
" " English Reinette	1080
" " Red Reinette	1072
" " Musk Reinette	1069
" " Foullet Rayé	1064
" " Orange Apple	1063
" " Reinette de Caux	1060

The undermentioned varieties of cider Apples are recommended in that fine work, the *Herefordshire Pomona*, published by the late Dr. BULL, with the assistance in technical detail of Dr. HOGG:—

Ansell, or Ansell, a red, russetty Apple, much grown at Oldbury, in the Vale of Berkley, Gloucestershire. It grows erect, and bears freely; it is a late fruit, and makes excellent cider.

Alford is a white, medium-sized Devonshire variety. The tree is large and spreading, and bears freely; it is late, has a sweet juice, and makes very good cider.

Bell Orchard Seedling, or Ledbury Bell, is of medium size, in colour, shape, and general appearance somewhat resembling Foxwhelp; the flesh, which is red-tinted, has rich juice of good flavour; it makes cider of the first quality. The tree is an erect grower, very strong, and a very free bearer.

Bennett Apple is an orange-coloured fruit, of more than medium size, with sweet juice, having a specific gravity of 1073.

Best Bache, or Bache's Kernel, is an old variety much grown in south-east Herefordshire; it is of full medium size, yellow in colour, streaked with pale and dark red. It has a rich juice, of the specific gravity of the one previously mentioned.

Broad-leaved Hereford is a large green conical Apple, with a slight flush of red on the sunny side. It makes good cider.

Devonshire Royal Wilding, or Red Hill Crab, makes a first-class cider, with great roughness and body. Five guineas have been offered, says Mr. Hugh Stafford, of Piner, in 1753, for a hogshead of it, whilst ordinary cider was fetching but twenty shillings. When cooked, the fruit has something of the rough flavour of the Quince.

Jersey Chisel is a striped bitter-sweet Apple that is in high esteem in Somersetshire. It is a constant and free bearer, making rich cider, of high colour, and if mixed with some rich sweet Apples ripening at the same time, the cider becomes of the highest quality.

Of well-known and esteemed varieties, may be mentioned—

Early Varieties.—Bran Rose, Cherry Hereford, Cherry Pearmain, Cider, Lady's Finger, Gennet Moyle, Red Splash, and Sack Apple.

Mid-season.—Bastard Foxwhelp, Dymock Red, Eggleton Styre, Forest Styre, Foxwhelp, Garter Apple, Hagloe Crab, Mun's Red, Red Foxwhelp, Red Royal, White Styre.

Late.—Black Hereford, Bromley Carrion, Cowarne Red, Kingston Black, Strawberry, Hereford, Styre Wilding, Tanner's Red, and Wilding Bitter-sweet.

Although much of our cider comes from the western and south-western parts of England, there is no reason whatever why cider Apples should not be grown in any part of the country, provided the land is of a suitable quality. It was THOMAS ANDREW KNIGHT's opinion that "Herefordshire is not so much indebted for celebrity as a cider county to her soil as to her valuable varieties of fruit." The same authority also says:—"The excellence of the cider formerly made from the Red Streak, Golden Pippin and Styre in light soils, seems to evince that some fruits receive benefit from those qualities in the soil by which others are injured."

Dr. BULL in the before-mentioned work says, "That it is a curious fact, and certainly more than a coincidence, that the practical experience of so many generations of men should show that

the two English counties which have chiefly given its high character to English cider, viz., Herefordshire and Devonshire, are both remarkable for the same character of soil, that is, for the deep clay loam of the old red sandstone. This experience is fully borne out in our own times, and even in those favoured counties, the districts specially noted for this character of soil are equally remarkable for cider of the highest flavour and quality." Although the qualities and nature of this kind of soil produce the highest results, very fair cider can be made on any loamy soil, if it be of sufficient depth, and is properly drained, should it stand in need of draining.

The growth of cider-fruit is more eminently suited to farmers than is that of market fruit, as once properly selected varieties are planted with the necessary care at the first, duly cutting them back to form a head at that time, and if the orchards are manured every few years after the trees begin to bear, or before, if progress is slow, nothing more is necessary, beyond occasionally thinning the crown, and preserving the young trees from damage by farm-stock, hares, and rabbits. The cultivator has no need to root-prune the trees, as these are certain to bear, if he wait long enough, and the severance of the anchoring roots of a large-headed tree would be a grave mistake. Grease-bands would make the trees secure against the winter moth, and a naphtha lamp would assist him to rid the trees of those destructive moths which nest in the branches.

If what we have said should induce land-owners and farmers who may read these remarks to give cider-making the consideration it deserves, we shall have helped them to carry on their contest with the present adverse conditions of farming and the cultivation generally of the land.

We have already alluded to the superb *Herefordshire Pomona*, but as this must be inaccessible to many, we may call attention to the abstract from it published by JAKEMAN & CARVER, of Hereford, under the title of *The Apple and Pear as Vintage Fruits*.

SEEDLING SUGAR-CANES.—A short time ago considerable interest was taken in the announcement made that seedlings of the Sugar-cane had been raised at Java and Barbados, and that in spite of many statements to the contrary, the cultivated forms of the sugar-cane had not entirely lost the power of producing fertile seed. Since that time, the seeds of the Sugar-cane have been observed in the glumes; they have, moreover, been fully described, and further, their germination has been so carefully observed as to leave no doubt whatever on the subject. Several hundreds of seedling canes raised at Barbados, Java, and latterly at Kew, have been grown during the last two years, and the variation amongst them, as might easily be supposed, has been very considerable. Some few have already been proved to be of especial value. Of the vigour of growth of the new canes, it is sufficient to refer our readers to the illustration of a seedling cane grown at the Botanical Gardens, Georgetown, British Guiana. It yet remains to be proved whether the bulk of the seedling canes are richer to sugar, and are better adapted to the requirements of the planter than the old canes. A somewhat careful and protracted system of experiment and selection will have to be carried out in order to eliminate the worthless sorts, and retain only those of special promise. Already we understand that in one remarkable instance a seedling cane grown at British Guiana from a batch of seedlings raised at Barbados, has been pronounced to be superior to any of the existing canes. This is known as the Scard cane. No doubt many other equally promising sorts will be forthcoming in the future. In the meantime



FIG. 81.—A SEEDLING SUGAR-CANE. (SEE P. 528.)

we can only recommend those who have it in their power to improve so valuable and important a plant as the tropical Sugar-cane to persevere along the well-known lines followed in regard to other economic plants. They must be satisfied with small advances at a time, and patiently wait for the success which must wait upon all intelligent and well-directed effort.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Society will be held, as usual, in the Drill Hall, Westminster, on Tuesday next, November 1. At 3 o'clock in the afternoon a paper on "Fruit Trees in Pots" will be read by the Rev. W. WILKS, M.A., Secretary of the Society. Among the exhibits, Chrysanthemums will doubtless form a conspicuous item, especially as the Council have offered prizes for competition in three different classes. Growers wishing to enter the lists should communicate with the superintendent of the shows as to the space, &c., required.

CHISWICK GARDENS.—The Michaelmas Daisies, which for a long time past has been one of the chief floral features in the gardens of the Royal Horticultural Society at Chiswick, have now practically finished flowering for this year. Their place, however, has been filled by the large collection of Chrysanthemums, which have been moved into the large conservatory. The plants are in a fine healthy condition, and will soon be a mass of flower worth seeing during the approaching winter months.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. GEORGE J. INGRAM, Secretary, 50, Parliament Street, London, S.W., desires us to inform intending Candidates for the next Election of Pensioners on the funds of this Institution, that they should at once apply for the necessary forms of application, which must be returned to him on or before November 25th next, after which date they cannot be received.

LINNEAN SOCIETY.—The first meeting of the session 1892-93 will be held on Thursday, November 3, 1892, at 8 P.M. precisely, when the following paper will be read:—"A Theoretical Origin of Endogens through an aquatic habit." By the Rev. Professor HENSLOW, M.A., F.L.S.

HORTICULTURAL INSTRUCTION.—The following course of lectures is in progress at the Heriot-Watt College, Edinburgh. The lecturer is JOHN H. WILSON, D.Sc., F.R.S.E., and the class meets on Fridays, 7.15 to 8.15 P.M., commencing Friday, October 14, 1892, and terminating March 17, 1893. The course of lectures has been instituted primarily with reference to the training of gardeners; it will, however, include throughout, instruction of interest to amateurs. Excursions to notable gardens and nurseries will be arranged during the session. The lines to be followed in the course are briefly indicated in the following syllabus:—

Good and bad soils: Their physical and chemical characters; the plants which grow on them naturally; weeds. Choice of site for a garden: The physiography of the garden; landscape gardening—its various schools. Land surveying: The application of geometry, mensuration, and levelling in the laying-out of grounds. Hothouses: Their design, construction, and uses; heating and ventilating. A flowering plant: Its structure and life history; conditions conducive to healthy growth. Natural and artificial renovation of the soil: Diseases of garden crops; methods of prevention and cure. Vegetables, fruits, and flowers: The history, uses, and peculiarities of varieties commonly grown. Culture of culinary vegetables: Growing for market. Culture of fruits: Pruning, thinning, and training. Culture of herbaceous and pot plants. Principles of propagation: Cutting, layers, and grafts; sports; the fertilisation of flowers; the reproduction of Ferns and Selaginellas; the "improvement" of plants by hybridisation and selection. A review of the progress of horticulture: A gardener's education; hor-

ticulture as a recreation; town gardens; school gardens.

The fee, 5s. per session; matriculation fee, 1s. Among other classes which gardeners may attend with great advantage are the following:—Freehand-drawing, geometrical-drawing, botany, agriculture, chemistry, geology, physiography, and elementary Latin.

—The first of a series of lectures and demonstrations on "How Plants Grow" was given on Friday evening, October 14, at Witham, Essex, by Mr. DAVID HOUSTON, F.L.S., staff teacher on biology to the Technical Instruction Committee (County Council). The great importance to dwellers in the country of an earnest and systematic study of the structure and physiology of plants was insisted upon, first as part of a liberal education, secondly as a hand and eye training, and thirdly as a help to the fuller understanding of the why and wherefore of plant growth, leading, perhaps, to suggestions of practical utility in everyday practice on the farm. The lecturer traced the wonderful transformations by which air and soil get converted into living plant structures, and ended by an appeal to his audience to approach the study of plants seriously, to work earnestly, and to pin their faith to practical work.

—On Saturday, October 15, Mr. T. D. FISH delivered a lecture at the Town Hall, Northampton, on the "National and Local Importance of Horticulture, with Practical Hints on Fruit Growing." The lecture was delivered under the auspices of the local horticultural society and of the Technical Instruction Committee of the County Council.

FRUIT CULTURE.—The Cambridgeshire County Council has arranged with Mr. T. D. FISH to deliver a series of lectures upon the above subject, one to be given each week for five weeks. Outline of the course: Introduction, "National and Local Importance of Fruit Culture."

The Apple.—Propagation by seeds, layers, cuttings, suckers, budding, grafting. Planting: the time, mode, distance, transplanting. Stocks: Crab, Doucin, Paradise, &c. Forms and sizes of trees: standards, dwarfs, pyramids, espaliers, &c. Pruning: summer, winter, root. General Culture: mulching, watering. Sub-cropping with grass, vegetables, flowers, bush fruit, and Strawberries. Best varieties for profit, kitchen and cooking, table, preserving, cider cottage gardens, special localities. The harvesting of Apples: gathering, storing, packing, sorting, marketing. Diseases of Apples: canker, mildew, mealy-bug, aphides, maggots, caterpillars, weevils, antidotes, cures.

The Plum.—History and importance of the Plum. Propagation by suckers, budding, grafting. Varieties: Gages, dessert, kitchen, Prunes, Damsons. Planting: time, distance, method. General cultivation: pruning, training. Gathering, packing, marketing, drying, and preserving. Prevention and cure of insect and other insects: blight, barrenness, canker, gum, red-spider, grub, aphides, saw-fly, white scale, beetles, ear-wigs, Lady-birds, weevils.

The Pear.—Improvement of the Pear: agents thereof, our first technical teachers in Pear culture. Varieties for particular purposes and places. Planting in orchards, in gardens, distance, time, mode. Propagation: the Quince and other stocks; double or multiple grafting for fertility. Cultivation, general and special. Marketing, packing, drying. Pests and diseases, their prevention and cure.

The Cherry.—Propagation: planting, pruning, training, cultivation. Leading varieties: Bigarreaus, Geans, Dukes, Morellos. Pests and diseases, their prevention and cure.

Bush Fruits.—The Gooseberry: conditions of successful culture, propagation, planting, pruning, training, general and special culture, varieties for flavour and weight, green and ripe.—Currants: red, white, black, special pruning of black, best varieties. Pests and remedies.

The Raspberry.—Its propagation: by suckers, cuttings, seeds, time, mode, distance of planting, pruning, training, general culture, varieties, single and double bearing, uses.

The Strawberry.—Its history: uses, private and commercial importance, its propagation, planting, best soils and manures for, special culture in beds, rows, raised banks and pots, forcing the Strawberry, retarding ditto, varieties, early, mid-season, and late, distinct species.

Small trees and bushes will be exhibited in the lecture-room as object lessons in the arts of grafting, budding roots and tops, pruning, training, and planting. Questions will be freely welcomed and fully answered at the close of the lectures, which will last over an hour. Admission free. The course is designed so as to be useful to people with small gardens, as well as to large fruit growers.

GARDEN SEED CLUB.—A meeting of members of the Flower Show committee was, says the *Hampshire Index*, held at Broughton, Hants, lately, to consider the advisability of formulating some scheme to assist the working men of the village to purchase garden seeds and seed Potatoes, thereby promoting a better class of vegetables being grown. Mr. J. G. EDWARDS, Broughton House, presided, but there was only a small attendance of labourers. The chairman explained the proposed scheme, and after considerable discussion it was unanimously resolved to start a seed club. To every 1s. paid in by members, 3d. will be added by the committee.

HOOKE'S "ICONES PLANTARUM."—The September number contains illustrations of numerous newly-described plants, mostly of purely botanical interest, but some of interest to gardeners also, such as the tiny *Trichomanes Sayeri*, the two handsome *Clerodendrons* from Madagascar (*C. Baronianum* and *C. eucalycinum*), which would be well worth introducing. The *Hoyas* from the Solomon Islands, *H. Guppyi* and *H. affinis*, would also be desirable introductions. *Petrachondra Hamiltoni* is a very remarkable little plant, referred to *Borages*, but it has opposite glabrous leaves, no scales in the throat of the corolla, but plentiful perisperm.

BOTANICAL EXCHANGE CLUB.—The Report for 1891, printed by JAMES COLLINS & Co., Southgate, Manchester, is interesting even to those whose duties forbid them indulging in that eager search for specimens which formed the delight of their youth. Good work among Brambles, Roses, Hawkweed, and Willows seems to have been done, and some attempt made to discover the reason for their extreme variability. Unless this is done, the collection of all these minute variations is no more instructive, if so much so, than the accumulation of postage stamps. Among the plants mentioned are hybrids between *Senecio vulgaris* and *S. squalidus*, between *Linaria repens* and *L. vulgaris*, *Rumex crispus* and *R. obtusifolius*. Another curious plant is a form of *Urtica dioica*, nearly, but not quite, stingless. The male plant was in this amiable condition, not so the female. This is a very interesting observation in connection with the object of the formation of these hairs. It is obvious that those who desire to grasp their nettle should choose the var. *inermis*. The rarity of female plants of *Salix decipiens*, as compared with the males, is also noteworthy.

SOME INSECTS WHICH INFEST APPLE TREES.

When the gardener has put grease-bands round the stems of his trees to entrap the winter moth, and made his preparations for spraying the heads in early summer with London Purple, he is by no means sure that the leaves will not be eaten off by other insects, which have lain *perdus* in cocoons or webs all through the winter. These are mostly to be found in the twigs, and should be cut off with long-handled caterpillar (parrotbill) shears, or burnt by means of a paraffin lamp or an ordinary torch of tarred rope fastened on a slender pole. The following are the more common species:—*Porthesia chryso-rhœa*: the caterpillar has two red lines on the back, and white stripes on the sides. The young caterpillars, if abundant, will devour the whole of the foliage. *Aporia cratægi*: the caterpillar short, and thinly covered with hairs, ash-grey, on the back

black, with two broad orange-yellow or brown-red and one yellow stripe on the feet. *Vanessa poly-chloros*: the caterpillar is brownish-grey, with pale rusty-yellow back and side markings, and rusty-yellow thorns. They form in the early part of the year a nest, which is readily seen at a distance, and the caterpillars are as destructive as the former. All of these require that the trees get cleared of them before the leaves appear. We know of some large trees in a suburb of London which were for two years robbed of their foliage by one or other of these caterpillars, and at length the trees died. It was simply a case in which the proprietor did not know how to deal with the pests.

LOOK ON THIS PICTURE AND ON THAT:

LONDON.—Middle-aged Londoners can well remember the time when there was scarcely a tree to be seen planted in any thoroughfare of London or its suburbs. From an inquiry recently made in seventeen London districts, it has been found that three only are now absolutely treeless, while in the other fourteen the number of trees in the public highways is 14,700. Of these 5158 have been planted by the boards and vestries, and 5323 returned as planted by builders and others. Hampstead returns 2712, included in the first total, and adds, "Very small number planted at cost of vestry, and cannot state number planted by builders or property owners." Besides the expense of purchasing and planting, the average cost of maintenance is about 1s. 3½d. each tree per annum. In some instances, in the case of new streets, the trees have to be protected in the first instance with guards at the cost of the owners. In one district they are properly guarded and staked, and the cost included in the apportionments. In eight districts wooden guards are used, and in one expansion metal guards. In Hammersmith, trees are not allowed to be planted in streets of less width than 45 feet; and Streatham is restricted in this regard to not less than 40 feet street width.—*Daily News*.

PARIS.—In the parks and gardens of Paris there are not fewer than 299,294 shrubs and 22,038 trees; but these may be excluded from the comparison. Let us confine ourselves to the trees planted in the streets and roads. These are estimated by M. ANDRÉ at 100,000. As to the cost of an *arbre d'alignement*, that is set down as about 200 francs. This latter amount, even if we include preparation of the soil and maintenance, seems excessive; but so it is stated in the *Revue de l'Horticulture Belge* for the present month.

MASSACHUSETTS HORTICULTURAL SOCIETY.

—The first part of the *Transactions* for the year 1892 has been issued, and has more than local interest by reason of the excellent essays it contains. Among them we may note one on the soil and irrigation of Egypt, one on late experience with Insects, in which Professor RILEY says:—"The introduction of the cyclone nozzle, the discovery of the value of kerosene emulsion, the resin washes, and the hydrocyanic acid treatment, all of which have resulted from my work for the United States Government, together with the discovery of the Bordeaux Mixture as a fungicide, have virtually revolutionised our methods of dealing with insect diseases, so that the advance in the last few years is unprecedented in the history of horticulture. The first four discoveries are the results of scientific and experimental methods, while the Bordeaux Mixture was a chance discovery. The use of these five discoveries is now almost universal." That may be so in the States, but at our present rate of progress, it will be long before ignorance, routine, and prejudice will permit of a like statement to be made here with truth. Other subjects dealt with are the sewage question, road-making, fungous diseases and their remedies, by Professor HUMPHREY; the preservation of fruit, peat, &c. The account of the library of the Massachusetts Horticultural Society will be read with interest here.

MR. JOHN HORNE, F.L.S.—It is a matter of regret to record that Mr. JOHN HORNE, F.L.S., has been compelled, on account of ill-health, to resign

the post of Director of Gardens and Forests at Mauritius. Mr. HORNE has been connected with the Botanical Gardens at Mauritius for more than thirty years. He was trained at Kew, and his first appointment was as assistant gardener under the late Mr. JAMES DUNCAN, in 1861; he was appointed sub-director in 1866, and ultimately succeeded to the Directorship in 1877. Mr. HORNE had charge both of the Botanical Gardens and of the Forests in Mauritius for fifteen years, and he discharged the onerous duties of the dual posts with fidelity and success. The Mauritius Gardens, under his care, attained to a high degree of efficiency, and they were rendered of great service in promoting local indus-

of the inhabitants of Mauritius, and they have proved of signal service to the community by the introduction and distribution of new Sugar-canes and other plants of a valuable character. 'It is impossible to over-estimate the share taken by the Botanical Gardens in introducing hardy and productive varieties of Sugar-canes to Mauritius at a time when the Sugar industry was imperilled by the attacks of destructive insects and disease. Canes to the number of 130 varieties were introduced by the Gardens, propagated at them, and distributed from them, not in a cane or so of each variety, but in quantities of several thousand canes of each of the leading sorts to each planter.' Of late years the

Journal of the Bombay Natural History Society. In a letter announcing Mr. CARSTENSEN's death, he was described as popular and painstaking, and it was stated that he had greatly improved the garden under his charge, and he had contemplated extending the character and value of the collections so as to render them of greater scientific interest. *Kew Bulletin.*

COPPER COMPOUND AND THE POTATO DISEASE.—Owing to the increase of the Potato disease during the summer of 1890, A. GIRARD, who has a high reputation in Europe as a specialist in the chemistry of horticulture, thought it might be interesting to endeavour to find out whether the various



FIG. 82. AGED FOXWHELP APPLE TREES. (SEE P. 528.)

tries in the island. Mr. HORNE afforded valuable help in the production of the *Flora of Mauritius and Seychelles*, by Mr. J. G. BAKER, F.R.S. (published in 1877), and he contributed the principal supply of specimens illustrating the flora of the Seychelles. In 1877, Mr. HORNE visited Fiji (at the instance of its Government), and wrote *A Year in Fiji* (published in 1881), a work dealing chiefly with the vegetable resources of the colony. In a letter addressed by Kew to the Colonial Office, dated March 15, 1888, the following testimony was borne to the late Director's services:—"Mr. HORNE has most ably and industriously carried out his duties at Mauritius. The Mauritius Gardens are deservedly one of the most popular institutions in the island. They are annually visited by more than one-third

Gardens have rendered additional services in endeavouring to alleviate local depression by carrying on inquiries with the view of establishing minor industries. Indeed, there would appear to be no function attached to the Mauritius Botanic Gardens which Mr. HORNE has not endeavoured to discharge as fully as the means at his disposal have allowed." *Kew Bulletin.*

MR. G. CARSTENSEN.—News has been received at Kew of the death from typhoid fever of Mr. G. CARSTENSEN, Superintendent of the Victoria Municipal Gardens, Bombay. Mr. CARSTENSEN was recommended for this post by Kew in 1886. He appears to have done excellent service in promoting horticultural matters in Bombay, and he has contributed several papers on gardening subjects to the

copper compounds which have been proposed for destroying the parasitic ailments of plants possessed any power of adhering to the leaves, and what consequent reliance might be placed upon them. To determine this, he carried out experiments last year, which consisted in submitting the plants to the action of "artificial rains," of calculated intensity and duration, having previously treated the leaves with various compounds of copper, such as those which are being "boomed" so much just now. He then submitted the leaves to chemical examination, determining by analysis the quantity of copper adhering to their surfaces both before and after their being washed by these rains. Three types of rain were adopted, namely, (1), a violent storm, rain corresponding to a fall of 17 mm. of water in twenty-two

minutes; (2), a steady downpour, giving a fall of 15 mm. in six hours; and (3), a gentle rain giving a fall of 10 mm. in twenty-four hours. The watering apparatus, by means of which these "artificial rains" were produced, consisted essentially of an inverted, somewhat flat, cone revolved at the rate of eight times per minute by a hydraulic motor, from which the water could issue uniformly in drops, from the lower surface. GIRARD's conclusions are given in a paper in the *Comptes Rendus*, cxiv. (1892), pp. 234—236, and are substantially as follows:—1, That the proposed copper compounds have very different powers of adherence to the leaves of plants. 2, That it is under the action of violent rains and mechanical disturbance that the deposited copper disappears. 3, That, among these copper compositions, that which gives way the most is the copper-lime wash; that a diminution in the proportion of the lime slightly increases the stability, and that the addition of aluminous (clayey) substances is of no practical use. 4, That the copper-soda and the verdigris washes adhere nearly twice as well as the copper-lime wash, and that, best of all, is the copper-lime-sugar wash which has been suggested by Mons. MICHEL PERRET. GIRARD is therefore of opinion that it is to these three last compositions that practical people who desire to preserve their Potatoes from the fungus should turn. [1 mm. = about 1-25th of an English inch.]

THE THAMES AS A SEED DISTRIBUTOR.—Dr. GUPPY has, in the *Journal of the Linnean Society*, an interesting paper in which he discusses the seeds, seed vessels, and other vegetable drift which this river is ever carrying to the sea, especially in autumn, winter, and spring. January and February have yielded the largest collections. Dr. GUPPY used a tow net opposite the weirs and in the eddies, afterwards picking out the seeds, buds, insects, eggs, &c., which the rubbish contained. The seeds were in many cases sown so that the germinating properties could be tested, and the life-history of many of the water plants elucidated. In this way the effects of ice, of sea water, and other conditions on the duration of vitality of seed were studied. The absence of certain plants from the drift is as remarkable as the presence of others. Seeds of Pondweeds (*Potamogetons*), of the yellow and white Water Lily, *Persicaria*, Water Buttercup, Forget-me-Not, and *Scirpus lacustris*, it appears, have little or no power of floating, but remain in the river mud. Nevertheless, some of these plants, e.g., *Scirpus lacustris* and various *Potamogetons*, are found all over the globe, whence Dr. GUPPY considers that they are disseminated by the agency of birds.

GHEENT QUINQUENNIAL.—This is the object of a report published for one halfpenny by the Foreign Office, as one of a series of "subjects of general and commercial interest." It is pleasant to see our Government alive to the importance of these meetings, but the Report contains nothing that has not been already published, and the schedule has been distributed among our horticulturists for some time.

CHINESE FLORA.—Mr. HEMSLEY describes in the last-issued part of the *Journal of the Linnean Society* various newly-discovered plants from central and western China. Mr. PRATT's collections (which are those principally dealt with) were made in the neighbourhood of Tachienlu, near the frontiers of Tibet, at an elevation of about 8350 feet. The flora of the mountains of western China, says Mr. HEMSLEY, abounds in showy herbaceous plants, equalling, if not surpassing, the richest districts of the Himalayan region, of which, indeed, it is a continuation. As in the eastern Himalayas, every valley has its peculiar species.

BRANCHED PALMS.—In the last part of the *Journal of the Linnean Society* is an article by Mr. D. MORRIS, on "The Phenomena Concerned in the production of Forked and Branched Palms." This branching has, so far, only been observed in about ten genera, and it is due either to the destruction of a terminal bud by insects: or in other cases to the inordinate development of a lateral bud, which

thus assumes dimensions equal to those of the terminal bud, or to the replacement of flowering shoots by leaf-buds.

BAMBOO STAKES.—The use of Bamboo for Hop-poles, stakes, &c., is suggested, by reason of their cheapness and durability, and there is no doubt that, for certain purposes, they would advantageously replace Larch and various coppice woods. But it must not be forgotten that the hollow canes form excellent shelter for predatory insects, and therefore their use for growing plants is not altogether desirable, unless the end be plugged. We have lately seen some *Chrysanthemums* mangled by some unseen enemy, but on splitting open the Bamboo-sticks, both earwigs and woodlice were found to have taken refuge therein.

A DENDROLOGICAL SOCIETY.—A Society for the study and utilisation of trees and shrubs has been instituted in Germany. Botanists, gardeners, foresters, and amateurs, interested in trees are invited to join. The first general meeting will be held in the spring of 1893, at a place to be hereafter noted. The President is Hofmarschall von St. PAUL, the Vice-Presidents Prof. DIPPEL, Darmstadt; Prof. ENGLER, Berlin; Dr. Pfitzer, Heidelberg; the Treasurer, Herr BEISSNER, Inspector of the Botanic Garden, Bonn.

STOCKTON PUBLIC PARK.—The busy town of Stockton-on-Tees is to be provided with a park for the recreation of the inhabitants—a gift of Major ROEYER, and after whom it will be named; and on Thursday, October 20, the first trees were planted by Mrs. ROEYER and Mrs. HIND.

BLACK RICE OF BURMAH.—In the last number of the *Kew Bulletin* Professor CHURCH gives the details of an analysis of a black-grained Rice which becomes glutinous when cooked. The pigment is identical with that which gives the purple colour to Grapes, the leaves of the Copper Beech, and many other plants. The Rice contained 9.2 per cent. of albuminoids and 2.2 per cent. of oil, as contrasted with an average of 7.3 per cent. and 0.6 per cent., respectively, in other varieties. "Chemical analysis amply confirms the high dietetic value assigned to black Rice by native opinion."

AMERICAN AND CANADIAN APPLES.—The total number of barrels of Apples imported into Great Britain last season was 1,450,000.

BOURNEMOUTH AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—At the fortnightly meeting of the above, on Wednesday, the 19th inst., Mr. A. SKINNER, of Highcliffe, near Christchurch, read a comprehensive and valuable paper on "The Composition, Uses, and Abuses of Farmyard Manure." With reference to the comparative merits, from a manurial point of view, of the various materials used as litter, Mr. SKINNER expressed himself strongly in favour of straw. He deprecated the use of peat-moss litter, notwithstanding the fact that its analysis showed a higher percentage of nitrogen than that contained in straw. It is interesting to note that in the discussion which followed, peat-moss manure was condemned by a large majority of the speakers. Possibly the light, peaty nature of the soil in the district may account for this. It would be instructive to learn the experience of those who have applied it to heavy clay soils.

THE WORLD'S FAIR AT CHICAGO.—In order that bee-keeping in Great Britain shall be represented at the World's Fair at Chicago in 1893, the British Bee-Keepers' Association is endeavouring to get up a large exhibit of this year's honey worthy of the mother country, to send over. For this purpose bee-keepers throughout the kingdom are invited to send donations of bottles of extracted honey, in quantities of 5 lb. or upwards, to the Association, who will undertake to forward them free of cost to the exhibition. The only proviso required is, that the name of the locality in which the honey was gathered must be given, and the name of the donor

will appear on his exhibit. All communications of bee-keepers wishing to contribute, should be addressed to the Secretary, British Bee-Keepers' Association, 17, King William Street, Strand, W.C.

CULTIVATION OF GAMBIER IN BRITISH NORTH BORNEO.—The well-known tanning substance known as Gambier, the produce of *Uncaria Gambir*, which has attracted some attention of late, owing to the high price it has been realising in the European markets, and in consequence of which the cultivation of the plant has been recommended in other countries than the Straits Settlements, seems to promise well in North Borneo. In a report on "The Trade of the Territory administered by the British North Borneo Company," recently issued from the Foreign Office, the writer says:—"Gambier, whose growth is entirely confined to this part of the world, is now being tried, the Government having started a small experimental garden at the back of Sandarkan. The plants at the end of the year were four months old, and as large as those in the Straits Settlements at six months. This promise continues at the time of writing, and the Chinese in charge say they will be able to commence boiling two or three months earlier than in Singapore."

THE "GARDEN" PLATES.—In the *Garden* for October 15 is an alphabetical list of the coloured drawings that have been published in the *Garden* up to the end of 1891. This is a list for which workers ought to be thankful.

"REICHENBACHIA."—The first volume of the *Reichenbachia* (second series) is dedicated by special permission to the Empress of Russia.

CHRYSANTHEMUM EXHIBITING.—A grave discussion has lately been held as to the size of the boards on which Japanese *Chrysanthemums* should be exhibited, and ultimately it was agreed that a board (a specimen of which was exhibited decorated with flowers) should be adopted as a standard and of the following dimensions:—28 inches in length, 21 inches in width, 7 inches from centre to centre of each hole, 8 inches in depth at the back, and 3 inches in front. It is as lamentable as it is strange that the only point discussed was the dimensions of the board. Why should beautiful flowers be exhibited in the ugliest manner possible. It certainly is not necessary for purposes of study and comparison.

AN ACT OF VANDALISM.—We are sorry to hear that the magnificent Sabal *Blackburniana*, which was for years so fine a feature of the Ghent Botanic Garden, has been cut down. Its destruction was says the *Bulletin d'Arboriculture*, consequent upon that of the old dilapidated glass-houses, which have now been replaced by smaller and strictly utilitarian buildings. Much regret and considerable indignation has been roused by this act of vandalism, for the Palm was considered the finest of its kind in Europe, its measurements being computed as follows:—Height, 55 feet 8 inches; fronds, more than 6½ feet across, with petioles over 9 feet long. The case in which it was growing had been frequently lowered, so that its demolition was no easy task. We are sure that English botanists will join their Belgian confrères in regretting the loss of this splendid specimen; many visitors to Ghent next spring will miss it and its fellows from their accustomed places.

MEMORIAL TREES.—During his stay at Euston Lodge (says the *Stock Exchange*), the Prince of WALES planted a specimen of *Ginkgo adiantifolia* on the lawn at Stone Hall, one of the most ancient structures on the Euston estate. In this romantic spot a flower garden has been laid out under the personal direction of Lady BROOKE, who terms it her "Friendship Garden," her friends and relatives being invited to plant trees, evergreens, &c., there as mementos of their visits to the Lodge. Lady BROOKE is also arranging a Shakespearean border, the object being to include in it every plant mentioned in SHAKESPEARE's works.

PACKING FLOWERS.—Our old correspondent, Mr. J. SHEPPARD, gardener at Woolverstone Park,

Ipswich, gives in a communication received from him some time since, a hint about sending flowers to a distance in deal boxes, and that is to soak the box well in water, and let it drain for an hour, before putting in the flowers, Fern fronds, and other foliage. The reason for so doing is to prevent the flowers and foliage parting with their moisture, as they assuredly will do if the wood of which the box is made is very dry when they are packed.

ERYNGIUM ALPINUM CÆRULEUM, *Le Moniteur d'Horticulture*, October 10.

ERYNGIUM GIGANTEUM, *Le Moniteur d'Horticulture*, October 10.

GRAPE DUKE OF MALAKOFF, *Revue Horticole*, Oct. 1.

HELICONIA SPECTABILIS, Linden and Rodigas, *Illustration Horticole*, t. 156.

HYPERICUM ASCYRON, *Garten Flora*, t. 1381.

NECTABINE BRONZE. A chance seedling, with

ORCHID NOTES AND GLEANINGS.

DENDROBIUM PHALÆNOPSIS (*Fitzgerald*),
"BISTERNE" VARIETY.

THERE is now in flower in the fine collection of John Mills, Esq., of Bisterne, Ringwood, a very beautiful and distinct form of *Dendrobium Phalænopsis*. The flowers are large, well-formed, and of excellent shape.



FIG. 83.—FOXWHELP APPLE. (SEE P. 523.)

Boxes so treated, especially in the summer time, remain moist for a length of time, and their contents are kept fresh longer than would otherwise be the case. Mr. SHEPPARD does not like tin boxes, as the interior rapidly cools, or it gets heated if a glimmer of sunshine touches it.

PLANT PORTRAITS.

CERCIS SILIQUASTRUM, *Garden*, October 15.

COSMOS SPECTABILIS, *Revue Horticole*, August 16.

fruit of a purplish-bronzy tint, ripening late. Described by M. Carrière in *Revue Horticole*, October 15.

PAPAYER GLAUCUM, *Revue Horticole*, October 15.

PEACH, HALES' EARLY, *Canadian Horticulturist*, October.

RHODODENDRON RACEMOSUM, *Garden*, October 8.

SPIRÆA LOBATA, *Meehan's Monthly*, October.

TILLANDSIA DURATIL, *Revue Horticole*, October 1.

TRADESCANTIA SUPERBA, Linden and Rodigas, *Illustration Horticole*, t. 155.

ZYGOPETALUM CRINITUM, *Garden*, August 13.

The distinction, however, lies in this remarkable peculiarity—that every flower on each spray has pure white sepals; the petals are deep purple, and the lip a still darker purple, producing a very charming effect. I saw hundreds of plants of *Dendrobium Phalænopsis* in flower recently at Messrs. Sanders of St. Albans, and at Mr. Cypher's, Cheltenham, of every shade between white and purple, but there was not one so remarkably distinct as this. Mr. Mills has also in flower a good white form, but the most perfect white variety that I have seen is now in flower at Mr. Cypher's. *Emeric S. Berkeley*.

CYPRIPEDIUM CASTLEANUM X.

Reichenbachia, ser. 2, t. 45; see *Gardeners' Chronicle*, December 13, 1890, p. 702. A hybrid raised by Mr. Maynard in the establishment of Sander & Co., from *C. hirsutissimum* by *C. superbiens*, and quite intermediate in character. The flower has a bluish-purple tint. The dorsal sepal is darker in colour than might have been anticipated. The petals are much flatter than in the mother plant. The lip and staminode closely resemble those of *C. superbiens*.

ODONTOGLOSSUM CERVANTESII VAR. DECORUM.

Reichenbachia, ser. 2, t. 46.—A fine and rare variety of a charming little *Odontoglossum*. Tens of thousands of trees, principally Oaks, have within the last twenty years been felled, and hundreds of thousands of plants [Orchids] destroyed. This is mainly due, we are told, to the extension of railways in Mexico. It succeeds well in the *Odontoglossum*-house near the glass. In its native state, its pseudobulbs are every night bathed in moisture, which is usually dried up by the sun or wind of the morning.

CATTLEYA AMETHYSTOGLOSSA.

Reichenbachia, ser. 2, t. 47. For this, relying on the conditions under which it is found in Nature, the following treatment is counselled—a high temperature when growing, with as much light as possible without scorching, and an abundance of water, with a decided season of rest after the growths are completed.

CATTLEYA X ARNOLDIANA.

Reichenbachia, ser. 2, t. 48. A splendid hybrid, raised in the establishment of Messrs. Sander & Co. from *Lælia purpurata* by pollen of *Cattleya labiata*.

ANGULOIA UNIFLORA VAR. EBUENEA.

Flower uniform, ivory-white, without any spots.

BULBOPHYLLUM DEAREI,

originally described in our columns, 1883, pt. 2, p. 108, f. 17, as *Sarcopodium Dearei*. Flowers yellow, with reddish-brown transverse veins, lateral sepals stained purple; petals light yellow, veined with brown; lip creamy-white, spotted with purple, so delicately balanced that it moves with a touch. *Lindenia*, t. 345.

CATTLEYA ACKLANDIÆ.

Perianth segments green, blotched with purple; lip 3-lobed, lateral lobes folding over the column, front lobe flat, pinkish-violet. Native of Brazil. *Lindenia*, t. 346.

LÆLIO-CATTLEYA ELEGANS,

now considered to be a natural hybrid between *L. purpurata* and *Cattleya Leopoldi*. It is a native of South Brazil. Sepals and petals beautiful rose-purple, lip intense glowing crimson, except the lower half of the tube, which is sulphur-white, veined with light purple. *Lindenia*, t. 347.

HOME CORRESPONDENCE.

ROTATIONS OF CROPS.—The necessity and importance of a change of crops is generally admitted, and farmers at one time were bound down by their leases to hard-and-fast rules of rotation, and yet we all know that cottagers and allotment-holders go on from year to year and from age to age growing Potatoes on the same plot or piece of ground, and still get good yields, when that scourge, the *Peronospora*, does not seriously affect the tops, and cause the tubers to be small or to rot. Not only has it been proved that Potatoes will go on and do well for an indefinite period without change of soil, but we have it recorded by Mr. Cobbett that a barrister friend of his has grown Peas on the same border for over half a century, and states that if at any time the crop had been finer than of late, it must have been something extraordinary, as the haulm was as full of pods as any he had ever seen in England. We know that the cottager does not and cannot change his soil, but the barrister may have done so, and gone afar for fresh, or renewed it from time to time, as it is generally supposed that Peas soon tire of the same

land; but why they should do so, or be more exhaustive than Potatoes, that root and feed so greedily, as some of the strong-growing commoner kinds are prone to, only chemical analysis can tell us, for we must first know what minerals plants take out of the earth before we become aware or decide what it is necessary to put back previous to sowing or planting again. Scientists tell us—and there can be no doubt, I think, but there is much truth in what they state—that plants derive a good deal of their nourishment through the leaves from the air, and convey certain chemicals to the soil in which the roots are, where the mineral matter is held in Nature's larder for future use; and if it were not for this wise provision, a large portion of this part of the globe would ere now have been barren. For all this, we gardeners and most tillers of the soil believe greatly in muck or manure, and the stronger it is the better we like it. Would that we could get more of it, as most of us have such demands for everything, that we have to crop, crop, crop; and almost before one is off another is in, and so we go on year after year. Although the land is never idle, it does get change, and in and through that we manage to go on; but to pursue a regular rotation or system is, with most of us, out of the question. The beneficial effect, however, in face of the Potatoes and Peas, cannot be overrated, and I strongly advocate and advise the rotation of crops, or to give as much change to the land as can be managed, for what one kind of vegetable leaves another makes use of, and prepares the way for the next, and the ground is more free from insects. *J. Sheppard.*

TRAFALGAR PARK.—During an interesting stroll through the well-wooded grounds and pretty flower garden at Trafalgar Park, Salisbury, some weeks ago, I noticed that a narrow border having a row of tuberous-rooted Begonias in the centre, with a row of Golden Pyrethrum on either side, followed by two rows of blue Lobelia—one on each side next the grass verge—had a quiet, but, at the same time, a telling effect. It was also noticed that the silvery-leaved *Centaurea ragusina*, planted alongside of dark-foliaged plants in a border running parallel with the west front of the mansion, showed to great advantage. This plant for some reason is not met with so often as it deserves to be; it is of easy culture. Offsets inserted singly in small pots, will soon emit roots, and will form good plants by bedding-out time next year. The preparation of the pots should be as follows:—Place a few potsherds in the bottom, and cover with a bit of moss or a few half-rotted leaves, for drainage, and fill with three-parts of light loamy soil, one of sweet leaf-mould, with a surfacing of silver-sand; then place them in a cool pit, near the glass, in which a somewhat dry atmosphere is obtained. I may be permitted to remark that the flower garden at Trafalgar is opposite the west front of the house, and runs with a rapid descent towards the River Avon. It is geometrically laid out, and has an ornamental fountain in its centre. Owing to the very elevated position of Trafalgar House and grounds, grand views of local and distant scenery, comprising hill and dale, wood and water, are obtained therefrom. These extend on the south and south-west to Ringwood, Wimborne, and other towns of more or less importance in Hants and Dorset. The landscape on the west, which extends to the north, is a charming one, and embraces several miles of the Avon valley, with its rich water meadows and beautifully-wooded slopes, nestling amongst which are the village of Alderbury and Alderbury House, the residence of G. Fort, Esq. Westward thence, on the banks of the broad clear running Avon, are Longford Castle, with its towers and minarets, and the spire of Salisbury Cathedral, &c. *H. W. W.*

WINTER CUCUMBERS.—At one time these were thought a good deal of, and every effort and care used to be bestowed in the growing of them, and as few places had the proper convenience for their cultivation, gardeners had to give the closest attention, and exercise a good deal of skill to produce them. With the modern low and light houses with close-fitting lights, or fixed roofs, that are now so much in use, the matter is not so difficult, as the sun's rays are fully admitted, and with ample means of heating, Cucumbers are obtainable the whole year. The narrow span-house, running north and south, should be provided with a path down the middle, and a bed, 2 feet 6 inches in width, on each side, fitted with slate bottoms, resting on or just above the pipes, of which there should not be less than three, and to afford top-heat six others, two along close to each wall, and one on

either side of the pathway resting on the curb, as then a high and suitable temperature can be maintained without any trouble. To be successful, a start should be made with strong plants, which may either be raised from cuttings or seed, the first-mentioned being preferred by some, as they are considered to be the more fruitful. Another point that has to be taken into account is the variety grown, as much depends on that, for it does not follow that a Cucumber that is suitable for summer culture, and is a good free-cropper then, is equally adapted for winter. Many have been recommended for the latter purpose, and I think I have tried most or all of them, but as yet I have found none that is in any way equal to the old Lord Kenyon's, which not only has a hardy constitution, but it is a prolific bearer, the fruit tender, and about 10 inches long, and excellent flavour. A market gardener to whom I recommended it, told me that he would not be without it on any account, his customers not being satisfied with other varieties, and his fruits make good prices. Gardeners and others, then, who cultivate Cucumbers should, therefore, make a note of this, and try Lord Kenyon's in their next batch, and if they do I venture to predict it will be their chief favourite. In preparing the bed for the plants, a layer of rough material should be placed over the slates, and on that a thinly-cut turf, grass side downwards, and then a ridge laid along the middle of mixed soil, consisting chiefly of roughly-chopped fibry loam, and equal quantities of peat, if it can be easily obtained, or leaf-mould, as Cucumbers delight in such decaying vegetable matter. A fair distance to plant is from 3 feet to 4 feet apart, and the stems should be run up and tied under the trellis, so as to allow for any subsidence or settlement of the bed, and prevent root straining and hanging. As soon as the main shoots get near the top of the house they should be stopped, and all laterals treated the same, one joint above the fruits, and when the plants get thick a general thinning out will be necessary, so as to give room for fresh growth and foliage. This growth may be accelerated by top-dressing, but only a little of this should be put on at a time, and none should be added before the roots appear on the surface, and when it is needful to afford water, weak and tepid liquid manure may sometimes be applied, and no water should be applied that is not of the same temperature as the bed. The proper temperature to keep winter Cucumbers is from 65° to 70° by night, and from 10° to 15° higher by day, with plenty of atmospheric moisture, according to the state of the weather, syringing and damping the pipes and floor when there is a bright clear sky during early morn or eve, and refraining when conditions are the reverse. Air should be sparingly supplied, and only during sunshine. *J. Sheppard.*

OPENING OF KEW GARDENS.—Following up your remarks in last week's *Gardeners' Chronicle*, I would suggest that some of us who think with you, should ask for an opportunity to urge our views on the First Commissioner of Works. This seems all the more necessary, since I understand the First Commissioner is about to receive a deputation on the other side. Any of your readers who feel inclined to join me, will communicate with me, I will do my best to start the matter.—*M. Foster, Sec. R.S., Great Shelford, Cambridge, October 25, 1892.*

BIG ELM AT TRAFALGAR PARK.—In reply to Mr. Hurst's inquiry, the large Elm tree, stated in the *Gardeners' Chronicle* of the 15th inst. as standing close to the chapel and opposite to the kitchen garden as measuring 24 feet round at bottom, measures, at 7½ feet high, 20 feet 6 inches. A large Elm trunk is to be found on Havering Green, Romford, Essex, but it is much decayed. *G. F.*

A BRAVE OLD ELM.—It is only the Oak which so far seems to have found a place in the annals of song, but the Elm is one of the noblest trees that we have, considering that we so largely employ the latter for the making of coffins, and the former was once our chief material for the construction of ships, it is small matter for surprise that poets should have sung of the "brave old Oak," and have ignored the Elm. Not long since a paragraph ran through the press mentioning the destruction by fire in the Home Park, Hampton Court, of a very old Elm tree. Believing what was said to be true, I was very much surprised to see this veteran the other day certainly in some respect damaged, but still in wondrously robust health. The age of this remarkable tree must of necessity be speculative, but it may be anywhere from 500 to 1000 years. The bole is so

hollow, that within it forms an area of some 10 feet in diameter, and the existing structure is but a wall of bark, perhaps 10 inches thick. So far it is pretty solid, as there is no large hole through which it is possible to pass to the interior. There are perhaps larger hollow boles, but this one certainly is a remarkable one. The fire, which no doubt was in some way accidentally caused, scorched the inner wall of the shell, and materially burned the huge dead branch that still stands, also the leafage on the young growths of the head in the centre was destroyed, but that all round the margin remains green, and no doubt the other branches will break green again next year. Thus the veteran, a monument of vegetative dignity remains. How many of these wondrously large old veterans there are about the country, and the exact age and dimensions of which it would be interesting to learn. It is a pity they could not as long as possible be specially preserved, as are now ancient but human monuments. *A. D.*

HIPPEASTRUMS FOR GREENHOUSE CULTURE.

—Frequently as is the culture of this class of showy flowering bulbs discussed, rarely, if at all, is reference made as to their adaptability to greenhouse culture. As far as my observation extends, they are all classed as stove plants in trade catalogues. Certainly, I have not Messrs. Paul & Son's list to refer to; I cannot, therefore, include them in my remarks. Judging by what I saw at Messrs. Paul & Sons, High Beach Nursery, they treat these plants during the summer months on cooler methods, and if they have made successful advances under this system it would be well if they gave publicity to it. I refer to them because they are successful cultivators, and the raisers of some meritorious novelties in Hippeastrums. I need not say how desirable it is, from a trade point of view, the public should be better informed on such a subject. As there are certain species or varieties which will succeed and bloom well in the ordinary greenhouse, the names should be given under the heading of "Greenhouse Plants," to say the least. By this means something would be done to remove the popular impression that Hippeastrums (Amaryllids) are exclusively warm house exotics. It is to be regretted, moreover, that so little has been done to increase the hardier varieties, and that the efforts of hybridists have been exclusively devoted to the tenderer species. Forty years ago, when I had the care of the then best collection of Hippeastrums in this country, that owned by Messrs. Garraway & May, when H. Ackerman was the parent of nearly all the finest large-blooming varieties, which were then very popular, and to be counted by scores, the feeling was the same as it too generally is to-day. "They were exotics, and required stove heat to insure successful culture." A limited number of varieties have succeeded in the greenhouse, and to such I now refer, and hope others may be able to extend the list of these. These comprise Hippeastrum (Amaryllis) Johnsoni, H. Johnsoni hybrida, H. vittatum, and, no doubt, H. pardinum, of Peruvian origin. This being so, why may they not be made seed-bearing parents of a race of equally hardy varieties. As a matter of fact, too little care is taken of these varieties or species, as the case may be. As regards starting them to grow as early in the spring as possible, whereby the season's growth may be so advanced in the early summer as to insure each being well ripened before autumn and winter. A collateral consideration associated herewith is the judicious drying-off necessary in connection with the latter phase. This must not be done too hurriedly, though, on the arrival of bad weather, it cannot be maintained too strictly definite until the season for growth returns. *William Earley.* [Spencer, when gardener at Bowood, used to grow his Hippeastrums in frames in bottom-heat so as to get them matured at an early part of the year when he wanted them in bloom in the autumn and early winter. He was enabled by the employment of bottom-heat to get an early and a late bloom on the same plants within the year, of course, affording them a rest after each flowering period. *Ed.*]

ROSA INDICA SANGUINEA.—There are few small-growing Roses that can be successfully compared with the old Crimson China; its neat shining green leaves, and its small and very double crimson flowers, which are produced abundantly, give to it a distinctness which marks it of exceptional value either for growing in pots for the decoration of the conservatory, or for planting in beds and masses on lawns. Its habit of growth is dwarf, thereby giving to it an additional value as a suitable plant for an edging to

beds in which taller growing Roses are planted. No particular cultivation is required, for under ordinary treatment and in warm soil it will thrive and flower freely. Very little pruning is necessary, and this should be carried out at the end of the month of March by removing small and weak shoots from the centre of the plants, and shortening the stronger shoots by half their length. *H.*

CHRYSANthemum JOTTINGS.

THE PARKS.—The season during which our autumn favourite reigns supreme in the world of flowers is again upon us, and we heartily welcome the commendable shows that are to be seen in the parks, &c., of the London County Council. That their efforts are appreciated the authorities have continual testimony from the crowds of interested admirers that throng the houses set apart for their accommodation at all times when it is possible for general business people to indulge in a little recreation. Of course, it is upon Saturday afternoons and Sundays that the majority endeavour to satisfy their floricultural aspirations, and during these times, it is difficult to obtain such an acquaintance with the flowers that one would like. It is therefore advisable, if possible, to see them during any other part of the week, when the peculiarities of each variety can be noticed and admired. Generally, the plants this year are about ten days later than usual, but the collection at Finsbury Park is a decided exception to this. In the matter of grouping, very little advance has been made, and although, as at present arranged, these banks of bloom (as various as they are many) are exceedingly bright, still there is no rest for the eye, and not half the pleasure can be derived from such an arrangement as would result from the grouping of varieties according to colour. There should be sufficient of one colour together for the eye to rest upon, and then the various groups of colour so arranged that striking contrasts or pleasing harmonies could be obtained. Stereotyped banks are again the rule, but at Southwark Park—if the colours have not been studied as they should have been—the grouping of the plants shows more tasteful arrangement than does the collection at any other of the parks we visited.

FINSBURY PARK.

This fine park in the northern part of the metropolis, formerly under the management of the late Mr. Cochrane, has long been famed for its show of Chrysanthemums, and although Mr. Melville, from Dulwich Park, has not long succeeded to the management, the display this year again holds its own with any one of the others. As usual, the plants are accommodated in a large span-roofed house some 100 feet long, and about 18 to 20 feet wide. The plants form a centre group facing to each side, and the path extends all round immediately next the sides of the building. Here are a good number of incurved varieties, some of which are now carrying good blooms. The general forwardness of the collection as compared with others has already been remarked upon. Japanese forms are numerous. Altogether, there are some 3000 plants in at least 200 varieties. Many of these are very late sorts, and are not yet placed in the exhibition-house. The large Etoile de Lyon was here in very good form—if one excuses a little want of colour—some of the blooms are at least 12 inches across, and of a corresponding depth. Madame John Laing was also noticeable as a very pretty-coloured Japanese. Louis Bohmer had some fine buds, that promise well, but at present they are not expanded. Edouard Audiguier is still an attractive variety, the beautiful velvety appearance of the petals being very distinct. There are some good blooms of the rather loose-looking Sunflower, and Stanstead White was eliciting much admiration from the persons visiting the display. Amongst the incurved varieties deserving of notice were George Glenny and the Golden George Glenny, Lord Alcester, Prince of Wales, and M. R. Bahuant—this latter is a very fine bloom. Some pretty blooms of the yellow Mons. Charles Lebosqz would appeal strongly to lovers of

the Anemone group; and a new variety that has not yet made its reputation, called Delaware, has ray petals of a straw colour, whilst the florets are of primrose-yellow. At present its appearance is rather flat, but it may yet turn out a good thing. The show has already been opened three weeks, and it may be expected to be at its very best in about a week. The park is not far from the station of the same name, but a tram can be taken from the station to the upper gates, close to which is the house where the display is exhibited.

BATTERSEA PARK.

Take train to Battersea Park station on the London and Brighton railway, and a short walk will bring you to the large span-roofed house in the reserve garden, that has been set apart for the accommodation of the Chrysanthemums. The plants are arranged in a single bank along the house, which is about 12 feet wide, and over 100 feet long. There are something like 2000 plants in about 250 varieties, but at present only a very small proportion of them are in bloom; indeed, the collection will not be at its best until another fortnight. The general appearance of the show is good, and the foliage and blooms are fresh and promising, bearing testimony to the care that has been given to them by those who have been responsible for their culture. Some remarkably good blooms of Avalanche cannot fail to elicit praise from all, especially those that favour the florists' flowers, for in this variety the petals are placed naturally so evenly, that its general appearance is almost as formal as a Camellia. Eynsford White, a good white flower of slightly more loose habit, was also in very good form at this place. The new sport from the White Madame Lecroix, named Mr. C. E. Shea, was in bloom, but not specially good; its colour is yellow, and it is quite possible that another year it may prove to be a good thing. Florence Davis, the new Japanese, will be certain to take with many people, on account of its peculiar appearance. The flower is very ooze, and is quite green until fully expanded, when it becomes white. Many new varieties seem to be got together at Battersea, and some good promising buds were to be seen, on Mr. J. S. Dibben, a variety which is also but little known. Another new one called Mr. A. H. Neve, is a pink Japanese, but the blooms here were not yet developed, and it was impossible to judge of its merits. William Tricker, on the other hand, had some fine blooms, of a rosy-pink colour, shaded with white, and the habit is dwarf and very good. The number of visitors to Battersea is enormous, and it will be worth while to any interested in these exhibitions to make an excursion into this thickly populated district and compare it with the other displays elsewhere.

SOUTHWARK PARK.

This park is classed as of third-rate importance, but the show of Chrysanthemums to be seen here this year cannot in any sense be described as a third-rate exhibition, indeed, a very fine collection has been exhibited to the public, and one cannot but regret that the authorities have not more accommodation in which they might show the result of their time and attention to better advantage. However, the very best has been made of the available means, and if any who have been to the other parks and seen the general similarity in the arrangement of the plants deign to visit Southwark, they are sure to be pleased with the effect produced here. Perhaps in some of the other places there is not the same incentive to less common grouping, for here the house that is available is something like 25 feet wide, and this admits of centre and side groupings. The groups on the sides are wavy and artistic, while the plants in the centre are grouped into two pyramids, one at either end, gradually falling to its lowest point in the centre of the house. The house, however, is altogether unable to meet the requirements of the case, and a tent has been erected, where the remainder of the plants have been accommodated—if one can use such a term, for the

dark position that they have to occupy here is the reverse of accommodation, and good blooms are not looked for from these. However, for the present, and until the late varieties commence to bloom, the effect, perhaps, is heightened by the addition of this tent, which has been erected and furnished in form something like a corridor, and opens out into the house in which the other, and more fortunate, plants are blooming. The whole collection is very late, and will not be at its best until nearly three weeks. A few days ago there were good blooms of Madame Lecroix, Louis Bœhmer, Oriental, Prince of Wales, and the delightfully pretty Pompon Mdle. Elise Dordan. There are about 3000 plants, and include a wonderful variety, the general excellence of which reflect high credit upon Mr. Bailey and his grower. Next year we hope to congratulate Mr. Bailey upon the better accommodation that is now promised. Southwark Park is close to the Deptford Road Station of the East London Railway, and is situated in the midst of a teeming population, to which such a sight as a Chrysanthemum show must be delightfully refreshing.

THE INNER TEMPLE.

Again the benchers of the Inner Temple have opened their annual display of Chrysanthemums gratuitously to the public. This was the very first of its kind that was opened in the metropolis, and the exhibitions that are now so much appreciated in various parts of this great and populated area are, no doubt, due, in some measure, to the initiative taken by the authorities at the Temple. During the last two years better accommodation has been provided, and the plants are now, as they were last year, grouped together in two small lean-to houses, which are fairly well adapted to such a purpose. The best of the blooms to be seen a few days ago were M. R. Bahuant, William Holmes, Bismarck, Ulrich Brunner, and Comte de Germiny. This is the most central of any of these displays, but like most "forerunners" it has been the means of promoting such zeal as has resulted in exhibitions now greatly superior to the original one.

(To be continued.)

THE ROSERY.

OUR OLD-FASHIONED ROSES.

At the great exhibition at Wolverhampton in July last, on the third day, special prizes were offered for twenty-four distinct varieties of garden decorative Roses, to be shown in bunches; and for twelve varieties also, and some excellent exhibits were staged, especially by Messrs. Cooling & Sons, Bath, and Mr. Coombs, gr. to the Earl of Dudley, at Himley. I regarded these exhibits with intense interest, recalling so forcibly the memories of half a century since, when the old Rose du Roi (The Crimson Perpetual), was almost our only autumnal Rose of any merit, and this Rose we almost always had in bloom out-of-doors in December on the south coast. Not only were these exhibits at Wolverhampton regarded by me with interest, for ladies seemed especially to appreciate them and freely make notes, for these old kinds staged in nice clusters were a revelation of the past to a great many. The old H. C. Fulgens, Noisette Lamarque, N. Jaune Desprez, Aimée Vibert—still unbeaten in its class, some of the old Ayrshires and Sempervirens, and others were to be seen.

My object in penning these few lines is to ask societies where Roses are encouraged to bring into more prominence exhibits of our old-fashioned Roses in bunches, and as an old hand in floriculture with getting on for sixty years' experience, I should greatly like again to see some blooms of the old Rose du Roi. I well remember the introduction of our earliest H.P.'s, and when Madame Laffay first bloomed, the interest this fine old variety created. I well remember the great old pioneers of Rose culture, Adam Paul of Cheshunt, William Wood of Mansfield, Thomas Rivers of Sawbridgeworth, and Lane of Berkhamstead, and Mr. Wood was a wonderful raconteur of what Othello called "hair-breadth

"escapes," during his travels in the secret service of those days. One had only to listen, no need to talk, for he possessed a great fund of anecdotes and adventures. The Rose work of the fathers descended to worthy sons, and the late Mr. George Paul and Mr. William Paul, the latter happily still spared to us, continued the good work, the latter by his most valuable little treatise on Rose culture, published so many years since. Mr. Charles Wood succeeded his father, and so at Sawbridgeworth and Berkhamstead the work has been kept going by the sons. May it long continue so, at the original home of the Roses, and at Waltham and Cheshunt especially, our old affectionately remembered Roses can be seen in the summer months; but it is at our provincial exhibitions especially, I should like to see them again. My memory goes back to the days when the hybrid Chinas and hybrid Bourbons were the rage, grand old Brennus, Blairi No. 2, Fulgens, Beauty of Billiard, Coupe de Hébé—grand old Rose, Chénédolle, Paul Ricaut and others, were such a phalanx of beauty. Ah! many are now almost forgotten and things of the past, as so many of their cultivators in those days are also. D.

CLASSIFICATION OF ROSES.

This is a subject upon which many different opinions exist, and one which is very puzzling to the majority of growers. Some simple method of classifying Roses is wanted, and this must be something by which the different sections or classes can be readily distinguished. At present I do not see how it is at all possible for one to say whether some Roses are a Tea-scented, Noisette, or a hybrid Tea, and in some few cases it would seem to possess equal claims to the hybrid perpetual section.

Several new Roses that were exhibited this season come under the head of these doubtful ones. We find the majority of catalogues giving the following classes, viz., hybrid perpetuals, Tea-scented, Noisettes, Chinas, and Bourbons. While others go further, and divide them into hybrid Teas, hybrid Chinas, and hybrid Bourbons, to say nothing of additional small classes like the Polyantha, Boursault, Banksian, Scotch, Macartney, Moss, Provence, and others. All of these sections are doubtless correct, and are probably simple enough to some. But that they are not so to the majority, and that there is even much confusion among our largest growers, is fully borne out by a casual glance at their various published catalogues. Take Messrs. Paul & Son, B. R. Cant, F. Cant, G. Prince, Keynes & Co., Cranston & Co., with many others of our most prominent growers, and you will find them at variance about some of our best-known Roses. We can scarcely wonder, therefore, if the average amateur forms the opinion that the thing is overdone, or at any rate very much mixed up. I will endeavour to give a few examples of my meaning. Viscountess Folkestone was sent out by Mr. Bennett as being a hybrid Tea; but before I go any further into the subject, I will explain that there is confusion as to what constitutes a hybrid Tea Rose. Some class Cheshunt Hybrid among the hybrid Teas, because it is the result of a cross between Madame de Tartas (Tea) and Prince Camille de Rohan (hybrid perpetual). Lady Mary Fitzwilliam may be named as another well-known Rose, that is almost always classed as a hybrid Tea. This grand variety resulted from crossing Devonians (Tea) with Victor Verdier (hybrid perpetual). Now, to my mind, these are not true hybrid Teas, such being a cross between two varieties of Tea Roses. Kaiserin Friedrich is my idea of a hybrid Tea. This was a cross between Gloire de Dijon and Perle des Jardins. Returning to Viscountess Folkestone, we find that Mr. B. R. Cant calls it a hybrid perpetual, while Mr. F. Cant places it among them, but initials it as a hybrid Tea. Among the best growers in the country we have this Rose classed as a Tea, a hybrid perpetual, and as a hybrid Tea. Which is correct?

The National Rose Society have decided that these so-called hybrid Teas are to be exhibited among the hybrid perpetuals, and this has doubtless

induced many to class them as such. Mr. F. Cant's plan of placing them among the hybrid perpetuals, and initialing them as hybrid Teas, is a good idea, as far as a catalogue is concerned, but it does not get rid of the difficulty. La France is recognised as a Hybrid Perpetual; then why is Augustine Guinoisseau called a hybrid Tea? Yet it is so in many catalogues that one would naturally look upon as authorities upon Roses, notwithstanding this variety was simply a sport from La France, and in no way a hybrid between this and any other Rose.

Turning to the Tea-scented and Noisette Roses, we still find a considerable amount of confusion. My impression has always been that a Noisette Rose had the very distinctive character of blooming in trusses; take Aimée Vibert and William Allen Richardson for examples. But then, do not Madame de Watteville, Madame Casin, Madame de Tartas and others, bloom in trusses? We have both dwarf and extra strong growers among the Teas proper, and among the Noisettes; we also find Maréchal Niel as often classed among one as the other. How, then, is one to distinguish a Noisette from a Tea-scented Rose? Both have the same characteristics in growth, floriferousness, and scent. Where, too, lies the difference between some of the Polyantha Roses and the smaller of the Noisettes? But I will not go deeper into the matter, or my paper will become confusing in itself. One should not find fault with existing arrangements unless they see a way to improve them. Now, I would suggest that all of the Tea-scented and Noisette Roses be classed together, and that the true hybrid Teas (i.e., those crossed between two Teas or Noisettes) be placed with them. Then I would put the classes known as hybrid perpetuals, the so-called hybrid Teas, hybrid Bourbons, hybrid Chinas, &c., into one common class, and designate them "Hybrids of Roses." At present it is somewhat difficult to find a Rose in a large catalogue, unless one knows to what section it belongs; even then, as I have already shown, there is no knowing which class it may be in.

I should very much like to see the National Rose Society take this matter up, or else publish some guide to the classification of Roses. Surely the queen of flowers should not be left in this unsatisfactory state, so that one does not know which of three classes a Rose belongs to. A. Piper, Uckfield.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

OCTOBER 18.—Present:—Dr. M. T. Masters, in the chair; Mr. Morris, Mr. Blandford, Professor Church, Dr. Scott, Rev. W. Wilks, Dr. Müller, Dr. Russell, Rev. G. Henslow, Hon. Sec.; and Mr. J. Carruthers, visitor.

Bouillie bordelaise.—A communication was received by Mr. Blandford from Mr. E. D. Till, The Priory, Eynsford, Kent, stating that of twenty-six experiments in gardens, fields, and allotments, on different sorts of Potatoes this season, they were all completely successful. The mixture used consisted of 1 lb. of copper sulphate, 1 lb. of freshly-slaked lime, 1 lb. of syrup, and 5 gallons of water. The following are some of the more striking results selected from Mr. Till's report:—"Early Puritar, once, twice, and thrice syringed respectively—all were good, the haulm being green four weeks after the others had decayed. When not syringed, 25 per cent. were bad. Wilford Park, considered a good disease-resister; of seven rows not syringed, 5 per cent. only were bad. Of a row twice syringed all were good, cleaner, and of a more regular size than the others. Of Sutton's Abundance, 20 to 25 per cent.; Victory, 20 per cent.; and Chancellor, 3 per cent. were bad when not syringed. Reading Giant, when twice syringed, were all good, with more than a fourth excess of crop; all being cleaner and of a more regular size than in the rest of the field, where it gave an average crop. The haulm was green to September 25, six weeks after the others had decayed. Of seven varieties grown on allotments, of Snowdrop twice

syringed, all were good; once syringed, eight tubers, bad; not syringed, sixteen bad. Of Early Puritan, twice syringed, twenty-five tubers bad; about sixty being bad on two adjacent rows not syringed. In a garden, Beauty of Hebron, once syringed, all were good and very clean; while of two rows not syringed, 30 per cent. were bad." Mr. Till concludes his report with the following general remarks:—"The leaves were very thoroughly syringed on both surfaces, and at a date (July 1, 15, or 20 to 23) when growth had nearly attained its full development. The quantity applied at the rate of about 350 gallons per acre. The most striking results were on the early sorts. The later sorts were freer from the disease. The Reading Giant plot showed a largely increased quantity in comparison with the adjoining rows, while the superior size, regularity, and quality were very marked. Also the Ware, or selling sizes, were very much more regular. This was no doubt due to the haulm being kept in vigour for five to six weeks after the rest of the haulm in the field had withered. There is no mistake about the great advantage of the solution when applied to this variety; improved growth was not so marked in other sorts, though certainly very noticeable generally." Professor Church remarked that the use of the syrup was to make the hydrated oxide of copper more adhesive to the leaves, and he observed that dextrine had been used in conjunction with sulphuretted mixtures for Roses and Chrysanthemums; but the special value of sugar was, that it entered into combination with the lime, and was subsequently set free, retaining all its adhesive properties. Mr. Blandford added that the use of sugar had been adopted as the best result from a large series of experiments carried out in France.

Docks Attacked by Grubs.—Dr. Masters received a communication from Perthshire, together with specimens of grubs which had attacked some Docks. As *Rhubarb* was about to be placed on the same ground, being of the same family (*Polygonaceæ*), it was thought the latter might be attacked also. It proved to be the Ghost Swift, *Hepialus humuli*; but, as Mr. Blandford observed, this insect is so very generally distributed that no remedy could be suggested other than the destroying the plants with the grubs as much as possible.

Walnuts Imperfect.—Mr. Noble sent specimens of Walnuts, in which the shell was imperfectly developed in certain places, though the kernels appeared to be sound. It was suggested that the cause might be defective root-action from a clay soil, or perhaps the sharp frost in June, when they were very young.

Fog Report.—Some discussion arose as to the desirability of recommencing observations on the injuries to plants by fog during the coming winter, and pursuing them in a systematic way. It is proposed, therefore, to reconsider the programme drawn up in 1891 at the next meeting of the Scientific Committee, especially in its bearings on the best practical methods of resisting the injuries of fogs in the construction or adaptation of plant-houses or otherwise.

Peat-wood.—Dr. Russell showed some specimens of wood from a peat bed of a few feet in thickness on Dartmoor, in Devonshire, where there are no trees at the present time. One was that of Birch, but the other was not recognisable on inspection. It was referred to Kew for comparison with some museum specimens.

Fasciated Holly.—Mr. G. Paul sent boughs of *Ilex Donningtonensis* with this peculiarity. It appears to be a variety particularly liable to fasciation. The cause of fasciation is still unknown among trees. It is particularly common in the Ash and Cotoneaster.

***Canonia capensis*.**—Flowering sprays of this shrub were sent by Mr. Burbidge. He observes that it is an old plant, but not often to be seen in gardens at the present time.

Pelargonium Sport—A new double variety was received from Mr. Cannell called Double New Life, having the peculiarity of the petals being white, red, and flaked in the same blossom. It originated from a double *Vesuvius* called Wonderful. A flaked variety of the single *Vesuvius* appeared in the Isle of Wight in 1888. It has also sported to a salmon colour, as well as white, several times. The leaves are peculiar, in having acquired almost a purple tint. The original *Vesuvius* was raised by Messrs. A. and F. Smith, of Dulwich, in 1868.

Egyptian Figs.—Mr. Henslow exhibited an instrument used in Egypt for cutting off the tops of the nearly ripe fruit of the Sycamore Fig. It consists of a circular strip of iron, one edge being sharpened, and inserted like a loop at the end of a stick. The

object is to allow the insects to escape (*Sycophaga crassipes*, Westw.), which always infest that species. The Sycamore is never propagated by seeds in Egypt. The custom is apparently very ancient, and the Hebrew word translated "cultivator" as applied to the prophet Amos (ch. vii., 14) really signifies "scraper," as correctly given in the Septuagint version (written at Alexandria). It is described by Theophrastus and Pliny, but no mention is made of the insects. As the fruit becomes sweeter, it was thought to ripen them.

NATIONAL CHRYSANTHEMUM.

OCTOBER 24.—A largely-attended meeting of the General Committee of the above took place on this date at Anderson's Hotel, Fleet Street, E.C., at 7 P.M., R. Ballantine, Esq., in the chair. Some correspondence was read between the Rev. J. Bird, the President of the Loughborough Chrysanthemum and Fruit Society, as to an application for affiliation, Mr. Bird affirming that it was sent in by a person no longer officially connected with the Society, and that the application was made on behalf of a bogus Society to mislead the Committee. It appeared the affiliation fee had been paid by the applicant, and the usual documents and passes sent to him. It was resolved that the Secretary be instructed to return the amount of the affiliation fee to the sender; and that the Loughborough Society be affiliated if the committee so desire it. Resolutions were passed: 1. To the Dowager Duchess of Sutherland, expressing the great regret of the President and committee at the loss of one of their Vice-Presidents—the late Duke of Sutherland; and presenting to the Dowager Duchess the expression of their sympathy and condolence. 2. To the present Duke of Sutherland to the same effect, and expressing the hope Her Grace's name might still be retained among the list of Vice-Presidents. On the recommendation of the Floral Committee, the Secretary was instructed to forward to Mr. John Earland, Wellington, New Zealand, the Silver-gilt Medal of the Society, in recognition of his enterprise in sending the frozen blooms of Chrysanthemums to this country. A proposition that Silver and Bronze Medals be placed at the disposal of the Floral Committee, with a view of encouraging the production of groups and collections of plants and flowers at the meetings of the Floral Committee, was referred to the schedule sub-committee. Also the resolution in favour of the enlargement of show boards for Japanese blooms, passed at the recent Conference. The following were appointed a schedule sub-committee for the revision of the schedule for 1893, Messrs. Addison, Bevan, Boyce, Crane, Davis, Gordon, Gibson, Fowler, Jones, Stevens, Wynne, and the officers of the Society. Resolutions were passed that the members of the Floral Committee be invited to the judges' luncheon on November 8; that the annual dinner take place at the end of October or early in November, and a smoking concert in January. The Secretary reported that the President, Sir Edwin, accompanied by Lady Saunders, would attend at the Royal Aquarium on November 8, and take part in an opening ceremonial. The Chairman called attention to a paragraph which appeared in the last issue of the *Journal of Horticulture*, containing what the paragraph termed a "serious allegation" against a member of the Floral Committee, which he thought ought to engage the attention of the committee. After some discussion, the officers of the Society were requested to form a sub-committee to investigate the charges, and take such steps in relation thereto as they might think desirable. Seventeen new members were elected, including one Fellow. The Chairman was heartily thanked at the close of a long sitting.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

KINDLY inform me what artificial manures I can use now to top-dress a bed of Noble Strawberry, which I wish to be very early, and to have large individual berries. The bed is on a sheltered, sunny slope, and can be watered. It got a large dressing of bone-meal and sulphate of potash before planting last April, but no farmyard manure. The plants are 1 foot apart in the rows, and 2 feet between each row. Is there any danger of watering and manuring now at all hindering the earliness? *New Subscriber.*

MARKETS.

COVENT GARDEN, October 27.

MARKET very dull. Prices unaltered. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	15 0-30 0	— per 100	5 0-8 0
— specimen, each	7 6-21 0	Ficus elastica, each	1 8-7 6
Asters, per doz.	6 0-12 0	Heliotrope, per doz.	3 0-6 0
Begonia, per doz.	6 0-12 0	Marguerite, per doz.	6 0-12 0
Chrysanthemums, p.		Mignonette, doz. pots	6 0-12 0
— doz.	4 0-12 0	Palms, various, each	2 0-10 0
— large plants, ea.	1 6-2 6	— specimens, each	10 6-84 0
Cyperus, per dozen	4 0-10 0	Pelargoniums, scar-	
Dracena, each	1 0-5 0	— let. p. doz.	4 0-6 0
Erica, various, per		Solanums, per doz.	9 0-12 0
dozen	9 0-18 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, p. half-sieve	0-3 6	Melons, each	0 6-1 3
Cobs	100 0-105 0	Peaches, per doz.	2 0-6 0
Grapes, per lb.	0 6-1 6	Pine-apples, St. Mi-	
Lemons, per case	15 0-35 0	— chael	4 0-6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	4 0-8 0	Mignonette, 12 bun.	3 0-6 0
Asters, p. doz. bun.	6 0-9 0	Pelargonium, scar-	
Carnations, 12 blms.	1 0-3 0	— let. per 12 bun.	4 0-6 0
Chrysanthemums, p.		— 12 sprays	0 6-1 0
— doz. blooms	1 0-6 0	Primula, double	0 6-0 9
— p. doz. bunches	4 0-10 0	Pyrethrum	2 0-4 0
Eucharis, per dozen	4 0-6 0	Roses, Tea, per dozen	1 0-2 0
Gardenia, per dozen	1 6-3 0	— coloured, dozen	1 6-3 0
Heliotrope, per doz.		— yellow (Maré-	
— sprays	0 6-0 9	— chals, per doz.	2 0-5 0
Lilac, white French,		— red, per dozen	1 0-2 0
— per bunch	4 6-6 0	Stephanotis, 12 sprays	4 0-6 0
Lilium Harrisii, doz.	6 0-12 0	Tuberose, 12 blms.	0 4-0 9
— various, do.	2 0-4 0	Violets, Parme French	
Maiden Hair Fern,		— per bunch	4 0-5 0
— 12 bunches	4 0-6 0	— Czar, French,	
Marguerite, per doz.		— per bunch	1 6-2 6
— bunches	3 0-4 0	— small French,	
Orchids:—		— p. doz. bunches	2 0-2 6
Cattleya, 12 blms.	6 0-12 0	— small English,	
Odontoglossum		— p. doz. bunches	2 0-3 0
— crispum, 12 blms.	2 0-6 0		

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes Globe, ea.	0 4-0 6	Mushrooms, punnet	2 0-
Beans, French, lb.	2 6-3 0	Mustard and Cress,	
Beet, red, per dozen	2 0-3 0	— punnet	0 4-...
Carrots, per bunch	0 4-0 6	Parsley per bunch	0 3-0 6
Cauliflowers, each	0 3-0 6	Shallots, per lb.	0 6-...
Cucumbers, each	0 4-0 8	Spinach, per bushel	3 6-...
Endive, per dozen	2 0-3 0	Tomatos, per lb.	0 4-0 9
Herbs, per bunch	0 9-1 0	Turnips, per bunch	0 4-0 6
Lettuces, per doz.	1 6-2 0		

POTATOS.

Markets firm. Best samples, 75s. to 85s.; do., dark soil, 50s. to 55s. Stocks on hand slightly increased. *J. B. Thomas.*

SEEDS.

LONDON: Oct. 26.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report a scanty attendance on to-day's market. Clover seeds have this week assumed a more quiet aspect. As regards Winter Vetches, the demand has during the last few days, much improved, and the supplies being exhausted, full prices are realised. The new Königsberg Tares being cheap, and good, attract attention. Haricots and Peas are steady with an improving tendency. For both white and brown Mustard seed there is a strong inquiry at advancing rates. Canary seed is firm, but without much movement of stocks. Hempseed is getting dearer. Linseed, Buckwheat, Barley, and Millet realise full prices. Rape-seed keeps very cheap.

FRUITS AND VEGETABLES.

SPITALFIELDS: Oct. 25.—Quotations:—Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; Spinach, 1s. 6d. to 2s. per bushel; Savoy, 2s. 6d. to 4s. 6d.; Cabbages, 4s. to 6s.; Collards, 2s. 6d. to 4s.; Cauliflowers, 3s. to 7s. per tally; Sea-kale, 8d. to 1s. per punnet; Greens, 1s. 3d. to 1s. 9d.; Turnips, 1s. 6d. to 2s. 3d.; Carrots, 1s. 6d. to 2s. 6d.; Onions, 2s. 9d. to 3s. 6d.; Parsley, 1s. 6d. to 2s. per dozen bunches; Horseradish, 1s. to 1s. 2d.; Celery, 6d. to 1s. per bundle; Cucumbers, frame, 2s. 6d. to 3s.; Leeks, 2s. 6d. to 3s.; Cabbage Lettuce, 4d. to 8d. per dozen; Cos Lettuce, 6d. to 1s. per score; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; English Onions, 5s. 6d. to 6s. per cwt.; Belgian and Dutch Onions, 5s. to 5s. 6d. per bag of 110 lb.; Spanish do., 6s. 6d. to 7s. per case; Carrots, 40s. to 50s. per ton; Apples, English, 2s. 6d. to 5s. 6d. per bushel; American do., 9s. to 10s. per barrel; Quinces, 2s. to 2s. 3d.; Tomatos, foreign 1s. to 1s. 6d. per box; Peas, 3s. to 4s. per half-sieve.

BOROUGH: Oct. 25.—Quotations:—Cabbages, 3s. to 4s. Marrows, 3s. 6d. to 4s. per tally; Cauliflowers, 1s. to 1s. 9d. per dozen; Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; Lettuces, 6d. to 1s. per score; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 1s. 6d. per dozen bunches; English Onions, 4s. 6d. to 6s. per cwt.; Horseradish, 2s. to 2s. 3d.; foreign do., 1s. 6d. per bundle; English Apples, 2s. 6d. to 10s. per bushel.

FARRINGTON: Oct. 27.—Quotations:—Apples, 3s. 6d. to 4s. 6d.; Marie Louise Pears, 4s. 6d. to 5s. 6d. per bushel; Onions, Spanish, 6s. 6d. per case; English do., 130s. per ton; Parsnips, 3s. 6d. per bag; Turnips, 2s. 6d. to 3s.; Celery, 12s. per dozen rolls; Cauliflowers, 5s. to 6s. per tally; Carrots, bag, 55s. to 60s. per ton.

POTATOS.

SPITALFIELDS: Oct. 25.—Quotations:—Main Crop, 60s. to 70s.; Snowdrops, 60s. to 70s.; Reading Wonder, 60s. to 65s.; Sutton's Abundance, 60s. to 65s.; Imperators, 50s. to 60s.; Magnums, 45s. to 60s.; Hebrons, 50s. to 65s. per ton.

BOROUGH: Oct. 25.—Quotations:—English Magnums, 40s. to 60s.; Hebrons, 40s. to 60s.; Snowdrops, 50s. to 65s. per ton.

FARRINGTON: Oct. 27.—Red Beauties, 65s. to 70s. per ton; white do., 65s. to 70s.; Magnums, 60s. to 65s.; Imperators, 55s. to 60s. per ton.

GENERAL AVERAGES: Oct. 26.—Hebrons, 40s. to 75s.; Magnums, 40s. to 70s.; Snowdrops, 50s. to 70s.; Imperators, 50s. to 60s. per ton.

HAY.

Averages.—The following are the averages of the prices at the metropolitan markets during the past week:—Clover, prime, 80s. to 115s.; do., inferior, 46s. to 75s.; Hay, best, 60s. to 110s.; do., inferior, 26s. to 50s.; and Straw, 26s. to 41s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					10ths Inch.	Ins.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.
	Above (+) or below (−) the Mean for the week ending October 22.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 3, 1892.	Below 42°, difference from Mean since Jan. 3, 1892.				
0	6	6	29	123	+ 238	6	208	39.3	24
1	5	11	28	321	+ 265	2	184	23.3	23
2	6	11	19	204	+ 195	6	160	22.4	31
3	5	24	13	182	+ 208	1	148	23.3	33
4	6	16	29	171	+ 263	4	143	19.6	39
5	6	30	14	146	+ 141	5	126	18.0	43
6	6	15	27	222	+ 214	7	182	36.0	42
7	5	19	19	155	+ 170	2	166	31.0	37
8	7	30	17	122	+ 129	5	150	23.7	55
9	5	21	13	181	+ 135	4	181	30.2	35
10	7	28	17	116	+ 149	8	155	29.7	52
* 5	39	0	+ 17	+ 42	5	148	21.9	44	48

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.

Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending October 22, is furnished from the Meteorological Office:—

"The weather, though still rather showery and unsettled, was much brighter over the Kingdom generally than for some weeks past; in the north-eastern parts of the country, however, considerable falls of rain, hail, or snow, were experienced.

"The temperature was much below the mean, the deficit ranging from 5° to 7°. The highest of the maxima, which were recorded on very irregular dates, varied from 57° in 'England, S.W.,' and 55° in the 'Midland Counties,' 'England, S.,' and the 'Channel Islands,' to 51° in 'Scotland, N.' and 'England, N.E.' On some days the thermometer scarcely rose above 40° in the north, and did not reach 50° even in the south. The absolute minima were registered as a rule, during the middle part of the week, and were unusually low for the time of year. In 'England, S.W.' (at Llandovery) the sheltered thermometer fell to 20°, and in nearly all other districts to between 24° and 30°; in 'England, E.,' however, the lowest reading was 31°, and in the Channel Islands, 38°.

"The rainfall considerably exceeded the mean in 'England, N.E.,' and slightly in 'England, E.,' in

all other districts there was a deficit; the fall over the southern parts of Ireland and England being especially slight.

"The bright sunshine was fairly prevalent, and exceeded the mean in almost all districts; the percentage of the possible duration ranged from 23 in 'Scotland, E.,' and 24 in 'Scotland, N.,' to between 34 and 44 in most other districts; while in 'Ireland, S.,' the percentage was 52, and in 'England, S.W.,' 55."

NOTICES TO CORRESPONDENTS.

* * PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

ASPARAGUS FORCING: *Young Gardener*. To obtain good results, lift the roots as soon as the growths are quite ripe; do this carefully, and lay them in fairly dry soil under cover for one week. Have ready a pit or frame, which has been filled with the fallen leaves of Oak or Beech, and which have been heated and turned over once or twice; and when the heat is at 80°, and declining, tread the surface level, and let it not be more than 1 foot from the glass. Then place a layer 4 inches thick of warmed leaf-mould over the leaves, pack the Asparagus roots close together—say forty to fifty in a batch—and cover and fill in tightly around them with leaf-mould; afford a thorough watering with water at 85° to 90°; put on the lights, but leaving a half-inch opening under each. The top-heat must not exceed 50°, either day or night, till the roots start, when the range may be 55° by night, and 60° to 65° by day. This must be regulated by means of hot-water pipes or dangle-linings, if it be a frame or unheated brick pit. Cover the frames at night, and do not let the soil get dry. Keep a plunging thermometer or test-stick in the bed, and if the warmth rise above 80°, as it may do if the leaves were wet when put together, or the weather is mild, probe the bed where the most heat is found; this will let it out. When the shoots are up above-ground, air must be given daily, when weather permits, and all the light possible; therefore keep the glass very clean. Attention to these two points will secure good-flavoured "grass." Asparagus for soups only may be driven with a bottom-heat of 90°.

BOOKS: *Mushroom*. *Mushrooms for the Million*, by John Wright (published at 171, Fleet Street, E.C.).—*W. G. The Live Stock of the Farm*, by J. C. Morton (Bradbury, Agnew, & Co., 9, Bouverie Street, London, E.C.).—*HONDURAS: F. G.* There is no separate flora of the country, but you should procure Mr. Morris' little work on *British Honduras*.

CATASETUM: *J. B. Stone*. Send the whole inflorescence, the flower sent not being sufficient for identification.

COPPER SPRAY FOR MILDEW: *A.* asks, is spraying with copper likely to be injurious to the consumer? To which, on the authority of Dr. Pammel, in *Bulletin No. 17*, Iowa, Agricultural Station, we answer—yes, there would be danger if the consumer ate more than from 300 lb. of Grapes a day!

DRY ROT: *A. P.* A fungus, *Merulius lachrymans*. You will do better to remove the boards and burn them. Creasote, corrosive sublimate, carbolic acid, copper sulphate in the form of spray, might any of them be useful.

INSECTS: *A. P.* *Abies Nordmanniana* smothered with the Coccus which is so injurious to the tree. We fear that no remedy short of destruction by fire is likely to be of any service. Petroleum emulsion might answer if the tree is a small one.

MIXTURE TO KILL GARDEN PEST: *Ajax*. Don't, if you wish to keep out of the law courts.

MOISTURE ON THE WINDOW PANES OF FLORIST'S SHOP: *Gaucha*. Arrange some kind of outlet for the air of the shop near the ceiling, and an inlet near the ground level, and if a small stove or hot-water apparatus could be made use of, the steamy appearance would be avoided.

NAMES OF FRUITS: *Hartsdown*. 1, Cellini; 2, Cathead; 3, New Hawthornden; 4, Beauty of Kent; 5, not recognised.—*Ridley*. 1, Grenadier; 2,

Nonsuch; 3, Sops in Wine.—*North Devon*. 1, Cockle's Pippin; 2, Blenheim Orange; 3, Grenadier; 4, Carlisle Codlin; 5, Lane's Prince Albert; 6, not recognised.—*A. Bagg*. White Doyenné.—*W. A. Emperor Alexander*. *T. J. & Sons*. Rymer.—*D. McDonald*. 1, New Northern Greening; 2, Scarlet Nonpareil; 3, not known.—*C. W. E.* 1, Keswick Codlin; 2, Lord Suffield; 3, Cox's Orange Pippin; 4, Mère de Ménage; 5, King of the Pippins; 6, Marie Louise (Pear);—*Rob Roy*. 1, not recognised; 2, Royal Somerset; 3, Scorpion; 4, not recognised; 5, New Hawthornden; 6, Cox's Orange Pippin; 7, Warner's King; 8, Egg or White Paradise; 9 and 11, Minchall Crab; 10, not recognised.

NAMES OF PLANTS: *J. W.* *Ficus edulis* (Cooperi), native of New Caledonia.—*P. & Sons*. *Ficus* sps. You might kindly send a plant to Kew for comparison.—*A. B.* 1, *Alonsoa incisifolia*; 2, *Leycesteria formosa*.—*Harris*. 1, *Davallia tenuifolia*; 2, *Adiantum concinnatum latum*; 3, *Nephrolepis Duffii*; 5, *Selaginella viticulosa*; 6, *Cissus antarctica*.—*W. B.* 1, *Cypripedium Ashburtonianum* ×; 2, *C. Harrisianum*.—*Jim*. 1, *Gesnera macrantha*; 2, *Dracæna pulcherrima*; 3, send better specimen with flowers; 4, *Fittonia Pearcei*.—*E. D. L.* 1, *Asparagus decumbens*; 2, *Sedum carneum variegatum*; 3, *Bambusa Fortunei variegata*; 4, *Pachyphyton bracteosum*; 5, *Davallia filijense*; 6, *Gymnogramma tartarea*.—*V.* 1, *Helianthus rigidus*; 2, *Artemisia dioica*; 3, *Ajuga reptans variegata*; 4, Send in flower; 5, *Aster bessarabicus*.—*C. H.* 1, *Davallia bulata*; 2, *Adiantum hispidulum*; 3, *Pteris tremula*; 4, *Nephrodium molle*; 5, *Pteris argyrea*.—*C. L.* 1, *Cattleya Warscewiczii*; 2, *Oncidium excavatum (aurosium)*; 3, *Cypripedium longifolium*.—*J. M.* 1, *Aspidium cyrtomium falcatum*; 12, *Gymnogramma ochracea*; 19, *Adiantum hispidulum*; 44, *Davallia Tyermanii*; 7, *D. canariensis*; 71, *Asplenium flaccidum*; 9, *Polypodium pustulatum*.—*J. K.* *Euonymus europæus*.—*Without Name*. 1, *Tamarix gallica*; 2, *Berberis Darwinii*; 3, *Arbutus uva ursi*; 4, *Phyllirea angustifolia*; 5, not recognised; 6, *Diplopappus chrysophylla*; 7, *Xanthoxylon spinosum*.

ONCIDIUM CRISPUM: *E. M. C.* Your plant is kept too cool, it would do better if placed in the Cattleya-house, or where the temperature is kept at night for the approaching winter at 60° by night, and 70° by day. It is right to grow them on blocks as you are doing. Do not let it get dry.

ORCHIDS: *C. T. H. W.* Hybrids, a cross between two species. As regards your second question, it is a matter of opinion; we think you are right. In the third you are right; they are wrong.

PRESERVING BULBS FROM THE RAVAGES OF WIREWORM: *Chelsea*. When planting the bulbs, surround them with silver-sand, and sprinkle some soot over that. Bury Carrots, by making holes with a dibber, and pushing them into these just below the surface, amongst your planted bulbs. If the tops be cut off with a slice of the root they will not grow, and they will serve as a food for the wire-worm more to their liking than bulbs. Planting Parsley, Lettuce, or Endive, would have the same effect, but these plants would be unsightly in your bulb beds.

PROPAGATION: *Brown*. *Cistus*, rock Rose. Seeds or cuttings. The seeds should be sown in pans of light sandy soil in the spring, and kept under a hand-glass or in a cold frame till germinated. Cuttings may be made at the present season, and struck cool under glass; also in spring in slight bottom heat. In the former case the wood should be firm, and the length from 3 to 4 inches, in the latter the plants may be excited into growth in March, and soft growing tips taken as cuttings. *Chimonanthus*: by layering at this season.—*Coprosma*: easiest by layering.

COMMUNICATIONS RECEIVED.—*J. C.*—*C. N.* Antibes.—*T. Ware*.—*U. D.*, Berlin.—*W. R.* (next week).—*J. R. J.*—*H. H. D'O.*—*E. R.*, Ghent.—*W. B. H.*, Cork.—*M. D.*—*W. W.*—*Le Duc de M.*—*H. A.*—*Le Comte de G.*—*H. J. V.*—*Dr. Goetze*, Greifswald.—*Prof. M.*, Philadelphia.—*M. F.*—*W. S.*, New Mexico.—*H. P.*, New Orleans.—*H. W.*—*Thomas Wood*.—*G. W.*—*W. R. F.*—*B. J.*—*H. H.*—*Reginald*.—*No. 7*.—*Hope*.—*W. P.*—*W. B. W.*—*Dodge*.—*J. Platt*.—*Anon* (all next week).—*C. G. W.*—*E. F. T.*—*Ware*.—*A. P.*—*J. R.*—*W. R.*—*Geo. B.*—*Dr. F. K.*—*J. D.*—*J. H.*—*M. T.*—*H. W.*—*A. P.*—*A. D.*—*E. C.*—*R. D.*—*Wild Rose*.—*J. J. W.*—*C. A. M. C.*—*C. T. D.*—*Gardener Heartsdown*.—*E. V.*—*F. Bell*.—*J. W.*—*H. M. E.*—*F. K. E.*—*R. C. D.*

SPECIMENS RECEIVED.—*J. W. W.*—*G. M.*

PHOTOGRAPHS RECEIVED WITH THANKS.—*J. C.*—*W. L.*—*C. A. M. C.*—*H. P.*, New Orleans.



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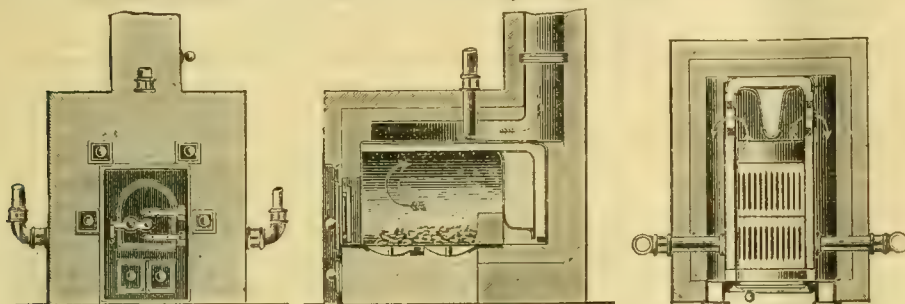
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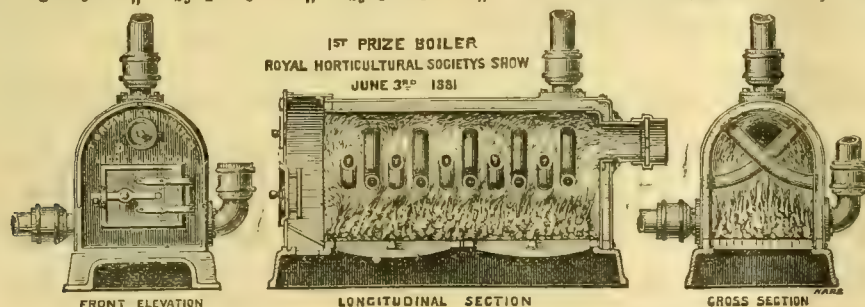
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	3 ft. 2 in. long	by 2 ft. 0 in. wide	by 2 ft. 0 in. deep		1000 ft.	Price
M B 1	4 0	by 2 0	by 2 0	Calculated to	1280	£ 15 0 0
M B 2	5 0	by 2 3	by 2 6	heat 4-in. piping	2200	21 0 0
M B 3	6 6	by 3 0	by 3 0	as follows:—	4000	31 0 0
M B 4	8 6	by 4 0	by 3 9		7000	60 0 0
M B 5						85 0 0



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Boilers.	Width.	Length.	Height.	Length of 4-inch Piping calculated to heat	Price.
	ft. n.	ft. in.	ft. in.	feet.	£ s. d.
B	1 6	by 3 0	by 2 10	600	16 0 0
C	1 9	by 3 6	by 2 0	800	22 0 0
D	1 9	by 4 0	by 2 2	1100	29 0 0
E	2 0	by 4 6	by 2 4	1400	38 0 0
F	2 3	by 5 0	by 2 6	1750	43 0 0
G	2 6	by 5 6	by 2 6	2000	50 0 0
H	2 9	by 6 0	by 2 6	2500	60 0 0
I	3 0	by 6 6	by 2 6	3000	70 0 0

TESTIMONIALS.

Re HEATING APPARATUS. Borough Engineer's Office, Municipal Buildings, Leeds, January 9, 1886.
MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS.
GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings.
The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1½ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.
Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.
I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

Morley House, Bagot, St. Saviour's, Jersey, November 10th, 1886.
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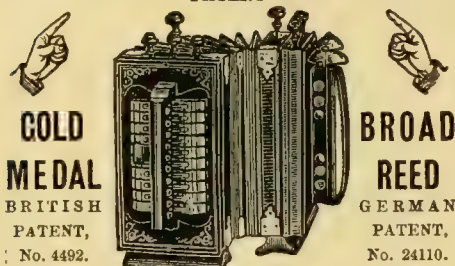
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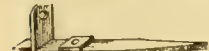
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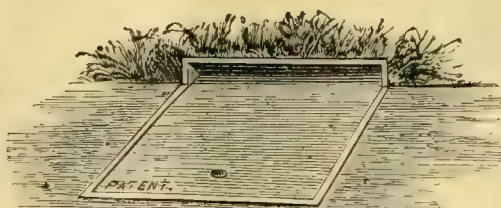
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From W. WALTON, Esq., Secretary to the LONDON CEMETERY COMPANY, The London Cemetery Company, 29, New Bridge Street, Blackfriars, E.C., July 25, 1892.—"To Messrs. VINCE & VINE, Highgate. I am very happy to testify that your Patent Garden Gully-Frames in lieu of the old-fashioned gratings answer admirably. They were by my authority fixed in a new pathway made in Highgate Cemetery, and in the recent thunder showers they were severely tested and were

THE IMPROVED GARDEN GULLY (VINCE'S PATENT).

This useful invention is a great improvement on the ordinary Garden Grating, and is especially suitable for hilly walks and drives. As they never get stopped by rubbish or sand they effectually prevent the washing away of the gravel in heavy storms, and they save half the labour in cleaning out the cesspools. The prices are:—

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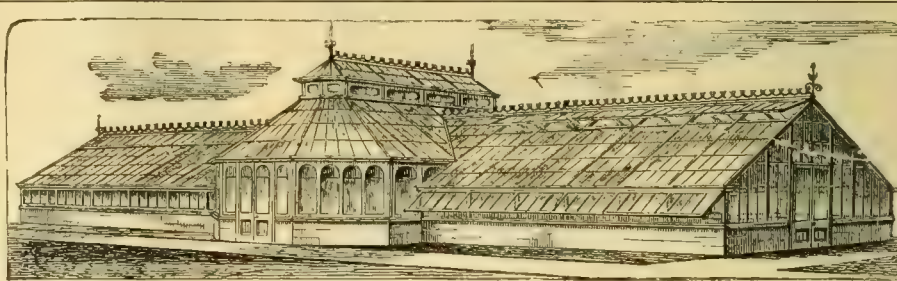
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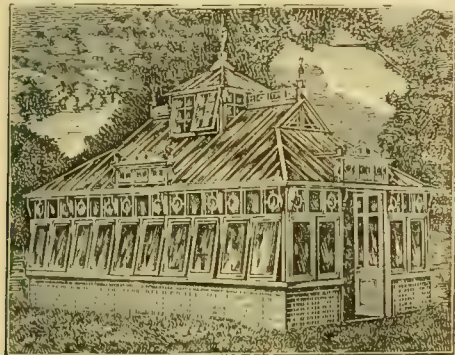
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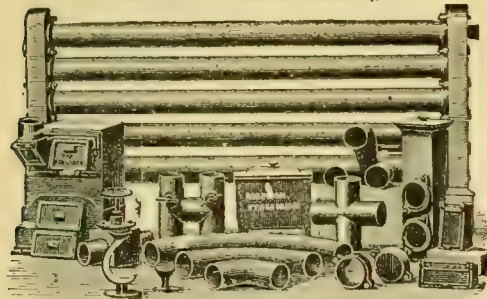
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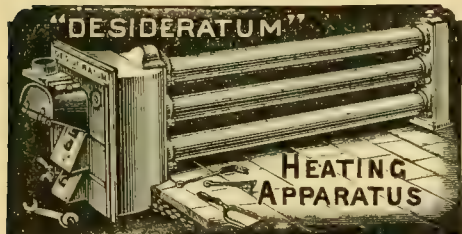


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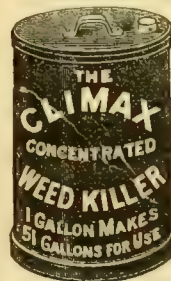
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Mr. S. EDWARDS, until recently Head Gardener to Sir J. L. E. SPEARMAN, Bart., Hansanor Court, as Head Gardener to Mrs. SAUNDERS DAVIES, Pentre House, Boncath, R.S.O.

Mr. E. DANIELS, for eight years Head Gardener to P. LLOYD, Esq., Loughon, Essex, as Head Gardener to WILDMAN CATTLEY, Esq., Bullingwood, Horsham.

Mr. FREDERICK SCRIVENER, as Gardener to Lord BOLTON, Bolton Hall, Bedale.

Mr. RICHARD DAVIES, formerly Gardener to Lord CHARLES SCOTT, Boujedward, Jedburgh, N.B., and latterly of Dalkeith Palace Gardens, as Gardener and Overseer to J. MARTIN WHITE, of Balruddery, near Dundee.

Mr. CHARLES JACKSON, for twenty-three years with SUTTON & SONS, Reading, has been appointed Head Gardener to J. MITCHENER, Esq., Highlands, Thurlow Hill, Dulwich.

Mr. W. R. HODGES, for twelve years Head Gardener to Mrs. JOSEPH CROSSLEY, Copley Dene, Cholmley Park, Highgate, as Head Gardener to Colonel MAKINS, Rotherfield Court, Henley-on-Thames.

Mr. H. CRUX, formerly Gardener to W. ROBERTS, Esq., Beckenham, as Gardener to ALEX. MILLER HALLETT, Esq., Goddington Hall, Orpington, Kent.

Mr. T. EDINGTON, formerly Gardener at Sizewell House, Leiston, Suffolk, as Gardener to A. CATOR, Esq., Woodbasket Hall, Norwich.

Mr. ALEX. INNIS, for the last four years' General Foreman in the Gardens, Duncombs Park, as Head Gardener and Manager to HELENEVELD, Contich, Antwerp, Belgium.

Mr. JAMES CHILD, previously Head Gardener and Bailiff for five years at Houndswood, St. Albans, as Head Gardener and Bailiff to PHILLIP WOOLLEY, Esq., The Brookes, Reigate, Surrey.

Mr. C. E. NASH, late Foreman of the Rhyddings, Accrington, Lancashire, as Head Gardener to T. BULLOUGH, Esq., Carter Place Hall, Haslingden, Lancashire.

Mr. J. NESS, formerly Gardener at Hatton Park, Wellingborough, has succeeded Mr. FYFE, as Gardener at Overstone Park, Northampton.

Mr. J. WALDEN, late Gardener at Weelsby House, Great Grimby, has succeeded Mr. J. NESS, as Gardener to G. L. WATKIN, Esq., Hatton Park, Wellingborough.

Mr. RBT. BLACKSTOCK, for the past two years Steward and Gardener to TOLLEMACHE SCOTT, Esq., Bosworth Park, Market Bosworth, Leicestershire, as Head Gardener to Sir EMILUS LAURIE, Bart., Maxwellton House, Dumfriesshire.

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J. D. MARWICK, Town Clerk.

City Chambers, Glasgow, October 24, 1892.

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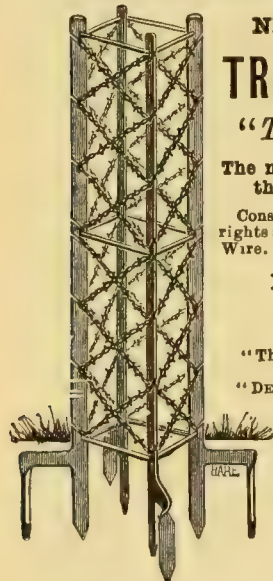
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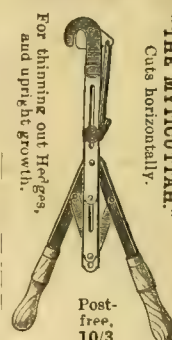
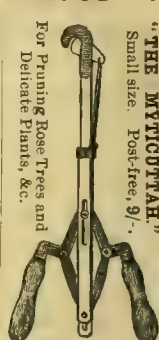
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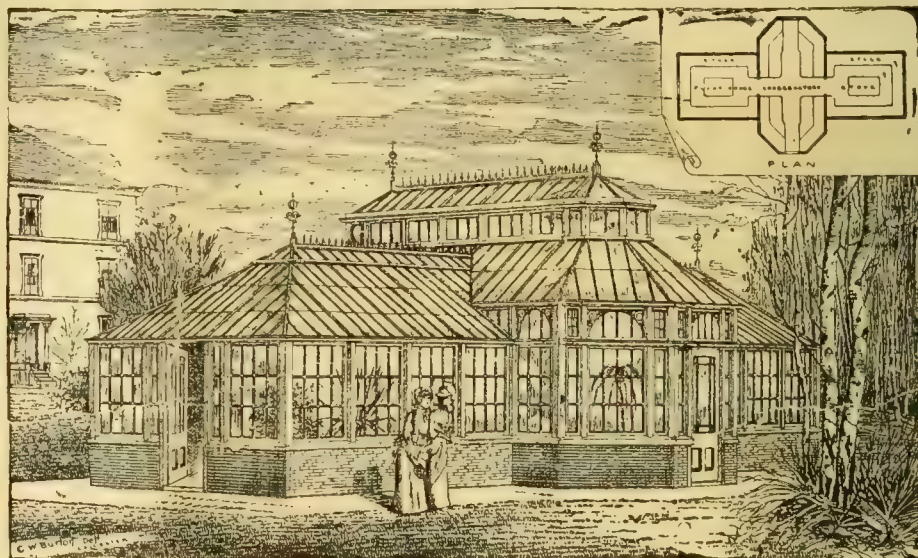
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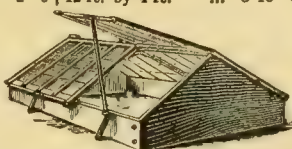
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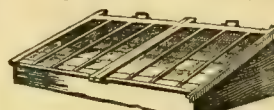
A large number of the illustrations are taken from greenhouses erected by us in various parts of the country; an inspection of this Catalogue shows, therefore, buildings the efficiency of which has been well tested by actual use. The advantages possessed by us enable us to carry out work with the utmost promptness, and in the very best style, at prices which defy competition. Surveys made, and gentlemen waited on in any part of the country. Plans and Estimates free on application.

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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2706.

No. 306.—VOL. XII. {THIRD SERIES.}

SATURDAY, NOVEMBER 5, 1892.

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WITH SUPPLEMENT. POST-FREE, 3½d.

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ADVERTISERS will greatly assist our efforts to get to Press earlier, by forwarding their favours as EARLY IN THE WEEK as possible.

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Tuesday, November 8.

IMPORTATION of ANGRÆCUM from NATAL.
360 PLANTS and 12 CLUMPS. Collector describes them as follows:—Flowers milk-white, from $\frac{3}{4}$ to 1 inch in diameter, resembling A. sesquipedale, only smaller.

MESSRS. PROTHEROE AND MORRIS will include the above in their ORCHID SALE on TUESDAY NEXT, November 8.

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Two Days' CLEARANCE SALE of the whole of the NURSERY STOCK growing at the Branch Nursery, by order of Messrs. Sandy & Son, who have disposed of the Home Nursery and Business. IMPORTANT to GENTLEMEN, NURSEY-MEN, and OTHERS engaged in PLANTING.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Farm Nursery, Stafford, on TUESDAY and WEDNESDAY NEXT, November 8 and 9, at 12 o'clock precisely each day, without the least reserve, the well-grown

NURSERY STOCK,

comprising 10,000 Oaks, 16,000 Scotch Firs, 12,000 Spruce Firs, 18,500 Beech, 3500 Horse Chestnuts, 8000 Larch, 900 Limes, 16,500 Pinus austriaca, 3000 Pinus laricina, 300 P. cembra, 5500 Sycamore, 3000 Birch, 4500 Hollies, 150 Weeping Elms, 350 Copper Beech, 400 Double Pink and White Thorns, 350 Aucubas, 900 English Yews, 300 Azalea pontica, 200 Cupressus Lawsoni, 1500 Pears, 5500 Apples, 25,000 transplanted Quick Rose Stocks, and various other items.

May be viewed any day prior to the Sale. Catalogues may be had of Messrs. Sandy & Son, Nurserymen, Stafford; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.—Importations received Direct.

100 LÆLIA PURPURATA, all selected pieces.
300 CYPRIPEDIUM GODEFROYÆ.
400 PHALENOPSIS ESMERALDA.
1000 CYPRIPEDIUM SPECIES, from Messrs. Walter Kemsley & Co.
200 ODONTOGLOSSUM ALEXANDRÆ, Established Plants.

Also ORCHIDS, in Flower and Bud, GREEN TREE FROG, GOLD FISH, ORCHID PEAT, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 8, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Thursday Next.

100 AZALEA INDICA.
50 " MOLLIS.

DEUTZIA GRACILIS, PALMS, comprising KENTIAS, LATANIAS, PHENIX and ARECAS, 75 plants, including ASPIDISTRAS, FICUS and ARALIAS received direct from well-known Nurseries in Belgium.

Also LILY OF THE VALLEY BERLIN CROWNS, LILUM LONGIFLORUM, English grown; 50 lots of choice-named DAFFODILS, CHIONODOXAS, &c.; CHINESE SACRED LILIES, BEGONIAS, GLOXINIAS, SPIRÆAS, ORNAMENTAL PLANTS, GREENHOUSE, and STOVE FERNS, IRIS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, November 10, at 12 o'clock, precisely.

On view morning of Sale, and Catalogues had.

The Alexandra Palace, Muswell Hill, N.

Close to the Palace Gates and Wood Green Railway Station. Unreserved Sale of the SPECIMEN and other STOVE and GREENHOUSE PLANTS, by order of the London Financial Association.

Important to Noblemen, Curators of Botanical and Winter Gardens, the Furnishing Trade, and Others.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises (in the Large Conservatory attached to the Palace, admittance by Wood Green entrance only), the Alexandra Palace, Muswell Hill, N., on THURSDAY NEXT, November 10, at 12 o'clock precisely, without the least reserve, the whole of the valuable

SPECIMEN STOVE and GREENHOUSE PLANTS, including noble examples of the following:—

Phoenix dactylifera, 2 plants, in 24-inch tubs
" 8 feet, 30 leaves
Chamaerops Fortunei, 8 feet stem, 50 leaves
" several in 14-inch pots
Sesforthia elegans, very fine plant; stem 23 feet, 12 large leaves
Araucaria excelsa, 20 feet
" Bidwillii, 2 grand plants, 40 feet high
Latania borbonica, splendid specimen; stem 2 feet, 6 in., 20 leaves, 16 feet round.
Sabal umbraculifera, 18 fronds, 12 feet through; stem 5 feet
200 Hedychiums, 150 Agapanthus umbellatus, 200 Genista fragrans, Ferns in great variety, Imantophyllums, Acacia armata, 300 Calla aethiopica, Yucca recurva, Aloe americana and variegata, Aspidistras, Grevilleas, and hundreds of other Greenhouse and Ornamental Plants.

May be viewed on and after November 5. Admission by Catalogue only, obtainable of the London Financial Association, 1, Draper's Gardens, E.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Large Consignment of Japanese Lilies.
JUST RECEIVED DIRECT FROM JAPAN, FOR ABSOLUTE SALE, WITHOUT RESERVE.

20,184 LILY BULBS,

In 200 cases, comprising
495 LILIUM AURATUM, first size
5800 " " second size
2880 " SPECIOSUM RUBRUM
880 " " MELPOMONE
1440 " " ALBUM
4625 " LONGIFLORUM
100 " BROWNII
1200 " KRAMERI
780 " ELEGANS, best Red variety
250 CHINESE SACRED LILIES

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, November 10, at 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

N.B.—The Auctioneers will be pleased to carefully execute Commissions, and forward Goods for Provincial and Foreign Buyers who are unable to attend the Sale.

Bagshot.

THREE DAYS' UNRESERVED SALE of beautifully-grown and well-rooted NURSERY STOCK, in splendid condition for removal, by order of Messrs. John Waterer & Sons, Limited.

IMPORTANT to NOBLEMEN, GENTLEMEN, and OTHERS

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the well-known Bagshot Nurseries, Bagshot, Surrey, on TUESDAY NEXT, November 8, and TWO FOLLOWING DAYS, at 12 o'clock each day, several acres of NURSERY STOCK, grown to the greatest perfection, and exceedingly well rooted, comprising a great variety of CONIFERS, splendid specimens for effective planting, 4 to 8 feet; hundreds of well-coloured Golden Retinosporas; very fine specimen Gold and Silver Variegated Hollies, 4 to 6 feet, standard and pyramids; 1000 Green Hollies, 3 to 5 feet; Aucubas, Laurels, English Yews; 2000 named Rhododendrons, 2 to 2½ feet, bushy plants, of the newest kinds; Ponticum Rhododendron in quantity; 1000 Spruce Firs, 2½ to 4 feet, and a quantity of larger plants 4 to 8 feet, specially adapted for Christmas Trees; 2000 Standard Ornamental Trees, 8 to 12 feet; Purple Beech, Limes, Chestnuts, Poplars, &c.; thousands of Flowering Shrubs, in large quantities; small Conifers for potting and boxes, consisting of Cupressus, Retinosporas, &c.

Bag-shot Station is on the Nursery, whence goods may be transmitted to all parts.

Purchasers will be allowed until December 31 for removing their lots, and Messrs. Waterer & Sons will undertake to lift and forward any goods bought at the Sale, simply charging for the time and labour occupied.

Stock may be viewed any time prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Monday Next, November 7.
PLANTS FROM BELGIUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, November 7, at 12 o'clock—

100 AZALEA INDICA, well-budded.
100 AZALEA MOLLIS, well-budded.
24 DRACÆNAS.
36 PALMS.
24 FICUS.

Received direct from Belgium.

DAFFODILS, GLOXINIAS, BEGONIAS, LILUM HARRISII, ORNAMENTAL PLANTS, HARDY BULBS, GREENHOUSE and STOVE FERNS from an English Nursery; 80 CRINUM SPECIES, SPIRÆAS, HARDY BULBS, &c.

On view morning of Sale, and Catalogues had.

The Celebrated Maplewell Collection of MASDEVALLIAS.

and a few other choice ESTABLISHED ORCHIDS.

IMPORTANT UNRESERVED SALE by order of the executors of the late Sir William Salt, Bart.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, November 29, 1892, at half-past 12 o'clock precisely, the ENTIRE COLLECTION of MASDEVALLIAS, probably the most complete that has ever been submitted to the hammer, and comprising many rarities. The plants are in perfect health, and consist for the most part of fine examples. Amongst them will be found the following:—

Masdevallia racemosa	Masdevallia fulvescens
" platyglossa	" glophyantha
" elephanticeps	" Mearesiana
" pachyantha	" falcata
" ignea Echardi	" gargantua
" Davisii	" Gaskelliana
" Schröderiana	" Goireana
" Heathii	" geminata
" Mooreana	" Roehz auriferum
" muscosa	" Carderi
" Villandiana	" Wendlandiana
" Ellisiana	" Harryana, including the
" Lauchiana	very finest varieties,
" Rolfiana	such as rotundifolia,
" Genelliana	Thompson's Scarlet,
" cucullata	armeniaca, grandis,
" Armini	Bull's Blood, mirabilis,
" Courtoudiana	Comet,

and OTHERS.

Also an assortment of choice CATTLEYAS, LÆLIAS, ODONTOGLOSSUMS, ONCIDIUMS, and other Orchids.

On view morning of Sale, and Catalogues had.

Sale—November 11.

BY ORDER OF F. SANDER & CO., ST. ALBANS.

NEW ORCHIDS

FROM THE NATUNAS ISLANDS.

NO OTHER COLLECTOR HAS EVER EXPLORED THIS GROUP.

SACCOLABIUM SANDERÆ (provisionally named).—A distinct and remarkable-looking species, with white and amethyst flowers, and strikingly handsome foliage.

COELOGYNE ERICSSONII (provisionally named).—This is without doubt the premier representative of the genus, provisionally named after our intrepid and indefatigable collector, Mr. C. Ericsson. A large white flowering variety, with long racemes.

A NEW DENDROBIUM, in the way of D. AMETHYSTOGLOSSUM.

Also a superb Importation, in perfect condition, and containing many truly grand specimens of a CYPRIPEDIUM, reminding one of the Western Palmifolium.

BRASSIA LANCEANA, the long-tailed green and chocolate spotted OCTOPUS ORCHID; flowers often measuring 2 feet across.

SOBRALIA SPECIOSISSIMA.

A new and remarkable SOBRALIA, with delicate lavender sepals and petals, and a terra-cotta red lip.

DENDROBIUM DICUPHUM, rare and beautiful.

A PHAIUS with purple blossoms, from New Guinea.

CYPRIPEDIUM ANNAMENSE (provisionally named).—A distinct and vigorously growing species, citron and white blooms, with purple blotches.

100 splendid Plants in Flower and Sheath of the true old autumn-flowering CATTLEYA LABIATA, &c., &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 11, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Feltham.

Absolutely WITHOUT RESERVE, a portion of the unusually well grown NURSERY STOCK, by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Lee's Nursery, Feltham, Middlesex, ten minutes' walk from Feltham Station, on FRIDAY NEXT, November 11, at 12 o'clock, thousands of splendid specimen Conifers and Evergreens, all beautifully grown, and recently transplanted, 2½ to 6 feet; standard variegated Hollies, Golden Yews, 300 Cupressus erecta viridis, English Yews, Laurels, 500 Limes, Poplars, Laburnums, and other standard trees. Privet, named Rhododendrons, and other stock.

May be viewed any day prior to the Sale. Catalogues had on the Premises, at the Royal Vineyard Nursery, 2, Hammer-smith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Barnham Nurseries, near Bognor.

TWO DAYS SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, by order of Mr. S. S. Marshall, on TUESDAY and WEDNESDAY, November 15 and 16, at 12 o'clock each day, a portion of the GENERAL NURSERY STOCK, comprising 6000 Conifers, Evergreens, and Deciduous Shrubs, 12,000 splendidly-grown Fruit Trees of the best varieties, including Maiden, two-year, Standard and Fruiting Pyramid Apples, Pears, Plums, Cherries, and several hundreds of extra size trained Pears, Apples, and Plums; 25,000 Crab Stocks; 1000 Specimen Border Shrubs, 2 to 8 feet; 1000 Lilacs, 3 to 7 feet; 1500 Box, 1 to 2 feet; 2000 Standard and Dwarf Roses, of the best varieties; 10,000 Manetti Stocks; Ornamental Trees for Avenue planting, consisting of Sycamore, Horse Chestnuts, Limes, &c., and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Thursday, November 17.

GREAT SALE OF PALM and other SEEDS.

90,000 ARAUCARIA EXCELSA

(These have been specially collected, and packed in damp-proof sand, and are expected to arrive in fine condition.)

21,000 KENTIA BELMOREANA
17,500 " FORSTERIANA
1,250 " CANTERBURYANA
1,800 CASTANOSPERMUM AUSTRALIS
(The most beautiful of Australian Evergreen Trees)
114,000 CORYPHA AUSTRALIS
8,000 MACROZAMIA SPIRALIS
15,000 PHENIX RECLINATA
10 lb. EUCALYPTUS GLOBULUS

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on THURSDAY, November 17.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY, at 12 o'clock, large consignments of first-class

HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland. Lotted to suit the Trade and Private Buyers. 12 tons are sold every week.

On view morning of Sale, and Catalogues had.

N.B.—There will be no Sale on Wednesday next, November 9, being Lord Mayor's Show Day.

Great Northern Railway.

WITHOUT THE LEAST RESERVE,
GREAT TRADE SALE OF ORCHIDS.

Owing to the Great Northern Railway Company requiring a portion of the Nursery and Orchid-houses for the erection of a Railway Station on the Establishment,

MESSRS. PROTHEROE AND MORRIS have been instructed by Messrs. F. Sander & Co., St. Albans, to **SELL by AUCTION, on TUESDAY, November 22**, about 10,000 ORCHIDS, to make the necessary room. This will include thousands of *ODONTOGLOSSUM ALEXANDRE*, of our famed type, absolutely unflowered; large quantities of Market *CATTLEYAS* and *LELIAS*, &c. The bulk of the Orchids offered in this Sale will be specially suitable for cut-flower purposes and growing for Market.

The plants will be removed, for convenience sake, to Messrs. Protheroe & Morris' Rooms, 67 and 68, Cheapside, London, E.C.

Choice Bulbs from Holland.

MR. J. C. STEVENS will **SELL by AUCTION**, every MONDAY, WEDNESDAY, THURSDAY and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice **BULBS** arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Monday Next.

5000 *LILIUM AURATUM*, 2000 *LILIUM SPECIOSUM* ALBUM, and 1000 *L. SPECIOSUM* RUBRUM, just received from Japan. 20,000 *LILY OF THE VALLEY* Crowns and Clumps, &c. Also 10 large cases of *DUTCH BULBS*, as received.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, November 7.

On view morning of Sale, and Catalogues had.

Wednesday Next.

A fine Consignment of *ROSES*, *HYDRANGEAS*, *RHODODENDRONS*, *DEUTZIAS*, *MAHONIAS*, &c., from Holland; *DWARF ROSES*, from an English Grower; *LAURELS*, and other *SHRUBS*; 15,000 *LILY OF THE VALLEY* Crown and Clumps; *IRIS*, *SPIRÆA*, *FREESIAS*, *LILUMS*, from Japan; and many other *BULBS* and *ROOTS*.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 9.

On view morning of Sale, and Catalogues had.

Thursday Next.—Without Reserve.

18 Cases of ORCHIDS, in splendid condition, just from Brazil, comprising 10 Cases of *CATTLEYA LABIATA*, containing 700 very fine Plants; 5 Cases, containing 270 Plants of *CATTLEYA* or *LELIA SPECIES*; and 3 Cases with 1450 MIXED PLANTS of *DENDROBIUMS*, &c.

MR. J. C. STEVENS will **SELL the above by AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 10, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next.—Without Reserve.

Nine Cases of ORCHIDS, as received from Singapore, containing 2000 *TUBERS*, *ANECTOCYLUS DAWSONIANUS*, 210 *CYPRIPEDIUM LOWII*, 2000 *C. BARBATUM*, a large specimen plant of *SACCOLABUM HARRISONIANUM*, 50 *VANDA LOWII*, 8 *ABRIDENS VIRENS GAUDIFLORUM*, 150 *CELOGYNE ASPERATA*, 50 *C. PANDURATA*, 70 *C. SPECIES*, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 10.

On view morning of Sale, and Catalogues had.

WANTED, TO RENT, a GENTLEMAN'S GARDEN, with plenty of glass, Orchard, &c. **HORTUS**, 11, Peckham Rye, S.E.

WANTED, a NURSERY, 2 to 3 acres, with Modern Glass Erections. Full particulars to—**C. P. J.**, Brooklets, Hanworth Broad, Hampton, Middlesex.

TO BE SOLD, Small MARKET NURSERY BUSINESS, suit Beginners, low rent, close to road and rail. Price £250.—**G. E.**, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Growers for Market.

FOR SALE, the LEASE of a ¼ of an Acre of GARDEN, 3 GREENHOUSES, making 150 feet long by 12 wide, well heated, 15 miles from London, 15 minutes' from Rail. Rent £12; small Cottage adjoining, held on agreement at 4s. per week.

For particulars, apply **W. K. T.**, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

£850—FREEHOLD NURSERY, S.E.—Well situated; Dwelling house, 7 large Rooms; 5 Greenhouses, fitted with Heating Apparatus; well stocked. **BROWN**, Ramsey Villa, Weymouth Street, Watford.

Sussex.—By order of Executors.

TO MARKET GARDENERS, FRUIT GROWERS, and OTHERS. Thoroughly genuine Business. Established for many years.

MESSRS. PROTHEROE AND MORRIS are instructed to **DISPOSE OF** a choice and productive **FREEHOLD MARKET GARDEN and FRUIT GROUND**, about 14 Acres, abundantly stocked with the best kinds of Fruit Trees; also convenient Residence, Stabling, and Out-buildings. Immediate possession.

Full particulars and terms may be obtained of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Warwickshire.—Erdington Hall Estate.

TO BE LET, an excellent **FARM**, situate within 3 miles of Stephenson Place, Birmingham. There is a large House and extensive Buildings, and the Land is well adapted for Market Gardening, being close to the City. It consists of Arable and Pasture Land, and is about 173 Acres.

For Rent and Particulars, apply to Messrs. **J. C. FOWKE AND SON**, Solicitors, 120, Colmore Row, Birmingham.

Middlesex.

TO BE LET, on LEASE, about 4 acres of excellent **LAND**, particularly adapted for Nursery Purposes for Growing Fruit Trees, or for the Erection of Glass. Capital Residence, 5 Bedrooms, 2 Sitting-rooms, Stables and Coach House. Rent £100 per annum. Price on application to Messrs. **PROTHEROE AND MORRIS**, 67 and 68, Cheapside, London, E.C.

The Nurseries, Staines Road, Hounslow.

IN BANKRUPTCY re **J. AND G. BANNISTER**. By order of the Official Receiver.

SALE OF THE LEASE and the whole of the **GLASS ERECTIONS, STOCK, and UTENSILS in TRADE**, in one or two lots, as a going concern.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL the above by Private Treaty**.

The premises comprise one large block of land, with fifteen Greenhouses; also another block of land, with one large Greenhouse, 600 feet in length.

The whole of the Stock will be included in the purchase. Offers to be made at once. Full particulars of Messrs. **PROTHEROE AND MORRIS**, 67 & 68, Cheapside, London, E.C.

FOR SALE, GARDENERS' CHRONICLE, well-bound Yearly Volumes—1855 to 1858, 1860 and 1861, 1865 to 1871; also Half-Yearly, 1882 and 1883.

Address, **C. S.**, Castle Gardens, Guildford.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be **DISPOSED OF**.

MESSRS. PROTHEROE AND MORRIS' **HORTICULTURAL REGISTER** contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

FOR ORCHIDS and GARDENERS to Grow Them, apply to **SANDER'S**, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

ROSES.—Standard, Dwarf, and Climbing for Conservatories, of the finest quality.

FRUIT TREES of best varieties. **CLEMATIS** of leading kinds. **EVERGREENS** for planting.

CUPRESSUS, grown in wire baskets, to ensure safe removal.

LAURELS, 5 to 7 feet high, and heavy.

Specimen **SPANISH CHESTNUTS** and **WALNUTS**, and Dwarf-trained **Victoria PLUMS**, 8 feet by 10 feet.

Mountain **ASH**, Forcing **RHUBARB**, **GOOSEBERRY** and **CURRENT TREES** at lowest prices.

JOHN PEED AND SONS, Streatham, S.W.

The Best Present for a Gardener.

VINES and VINE CULTURE.

The most complete and exhaustive Treatise on Grapes and their Culture ever published.

Third Edition, just out.

Price 5s., post-free, 5s. 6d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

D A F F O D I L

COUNTRESS OF ANNESLEY.

Splendid large cultivated Bulbs, to produce two and three flowers each, free by post, at 6s. 6d. per dozen.

Also **LIST of SURPLUS STOCK of NEW and RARE SHRUBS**, 20 per cent. under Catalogue price, on application to—

Mr. RYAN, Castlewellan, co. Down.

P E A C H T R E E S.

Extra large and good Trees, subject to not being sold on receipt of order.

Royal George	Barrington	Nearly York
Hayle's Early	Dr. Hogg	Nectarine Peach
Princess of Wales	Royal Charlotte	Early Alexandra
Waterloo	Alexandra Noblesse	

The above were lifted last season.

W. E. MARSHALL, Abbeywood, Kent.

THE LIVERPOOL HORTICULTURAL CO.

(**JOHN COWAN**), Limited,

THE VINEYARD AND NURSERIES, GARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other **ROSES**, in pots.

ERICAS, AZALEAS, PALMS,

FERNS, &c., &c.

CATALOGUES, with full particulars, post free on application.

Special Quotations to the Trade.

EXHIBITIONS.

KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY.

President—**G. C. SHERRARD, Esq., J.P.**
The **SIXTEENTH ANNUAL GRAND SHOW OF CHRYSANTHEMUMS, FRUITS, PLANTS, &c.**, will be held in the **DRILL HALL, KINGSTON-ON-THAMES**, on **TUESDAY** and **WEDNESDAY, November 8 and 9, 1892.**

Over £130 offered in Prizes, in addition to the Sixth Grand Champion Challenge Vase, value 25 Guineas; also Silver Cup, value 5 Guineas.

Schedules, and other information, from the Hon. Sec., **MR. GEO. WOODGATE**, Warren House Gardens, Kingston Hill, Surrey.

NATIONAL CHRYSANTHEMUM SOCIETY.

GREAT AUTUMN FESTIVAL and EXHIBITION, TUESDAY, WEDNESDAY, and THURSDAY, November 8, 9, and 10, at the ROYAL AQUARIUM, WESTMINSTER.

Competition for the National Challenge Trophy, and the valuable Holmes' Memorial Cups and Medals.

Prizes for Table Decorations and Fruit. Valuable Special Prizes for Vegetables. Floral Committee at 1 o'clock.

Schedules of Prizes and particulars of **RICHARD DEAN**, Secretary and Superintendent, Ranelagh Road, Ealing, W.

THE LEEDS PAXTON SOCIETY'S FOURTH ANNUAL CHRYSANTHEMUM SHOW

Will be held in the **TOWN HALL, LEEDS**, on **TUESDAY** and **WEDNESDAY, November 8 and 9, 1892.**

W. APPELBY, Hon. Sec.

SHEFFIELD, HALLAMSHIRE, and WEST RIDING UNITED CHRYSANTHEMUM SOCIETY.

ANNUAL SHOW, in CORN EXCHANGE, SHEFFIELD, on **FRIDAY and SATURDAY, November 11 and 12, 1892.**

£200 in Prizes. £50 Open Class Cut Blooms; also Silver Cup, and the Gardeners' Magazine Silver Medal.

Schedules free, on application to—**172, Cemetery Road. WM. HOUSLEY, Secretary.**

TWICKENHAM HORTICULTURAL SOCIETY.

The **ANNUAL AUTUMN SHOW** will be held at the Town Hall, Twickenham, on **TUESDAY and WEDNESDAY, November 15 and 16.** Intending competitors will oblige by forwarding their entries on or before Friday, November 11.

For Schedules and further particulars, apply to—**JAMES J. G. PUGH, Hon. Sec.,**

2, Heath Road, Twickenham.

READING CHRYSANTHEMUM SOCIETY.

ANNUAL SHOW, November 15 and 16, 1892.

£150 in Prizes for Fruit and Flowers. Silver Medal given by the Proprietors of the *Gardeners' Magazine*.

Entries close November 11, 1892.

WM. L. WALKER, Sec., Dmollie, Bulmershe Road, Reading.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.

NINTH ANNUAL SHOW, HULL, WEDNESDAY and THURSDAY, November 16 and 17.

Class 1.—£17 10s. for 21 Incurred, and Silver Cup, value £5 5s.

Class 3.—£17 10s. for 24 Japanese, and Silver Cup, value £5 5s.

Entries close November 9. Schedules from—

EDW. HARLAND, Manor Street, Hull, { Hon. Secs.

JAMES DIXON, 2, County Buildings, Hull, }

YORK CHRYSANTHEMUM SHOW.

The **THIRTEENTH ANNUAL SHOW** will take place on November 16, 17, and 18, 1892, in the **FINE ART EXHIBITION BUILDING.**

£170 in Prizes is offered. Proportionately Liberal Prizes for Plants, Flowers, Fruits, and Vegetables.

Entries close November 9. Schedules, &c., from—

J. LAZENBY, 13, Feasegate, York.

WAVERLEY MARKET, EDINBURGH.—GRAND CHRYSANTHEMUM EXHIBITION,

November 17, 18, and 19. City of Edinburgh CUP, value £20, for 48 Blooms (Japanese), not less than 36 varieties, and many other **VALUABLE PRIZES**.—Schedules on application to the Secretary.

ROBERT LAIRD, 17, Frederick Street.

THE FINEST AND MOST INTERESTING CHRYSANTHEMUM SHOW

In the Country will be on View from **NOVEMBER 2**, at **J. R. PEARSON and SONS' CHILWELL NURSERIES**, Beeston Station (M. R.) is 10 minutes' walk from the Nurseries.

To the Trade.

SEAKALE, extra strong for Forcing.—Prices and Samples on application.

H. B. MAY, Dysons' Lane Nurseries, Upper Edmonton.

GREAT BARGAINS IN BULBS!

Grand Monarch Polyanthus Narciss, 40s. per 1000, 5s. per 100; Grand Soleil d'Or, 30s. per 1000, 4s. per 100; Scilly Whites, 50s. per 1000, 5s. 6d. per 100; Double Incomparable Narciss, 15s. per 1000, 2s. per 100; Poeticus, 10s. per 1000; Biflorus, extra large, 10s. 6d. per 1000, 1s. 6d. per 100; Ornatus, true, 35s. per 1000, 4s. per 100; Gladiolus "The Bride," true, 3s. 6d. per 100. All fine Bulbs, true to name, and offered for Cash with Order.

PONTEY'S BULB and SEED WAREHOUSE, PLYMOUTH. (Established nearly a Century.)

LONDON PLANES.—Large Stock, very fine trees, good stems, splendid roots, all sizes from 8 to 18 feet high, and all other leading kinds of Standard Trees suitable for roadside or park planting.

IRISH IVIES in pots, 3 feet to 12 feet.

SHRUBS, TREES, ROSES, FRUIT TREES, CLIMBERS, &c., in endless variety. Specially low prices for quantities.

Descriptive Priced Lists free, also of **BULBS, SEEDS, PLANTS, TOOLS, and REQUISITES.**

W. FROMOW AND SONS, Sutton Court Nurseries, Chiswick, W. Branch Nurseries: Hounslow and Acton Green.

Established 1829.

NEW CHRYSANTHEMUMS.

NORMAN DAVIS

Begs to intimate that he has among the New Chrysanthemums of the present season, several of exceptionally fine quality, including the two magnificent New Crimson Japanese—

WILLIAM SEWARD & J. SHRIMPTON,

the finest introductions of recent years, and which will be distributed by him during the coming spring. CATALOGUE ON APPLICATION.

CHRYSANTHEMUM NURSERIES,

LILFORD ROAD, CAMBERWELL, LONDON, S.E.

THE COLORADO BLUE SPRUCE,

PICEA PUNGENS GLAUCA.

Handsome specimens, 2, 3, 4, 5, and 6 feet high. These are all of the *Bluest* type, and undoubtedly the finest plants in commerce. They are all seedlings, the plants usually met with being grafted on the Common Spruce Fir.

ANTHONY WATERER,

KNAP HILL NURSERY, WOKING, SURREY.



MARLY LILAC

(Well Budded).
The best of all for Forcing. Thousands for Disposal.

CROUX ET FILS,

NURSEYMEN,
LE VAL D'AULNAY, PRÈS SCEAUX
(SEINE), FRANCE.

Great Specialty in Trained Fruit
Trees for Immediate Planting.

CATALOGUES free on application.

SPECIAL CULTURE OF

FRUIT TREES AND ROSES.

A LARGE AND SELECT STOCK IS NOW
OFFERED FOR SALE.

The Illustrated and Descriptive Catalogue of
Fruits, post-free, 3d.

The Descriptive Catalogue of Roses, post-free.

THOMAS RIVERS & SON,
THE NURSERIES,
SAWBRIDGEWORTH, HERTS.

CHEAP

PALMS.—PALMS.—PALMS.

150,000 ON VIEW.

J. W. SILVER begs to call attention to his
immense stock of PALMS and ASPIDISTRAS, in all
the leading kinds, and in all sizes. Many fine specimens to offer.
SILVER'S CELEBRATED COLLECTIONS of 18 PALMS, in
4-inch pots, for 1s., and in 3-inch pots, for 6s.—all splendid kinds,
healthy, and well established—is the greatest bargain ever
offered. Wholesale and Retail. Catalogues free.

J. W. SILVER, Streatham & Norbury Nurseries, S.W.

THE FINEST EXHIBITION
OF

CHRYSANTHEMUMS,

including all the best varieties of recent
introduction, and many

AMERICAN NOVELTIES

not yet in commerce. Should be seen by all.

MESSRS.

PITCHER & MANDA

invite everyone interested in these flowers
to visit their exhibition at

THE UNITED STATES NURSERIES,

HEXTABLE, SWANLEY

KENT.

ANTHONY WATERER

Invites an inspection from intending Planters to the following well-grown TREES, having stout, clean stems, with handsomely-furnished, well-balanced heads, and from frequently transplanting are splendidly rooted; the girth of the stem is taken at 4 feet from the ground:—

ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.

WIERI LACINIATUM, 10 to 14 feet, girth 3 to 5 inches.

NEGUNDO VARIEGATUM, Standards, 8 to 10 feet.

REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.

SCHWEDLERI, 12 to 18 feet, girth 4 to 8 inches.

WORLEYI, 12 to 14 feet, girth 3 to 6 inches.

ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.

BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.

BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.

CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.

CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.

Double White, 14 to 16 feet, girth 6 to 8 inches.

Scarlet, 12 to 18 feet, girth 4 to 10 inches.

Spanish, 12 to 14 feet, girth 4 to 5 inches.

ELMS, English, 10 to 12 feet, girth 3 to 6 inches.

Guernsey, 16 to 18 feet, girth 7 to 9 inches.

LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.

EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.

Silver-leaved (Tilia argentea), 12 to 14 feet, girth 5 to 6 inches.

LIQUIDAMBAR, 6 to 10 feet.

MAPLE, Norway, 12 to 16 feet.

OAK, English, 12 to 14 feet, girth 4 to 5 inches.

Scarlet American, 12 to 14 feet, girth 4 to 5 inches.

PLANES (English-grown), 12 to 16 feet, girth 4 to 6 inches.

POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.

SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.

Purple, 14 to 16 feet, girth 6 to 7 inches.

THORNS, Double Pink, 8 to 10 feet.

Scarlet, 8 to 10 feet.

White, 8 to 10 feet.

TULIP TREES, 8 to 10 feet.

WALNUT, Common, 10 to 12 feet.

WEeping TREES.

BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.

Weeping, Purple, Pyramids and Standards, 7 to 12 feet.

BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.

Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.

ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.

LARCH, Weeping, Pyramids, 8 to 10 feet.

POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.

KNAP HILL NURSERY, WOKING, SURREY.

H. LANE & SON

Beg to call the attention of intending Planters to their extensive
Stocks of TREES and SHRUBS for immediate effect, extending
over 150 acres, including the following, all uninjured by frost.

EVERGREENS.

AUCUBAS, BERBERIS, BOX, COTONEASTERS, HOLLIES
(Green and Variegated), LAURELS, PORTUGAL LAURELS,
MAHONIAS, GOLDEN YEWs (fine specimens, 6 feet in
diameter), and Thousands of smaller Seedling Varieties, in
different shades of colour, variety, and form.

FLOWERING SHRUBS.

DEUTZIAS, ELDER (Golden and Variegated), GUELDER
ROSES, THORNS in variety, LABURNUMS, LILACS,
PHILADELPHUS, RIBES, SPIREAS, WEIGELAS, &c.

DECIDUOUS TREES.

MAPLES, SYCAMORES, BEECH, Black NORWEGIAN
BIRCH, CHESTNUTS, ELMS, LIMES, PURPLE-LEAVED
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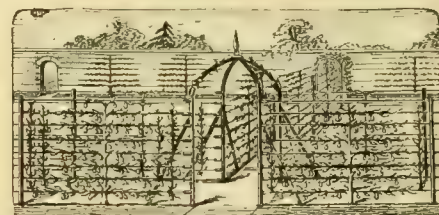
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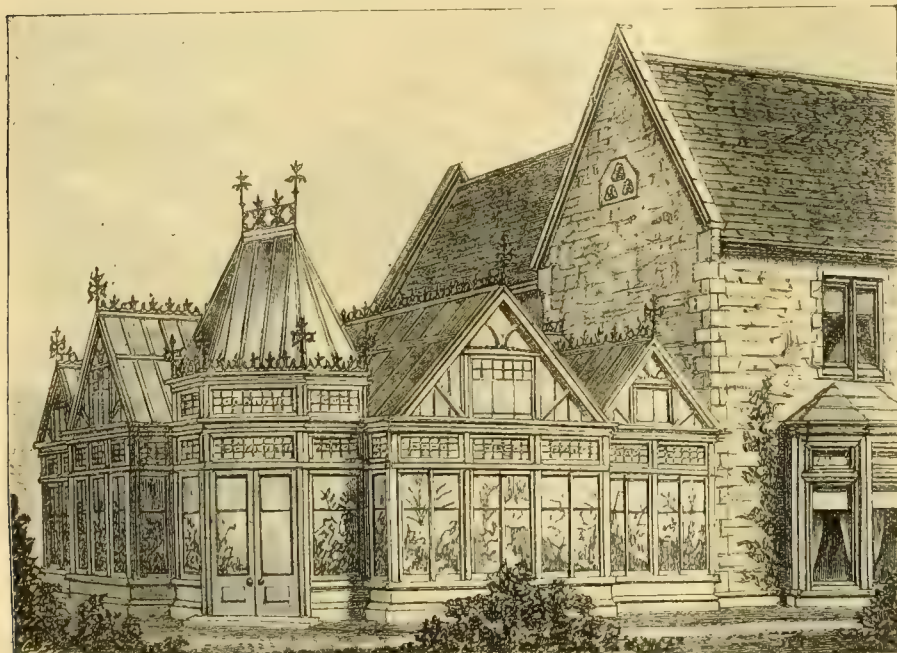
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 5, 1892.

OXFORD, AND ITS GARDENS.

I WENT to Oxford lately, not to look at its architecture, which I do not pretend to understand, but to look at its gardens, which I do. I was asked by a friend what I found in Oxford—were there any gardens there? And on my saying she possessed one of the oldest botanical gardens, he replied that he knew the kind of garden; such gardens made him sad. Certainly, some botanical gardens are not particularly exhilarating to horticulturists. Why? Is there any reason why a professedly botanical collection of plants should look worse than other collections?

The botanical gardens of Oxford belong to the University [in part, partly to Magdalen College, we believe], which ought certainly to take a pride in the possession of a garden founded over 260 years ago, and should spare no reasonable pains to make it as interesting and instructive as possible. To all appearance, they do nothing of the kind. If I point out defects, I will also offer some advice to that august body the university authorities—for they need both.

The gardens look their age. Five acres of ground, surrounded by a thick high wall, with a few little houses, a library, and a herbarium. They have grown very little since Bobart, their first Curator, presided over them. Most of the houses are venerable structures, with, no doubt, an interest for the antiquarian, but absolutely hopeless for the healthy cultivation even of a Pelargonium or a Coleus. The two or three small modern houses are better, but they are crowded with all kinds of plants, which might be able to look themselves if they had elbow-room.

Does the university require for teaching purposes a museum of living plants, representing the most interesting forms of vegetation? Surely, the answer must be—yes. If such a collection of plants has any value anywhere, it must be at a place where thousands of the country's most favoured sons are educated. It is not necessary in this place to urge upon all who have to do with education that a knowledge of the vegetable world is of primary importance, or that a botanical collection of living plants should form an important item in the equipment of a university.

A garden which served its purpose 200 years ago, when the science of botany was in its infancy, is scarcely likely to serve the present time. Instead, however, of containing a good well-managed representative collection of plants, it is crowded with all sorts of oddments, such as I suppose the Curator can beg or borrow; it is as badly equipped as it well can be, starved for funds, badly manned, and cramped inside those grim old walls.

Some one told me that there was a growing feeling among the "Dons" that the gardens are not worth maintaining. As they are now, possibly not, for

they are no credit to the scientific side of the university. They should be enlarged, enriched, and brought up to the times. Now, the sister university, Cambridge, which by the way I am told, is much poorer than Oxford, maintains a garden four times as large as that at Cambridge, and at least ten times better equipped in regard to houses, labour, &c. Cambridge has kept abreast of the times, and her botanical collection is not surpassed by that of any similar institution known to me. Oxford, meanwhile, has been asleep. There is plenty of space for the expansion of the garden, both beyond the river and into the Christchurch meadows. A new range of glass-houses should be erected, a rock garden made for the cultivation of choice herbaceous and alpine plants, and a proper arboretum started. The vegetation of the temperate regions is very poorly represented there now, and there is no room in the present houses for a respectable collection of tropical and subtropical plants. I daresay the present director or curator, or whatever he is, does the best he can under the circumstances. But the collections appear to be totally unworthy of Oxford University.

THE PARKS:—The park at Oxford, which was laid out and planted by the late curator of the botanical gardens, Mr. Baxter, and laid out well, is, or was, full of interesting trees and shrubs, many of which are now perishing for want of attention. The best constructed garden in the world will, in time, become a laughing stock if it be not carefully tended and kept in order by some one who understands it. The services of a good landscape gardener are now much needed in the Oxford Parks. Beautiful views and compositions are being shut out or spoiled by unchecked growth or misplaced trees; or worse still, by newly-planted ones. Some poor little Deodars, which have been planted in a bleak exposed field, tell a plain tale. God tempers the wind to the shorn lamb, but who will temper it to those poor Deodars? Why not plant Crotons there? Still, the park is a pleasant place, with its wide stretches of turf for cricket and football. It only requires a capable keeper.

COLLEGE GARDENS:—The college gardens have a beauty of their own—a beauty which owes much to architecture. St. John's Gardens were the most beautiful I saw. They are five acres in extent, and are said to "exhibit the results of centuries of careful cultivation." There are some good trees and shrubs, and some very poor ones—picturesque compositions, too; but there is need here, also, of the hand and eye of the garden-artist; here a tree requires lopping, there a group wants strengthening, and one or two recent additions want removing. That little caricature of a rockery, also, is out of place.

It is the same all over. The grand avenue of Elms in the Christchurch meadows wants the care of the tree doctor to save them from deadly fungi and overcrowding. The delightful walk along the Cherwell might be made still more delightful, if a few openings were made in the tree-belt here and there, to let in the pictures of spire and tower and tree. Everywhere there are beauties, architectural and sylvan, but that art which doth mend is needed to show them to advantage.

Such a town as Oxford requires the assistance of a thoroughly qualified landscape gardener, amateur or professional, who would watch over and make the most of the town, its buildings, and its gardens. Such a man would be able to make the town still more attractive even than it is now. It is unfortunate that so many people have the same view with regard to garden-making as to farming, namely, that every man can do it, if he likes. There are plenty of born farmers, perhaps, but there are not many who know instinctively how to make beautiful pictures out of trees, buildings, water, and grass. Oxford cannot learn this truth too soon. *Tradescantia*.

NEW OR NOTEWORTHY PLANTS.

MILTONIA CLOWESII GIGANTEA.

THIS is a very handsome and distinct form, which is now flowering in the collection of Major Mason, The Firs, Warwick. It differs so much from the

type as at first sight to suggest its being the result of a cross with some other species, but comparison shows that the essential characters are the same in both. The chief differences in the variety gigantea are that the spikes are shorter, the flowers larger, all the segments broader, and the sepals and petals obtuse, and not acuminate; in fact, more nearly resembling in form those of *M. candida*. The sepals and petals are of an Indian yellow tint, spotted with chestnut-brown, and they are purple coloured at the base. The labellum is very broad, purple coloured at the base, and of white, which with age changes to a sulphur-yellow, hue at the tip. *J. O'B.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT PARKFIELD, HALLOW.

ON making a recent visit to the above charming place near Worcester, I was not only struck with the beauty and general high keeping of the gardens, but with the very fine collection of Orchids, most of them large specimens of their kind. Amongst those in flower at that time were the lovely orange and crimson-lipped *Cattleya aurea*, the pearly-white petalled and ochry-yellow throated *C. Gaskelliana albena-odorata*; *Lælia elegans Turnerii*, with its lovely deep mauve petals, and violet-crimson lip. Splendid plants of *Vanda teres*, *V. Hookeriana*, and *V. cœrulea* were in flower, and the glorious *Dendrobium Phalaenopsis Sanderianum* was present in bloom in quantity. Others in bloom consisted of *Sobralia xantholeuca*, *Cycnoches chlorochilon*, *Odontoglossum grande*, *Vanda Kimballiana*, *Dendrobium formosum* and *D. Statterianum*, *Vanda Sanderiana*, *Lælia elegans Schilleriana*, *Epidendrum prismaticum*, *Masdevallia Harryana*, *M. Daviesii*, *M. Chimæra*, *M. caudata*, *M. Schlumieri*, *Lælia pumila*, &c. Mr. Catt also grows magnificent Pine-apples and other subjects. *J. Udale*.

VANDA CÆRULEA.

A photograph which has been sent us, as well as a fine spike of this handsome Orchid, show how successfully it must have been grown in T. W. Thornton, Esq.'s, garden, Brockhall, Weedon. The plant had several spikes, the largest of which had fourteen flowers, each $4\frac{1}{2}$ inches across. The intensely blue venation, the tinge on the segments of the flowers, and the bright violet colour of the lip, make it one of the most beautiful of Orchids; but while some persons grow it well and easily, like Mr. Thornton, others have but poor success with it.

SCHOMBURGKIA LYONSI.

This rare and handsome species is now in flower with Joseph Broome, Esq., High Sheriff of Carnarvonshire, at Sunny Hill, Llandudno. It has a large and elegantly-arranged head of flowers on a stout spike 3 feet in height. Each flower is borne on a foot-stalk about 4 inches in length, the broad-petalled flowers themselves being rather under 3 inches across. They are pure white, charmingly spotted, and marked with violet-tinted crimson. It is a grand Orchid, but seldom found true to name, the common *S. crispa* and other species being generally sold for it. An almost perfectly circular-flowered form of *Vanda Sanderiana* is in flower in the same gentleman's collection. *J. O'B.*

KEW NOTES.

GLADIOLUS OPPOSITIFLORUS.—This very interesting plant has lately been introduced to Kew, where it is now in flower in the Cape-house. It is the tallest species in the genus, the Kew specimens being 6 feet in height, very sturdy, the base as thick as a man's little finger, the lower $\frac{1}{4}$ feet clothed with thick, rigid, ensiform leaves, 2 feet long and $1\frac{1}{2}$ inch wide, prominently nerved, narrowed to a tapering point. The spike of flowers is 2 feet long, and there are ten flowers fully open on one spike, with sixteen more in bud. Each flower is $2\frac{1}{2}$ inches across, the segments 2 inches long, the three upper ones each $\frac{3}{4}$ inch wide,

the three lower $\frac{1}{2}$ inch wide, wavy, recurved, pure white with lines of deep amethyst on the three lower segments, and a tinge of the same colour at the base of all the segments. Another plant has a shorter spike, and flowers lined and shaded with rose; and a third shows a difference in the size and marking of the flowers. For the reintroduction of this plant, we are indebted to Professor MacOwan, who sent six corms of it to Kew last July. It was found growing in the Transkei, and is said not to be uncommon about the Kei River.

Herbert first described this species in Lindley's *Botanical Register*, 1842, where he says it was erroneously known in gardens as *G. floribundus*. He also says it was found in Madagascar by Forbes, who collected for the Horticultural Society, and that "it is also, perhaps, a native of Port Natal." But the chief interest in this plant lies in the fact that Herbert believed it to be one of the parents of *G. gandavensis*. He says:—"The *G. gandavensis* of gardens is a cross between *G. oppositiflorus* and *G. natalensis*; so also is *G. ramosus*, of gardens, between *G. oppositiflorus* and *G. cardinalis* or *cardinalis-blandus*." In his paper on "Hybridisation amongst Vegetables," *Journ. Hort. Soc.*, ii., p. 89, he says:—

"The showy *G. natalensis*, which endures more frost than any of the southern Gladioli, though it suffers much from July rains in many positions, has been freely crossed by myself, by Mr. Belfield, by Mr. Bidwill, and by cultivators on the Continent, with *G. oppositiflorus*, a Madagascar plant, found, perhaps, also in Caffraria, and often called improperly in the shops *floribundus*, an old name for a very different plant. The cross named *gandavensis* has been figured in the beautiful periodical work of M. Van Houtte, of Ghent. It is there stated erroneously to have been raised between *G. natalensis* and *G. cardinalis*. It flowered at Ghent for the first time in Europe . . . The cross erroneously stated to have been made between *G. natalensis* and *G. cardinalis* if not absolutely impossible, is so difficult, that repeated attempts made during successive years by myself and others have in all cases proved abortive."

On the other hand the raiser of *G. gandavensis*, Bedinghaus, says he obtained it by crossing *G. psittacensis* and *G. cardinalis*. This he did in 1837. Mr. Baker, of Kew, is also disposed to believe that Herbert was wrong.

It would be interesting if the cross which Herbert declares produced *G. gandavensis* could now again be made. If anyone has *G. natalensis* in flower, or likely to flower, he might send a plant or flowers of it to Kew. The exceptional height and vigour of *G. oppositiflorus* ought to commend it to the special notice of breeders of Gladioli. At the same time, it is a first-rate garden plant in itself. Herbert called it *oppositiflorus* from the flowers being arranged exactly in two rows, one on each side of the spike. Of course the flowers are alternate. A figure of the Kew plant has been prepared for the *Botanical Magazine*, *W. W.*

A TRAVELLER'S NOTES.

(Continued from p. 470.)

[On leaving Calcutta, Mr. Veitch proceeded to Rangoon, which presented little of horticultural interest. Mr. Veitch then went on to Penang, where he arrived on January 21, 1892.]

PENANG, JANUARY 21.—Early on the second day of my stay, we started to go up Government Hill on ponies. The base of the hill is close to the gate of the public gardens, and but a few hundred yards from Mr. Curtis' house. The ascent is very steep, and the height of the hill 2500 feet. On the summit is one of the Governor's houses, and a signal station for incoming and outgoing vessels. Near here Mr. Curtis has a vegetable garden, where he is tolerably successful with most things. Peas and dwarf Beans are fairly good, and Parsnips, Lettuce, and Onions are found to be best from acclimatised seed. Chinese Radish is grown, as is a Chinese Cabbage, from cuttings; it has no heart, and though not of first-rate quality, is yet valuable where so few vegetables are found.

A very handsome Conifer growing on the summit of this hill is *Dacrydium elatum*; it is of regular pyramidal form, and will grow from 20 to 30 feet.

Its foliage is thick, and of two forms, like a Juniper. *Podocarpus chinensis* also does well, as does *Grevillea robusta*, of which I saw some fine tall specimens planted but 2½ years ago. *Spathodea campanulata*, with large orange and scarlet cup-shaped flowers, was in bloom, and I had the satisfaction of seeing on the trunk of a tree a fertile frond of the true *Platycerium biforme*—a curious kidney-shaped structure, several inches in diameter. Mr. Curtis told me it was only a small example; when seen, which is not often, they are usually much bigger.

Perak. Near the house is a nice row of *Juniperus virginiana*, growing freely.

The highest point in the island is only two miles from Government Hill—it is 2750 feet high.

Descending the hill on foot, for it is too steep to ride, one passes the new Sanitarium, a strong, granite-built house, for the use of Government officers. Many other bungalows are also dotted about the hill. A curious Myrtaceous plant, much resembling a *Casuarina*, *Bækia frutescens*, grows near the top of the hill; it is as unlike a Myrtacea as anything well

is also used for this purpose. *Mimosa pudica* is here, as in Ceylon, a most tiresome weed, almost impossible to eradicate; it is pretty abundant on Government Hill. The most interesting of all to me was the thick undergrowth of *Gleichenias*—*flagellaris*, *dichotoma*, and *longissima*—the latter not so common as the two former. They all grow with great luxuriance, and form magnificent leaves, those of *longissima* being many feet long. In every direction up the sides of the hills there is a thick carpet of these handsome plants.

I also saw many specimens of *Dipteris* (*Polypodium*) *Horsfieldii*. It produces its large round leaves in shade high up in the hills—it is a most striking picture.

At an elevation of 2000 feet, Mr. Curtis has constructed on the side of a hill an experimental garden for native and introduced fruits. It was commenced in 1885, but Mr. Curtis does not consider it has yet had a sufficient trial to speak about results. He finds, however, English fruits will be of no value—a result that one can scarcely be surprised at.

Round this garden and alongside the road is a hedge of *Bambusa nana*—forming a very thick and useful boundary mark. This and *Pithecolobium dulce* are the two finest hedge plants in the island.

Areca palms—*Areca Catechu*—with their tall thin stems and small tufts of leaves, are most common; from time to time we met a Chinaman cutting down the bunches of large red seeds for chewing purposes. A hooked blade at the end of a long Bamboo is the means employed. Durians, Mangosteens, Cloves, Nutmegs, and Cocoa-nuts, also are very numerous.

Of the two latter, we saw large plantations. The Nutmeg is really most ornamental, with its large thick, rich green foliage; the head is regular and pyramidal. A few Mangoes are to be seen, but not the quantity one sees in certain parts of India; and Bread-fruit—but not always the best variety—the well-known seedless variety of the Malaccas. Pine-apples, escaped from cultivation, are common, often hanging over the path from some rock above.

In descending we made our way through the Azer-etam Valley to the village of the same name, from whence we took a "gharry" back to the gardens. Looking at this valley, enclosed on all sides by the hills, was a pretty picture; all one saw were acres of the wavy heads of Cocoa-nuts, cultivated for commercial purposes by Chinese, whilst on one side up the hill to the forest boundary were plantations of Spices, broken here and there by masses of jungle intermixed with the tall stems of the Betel-nut (*Areca Catechu*) and other trees.

This forest boundary, under Mr. Curtis' charge requires a little explanation. It is a large portion of the island on the summit of the hills, which the Government has taken, and in which they refuse to allow anything to be cut. Before this was done, enterprising planters, chiefly Chinamen, kept on cutting down jungle, always pushing still higher and higher up the hills, for their Spice groves, until there was danger of the rainfall of the island being affected. Within what is known as the forest boundary, no one may now cut down a tree, and enforcing this rule gives Mr. Curtis on the average one prosecution a week.

He has occasionally to make tours through these woods, and has at certain points watchmen to inform him of any too-enterprising planter. Driving home from the foot of the hill, we passed through groves of Cocoa-nuts as rich and as numerous as in Ceylon. The heat is very great—it is now the hottest season, but the coolest at night—rain is much wanted for the vegetation; but there is no danger of water failing for the inhabitants, as the island possesses a magnificent unfailing water supply, doubtless owing to its hilly character. *J. H. Veitch.*

(To be continued.)

CHRYSANTHEMUM JOTTINGS.

(Continued from p. 538.)

CHRYSANTHEMUMS AT LEWISHAM.—Many persons might wander over this south-eastern suburb of London, and have a difficulty in finding Mr. H. J. Jones' wonderfully fine show of Chrysanthemums; or, if fortunate enough to find it, would regard it as inconceivable that so brilliant a show of flowers could be found within the purlieus of smoky London. How much do town dwellers owe to the Chrysanthemum for its remarkable capacity to produce beautiful flower shows, such as is this one at Lewisham at so gloomy a time of the year as is November! The



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FIG. 84.—A PLANT OF NEPENTHES RAFFLESIANA. (SEE P. 561.)

From the summit of the hill one can see across to Province Wellesley on the mainland, with Kedah and Perak in the distance. The former, an English possession, is a fertile stretch of land, chiefly under Tapioca, Sugar-Cane, and Cocoa-nut cultivation. Some of the estates are very large, employing 2000 coolies. In Perak much Coffee is successfully grown, but the climate is bad. I met one man who recently lost 100 coolies out of 500. He himself is ill, and has just been ordered home.

Turning from the top of the hill to descend, we passed a little thatched house where Mr. Curtis keeps a few plants for the Governor's use. He has there some fine *Phaius grandifolius*, collected in

can be. Tea Roses grow well, but hybrid perpetuals are rather failures. The vegetation on the hill is very rich; great trees with tall, straight stems are common. The most important order, both for commercial value and on account of numbers, is the *Dipterocarpeæ*. Some of the trees belonging to this order are magnificent. Many *Eugenia*s are also to be seen.

A common Palm on the hill, as well as in the tidal swamps along the coast, is *Eugeissonia tristis*. It is stemless, all its straight Kentia-like leaves springing from the base. It is of great economic value in the island, its split leaf-stalks as well as its dried leaflets being extensively used for thatching. *Nipa fruticans*

day of my visit was a wretchedly wet one, and whilst without all was misery and dirt, it was indeed a change like to a scene in a fairy play to suddenly turn from the external damp and smoke into the pure bright atmosphere of Mr. Jones' fine show-house, and there see what is, I really think, without exception, one of the finest Chrysanthemum shows to be found anywhere in the kingdom.

The chief show-house is 103 feet by 25 feet, a light and fairly high span; an alley runs through the centre, and on either side are ranged, eleven rows deep, some 1250 plants, none very tall, but all in good-sized pots, in robust health, and blooming, or about to bloom, superbly. Overhead there is strained a sheet of tiffany, which, whilst catching and retaining until dried, the moisture which usually settles so freely on the glass roof, and then drips on to the flowers—this prevents incalculable harm being done by drip. It also checks the cold force of the down draught from the top ventilators, which are freely open, and whilst softening the air, also distributes it equally all over the house. Still farther, this tiffany-screen very materially interposes for the collection of blacks—the terror of Chrysanthemum growers in towns; so that serving such diverse useful purposes, its value can hardly be too widely known. As an ordinary trade grower, Mr. Jones, of course, has stock of all possible varieties, but equally, as an enterprising one, he has to keep pace with the exacting requirements of the times for novelties, hence his collection is very rich in these, and about the middle of November—for here as elsewhere, all Chrysanthemums are rather late—growers will have as good an opportunity as perhaps can be found anywhere to become familiar with the best of the new ones. Of varieties that made great reputation last year, Vivand Morel, Wm. Tricker, W. H. Lincoln, M. R. Bahuant, Louis Bœhmer, and many others that are legion. Of new ones there is legion also. Very noticeable, for instance, is a white form of Louis Bœhmer, that will supersede Mrs. Alpheus Hardy, because it has all the robust character of its originator. Then a grand flower, and not unlikely to be the premier flower of the season, is Colonel W. Smith, colour, chestnut shaded red; petals somewhat incurved; a very large and massive flower. Mrs. Harman Payne is another very fine French variety; colour, deep rose; petals incurved. T. H. Dennis is a grand loose flower, style of E. Molyneux, and somewhat in colour, but promises to be a broader flower. President Carnot is like M. R. Bahuant, but has more gold on the reverse of the petals. Unfortunately most of my notes on novelties have unaccountably disappeared, and in consequence my advice to all who want to see a first-class display of new sorts is to go to Lewisham, for Hither Green is not more than a mile from the Junction station. In a second large span house there is a huge batch of later bloomers, also a grand lot of show Pelargonium specimens, Chinese Primroses, and various other things, and in another house a brilliant display of zonal Pelargoniums in full bloom. *A. D.*

VICTORIA PARK.

It is now twenty-eight years since the first exhibition of Chrysanthemums was held here, and one is always sure of seeing a display worthy of so long a history. This year the plants are wonderfully fresh and healthy, the flowers large and charming, whilst the foliage is green and robust. In the span-roofed house, that has been used for this kind of display for some years past, Mr. Gibson has, under the charge of Mr. Large, about 3000 plants, and these are arranged in sloping groups on either side, with a wide path running down the centre. The show was opened on the 22nd ult., and is not yet at its best, perhaps because the atmosphere is more moist in this vicinity than in other parts, which will result in the wood taking more time to ripen. A few new varieties have been added to the collection, but, on the whole, the old tried varieties have been relied upon to a large extent. The new incurved M. R. Bahuant was remarkably fine, and the peculiar

green-coloured Florence Davis is looking as well as we have seen it. W. Tricker is a new rose-coloured Japanese, slightly incurved, and, judging it from the specimens observed here, it is of good promise. By far the largest bloom of Mrs. A. Hardy that we have noticed was just passing its best, which was to be regretted, for had it been in good condition about ten days later, many hundreds of people would have had an opportunity of seeing it. The other flowers of the same kind are good, but not of special interest. Louis Bœhmer is much more easily managed than its white relative. A plant of Edouard Audiguier, that had been cut back in May, had three very fine blooms upon it, and being dwarf, it would be most useful.

Some plants of Stanstead Surprise once more exhibit the wonderful different blooms that are obtained from crown buds, and from terminal ones. A plant, where the crown buds had been "taken," had produced good-sized blooms, which were nearly white, only a slight marking of rose or pink being present, whilst the other carried flowers, from terminal buds, of a rich crimson. Mr. W. K. Woodcock appears to be a useful and pretty Japanese variety; it is new. Mr. J. Laing was doing well, and its crimson blooms looked exceedingly handsome. An old acquaintance was there in Old Chang, and quite justified its position. Mrs. F. Jameson was remarkably good, and in passing we may observe that it should be found in every collection. Others are in excellent form, but readers will do wisely if they go and see for themselves, remembering also that it is some distance from the station called Victoria Park—Cambridge Heath Station, on the Great Eastern Railway, is much nearer.

MR. W. WELLS'S NURSERY AT EARLSWOOD.

About a mile and a half from Redhill Station, and adjoining that of Earlswood, on the London and Brighton Railway, is the Chrysanthemum nursery belonging to Mr. W. Wells. Some 400 or 500 varieties are to be seen here, but many of these were not in flower at the time of our visit. The plants all look healthy and vigorous, and the wood appears fairly well ripe, notwithstanding that—as is common in most places—such a number have been grown that it has been impossible to give each that amount of space during the later summer months that they ought to have. In the range for large blooms, resulting in the tall—and not too presentable—plants that are everywhere met with, it is a relief to meet a grower like Mr. Wells, who maintains a decided love for the Pompons, and especially for the single varieties. A fair collection in each of these groups are here to be seen, and some of them having been grown without any disbudding are beautiful and exceedingly decorative objects. Miss Mary Anderson is known to most persons having any pretence to Chrysanthemum knowledge as being a beautiful white single, wonderfully adaptable for most kinds of decorative purposes. Scarlet Gem is also a very pretty bright variety of good habit, and very free flowering. May Wells, a seedling raised here from Miss Mary Anderson and Scarlet Gem, is a deep crimson scarlet, that cannot fail to please anyone interested in this section. All the single varieties are best on the late buds, and when they have not been disbudded. A large number of seedlings in this section and in that of the Pompon will be named and sent out next spring. Of the usual large-flowering varieties, there is also an extensive and choice assortment, including a rich group of the newest varieties. Mr. Jno. Lambert was in good form, and Stanstead White looked charming, but the large and lovely rose-coloured Wm. Tricker will soon be a most popular favourite. Its colour is so pleasing, and its form is good. Coronet, an improvement on Thunberg, is a new Japanese of richest golden-orange. The appearance of the flowers is a little careless, the centre petals are slightly incurved, and the outer ones reflexed. It is large and handsome. G. C. Schwabe, a seedling from E. Molyneux, is a Japanese of large size, described as of good colour—carmine-rose, with gold centre—but not perfectly out at

present; it may be valuable. La Chirire is a very fine golden-yellow Japanese, of canary-yellow, and is said to do very well, if treated on the pinching method. A seedling incurved, somewhat like Jeanne d'Arc, but of purest white, may prove to be of first-rate importance under good culture the second year. Mrs. Nisbet is a very pretty Japanese, reflexed variety, of purple-amaranth, with silver reverse, but it requires to have the wood thoroughly well ripened. A variety of the Mrs. Alpheus Hardy type deserves notice, if only on account of the cumbersome name to which it has been attached. Marchese Bardo Corsi Salviati, should be sufficient introduction for anybody; it has long broad petals, white, with cream centre, reverse of petals light rose. The plant is of strong habit, and—one need hardly remark—of Italian origin.

Mr. W. Wells believes that he has fixed a white sport of Vivand Morel, and has already presented it before the committee of the National Society, but at present no award has been secured. The plants are growing side by side with the others, and have been propagated from the white sport of last year. To an ordinary visitor the sport appears to be quite fixed, and if such should prove to be the case, the acquisition will be a very rich one indeed.

MR. GEO. STEVEN'S NURSERY AT PUTNEY.

Mr. Steven's plants look well at St. John's Nursery, and he thinks he never had a finer lot; but, situated so close to the river as he is, one cannot say how he will fare when he has to take his plants to the Aquarium to take his place among the competitors for the group. Anyhow, we were given to understand that, if the fogs are not too unmerciful, that he would be there. There are not many new varieties here, and Pompons and single forms are almost excluded. A very great number of Japanese are grown for furnishing blooms for market, and for this purpose one could notice as many as three hundred plants of Ed. Molyneux, a like number of W. H. Lincoln, and large batches of later stuff, including a good lot of Ethel. A good October-flowering Japanese was there in Gorgeous, a decided improvement on Peter the Great. Sunflower, a new loose-looking Japanese that one can hardly praise too highly, was carrying good blooms, as was also the velvety crimson Jeanne Delaux. The incurved varieties had hardly begun to open when these notes were taken, but some thoroughly plump buds of good size promised much. These were Lord Alcester, Golden Empress of India, Empress of India, and Mr. John Lambert. Altogether, there were about three thousand plants in this well-known "mum" establishment, and their care is evidently the subject of Mr. Steven's closest attention.

MESSRS. PITCHER & MANDA'S NURSERY.

At the United States Nursery, situate at Hextable, near Swanley, Kent, we found a good display of many of the new varieties. The space at command here precludes the possibility of growing a very large number of plants, hence a few only of a variety are allowed. Consequent upon good culture, the plants present a healthy appearance, and many of the blooms are larger than have been noticed of the same varieties in many places. The grower here has subjected untried varieties to treatment in exceedingly small pots; many of the newer and less known of them we found in 6-inch and 7-inch pots, bearing one bloom in most cases, and with foliage clothed to the bottom. It was surprising what good flowers were so produced; but it is also argued, that if a variety will succeed with such treatment, and produce good bloom, no fear may be entertained when, another season, it is allowed a more liberal treatment. Of course, at this establishment the effort has always been to secure "hairy" ones, after the manner of Mrs. Alpheus Hardy, and a great number of such are now to be seen here. W. A. Manda, which secured a First-class Certificate at the National Chrysanthemum Society last week, is a rare acquisition. In colour, a fine yellow, and its petals quite hairy; it will be very popular among the hairy Japanese. Miss Anne Manda is recom-

mended as an improvement upon Mrs. Alpheus Hardy; in colour and character it much resembles that variety, but is said to be a better-built flower, and of stronger constitution. George Savage is an incurved white, and a seedling from Mrs. Alpheus Hardy; with a greenish centre, and a few hairs at tip of petals, it may become a good thing. Several seedlings, at present unnamed, also promise much, especially two that we noticed, being good in colour, and quite characteristic of the group. A bronze hairy one is supplied in H. Ballantine, a Japanese, which will be popular with some people.

Of the smooth kinds, particularly noticeable were Robert Flowerday, a good and distinct Japanese, with broad petals; the colour is crimson-purple, with silver reversed margins, and the tip of petals are green. The Tribune, which will be sent out next spring, and is a large primrose-coloured Japanese, very full, and broad-petalled; Primrose League, a little like Florence Davis, but the green colour in which it opens turns to primrose rather than white; it is also larger, and more easily done. Florence Davis was here in good form, and W. H. Lincoln had especially large flowers, but those of Col. W. B. Smith were the finest we had seen. Mrs. E. D. Adams is a large Japanese with very long petals, and good white. The variety that we mention last is Geo. W. Childs, which obtained the Gold Medal last year for the best seedling, offered by J. R. Pitcher, Esq., in America. It is a large, massive flower, reflexed, and of broad petals; colour, a rich velvety-crimson, with no other shade observable. It is certainly a handsome variety, and of the most popular of colours.

MESSES. CANNELL & SONS, SWANLEY.

Here are Chrysanthemums in endless variety, and most of them new. In one large span-roofed house there are about 3000 in 500 varieties, and this number represents the amount of new ones possessed by the firm. Altogether, new and old, there are something like 1200 varieties, and yet these are so far distinct, as to be recognised by one who is constantly among them. The plants are so far like other collections, in that they are a little later than usual, and that they already feel the injurious effect of the damp weather that has lately obtained. Bright, however, is the display, and a brighter one is promised by the immense plump buds that may be seen on most of the plants, which are well-furnished with bold strong foliage. The first noticed was Golden Ball, a new Japanese yellow, with full centre, not large, but very fine. This received an Award of Merit at the meeting of the Royal Horticultural Society on Tuesday last. Ethel Paul, a white Japanese from America last year, in its first appearance is like Avalanche, but finishes up a complete snowball. A first-rate variety is Mrs. H. W. Goulden, a new incurved. Its colour is exceeding pale lilac, very delicate; the petals are large and broad. Delaware is in fine form, and this new Anemone-flowered is a valuable variety. Ida Longhi is a new Japanese, large-flowered and curious; has the appearance of being striped, white and rose. Some immense blooms of the large white Japanese of last year, Mdle. Marie Recoura were noticed. It has very long petals, and a somewhat loose appearance. Messrs. Cannell have a very large stock of that excellent Japanese, Colonel W. B. Smith, bearing some good flowers of great substance. A very pretty and delicate variety is Harry Balsley; it has long and broad petals, and the colour is very pale flesh, and promises to become a handsome thing. A new Japanese, of continental origin, is Ernest Verdert, and promises to be extremely useful for growing in small pots and for decoration. In colour it is a good crimson, very like Jeanne Delaux. Julius Roehrs looks as if it may become as large as a Cabbage; at present it is not fairly out. Here were some good blooms of Geo. Wm. Childs, the lovely gorgeous Japanese; Vice-President Calvat is another new one of merit, a Japanese, it has broad petals of crimson-red, with gold reverse. Mr. Cannell hopes great things from

a very fine Japanese called Beauté Toulousienne. It is velvety-crimson, with gold reverse, something like Wm. Holmes; it is a great improvement on that variety, being much better in colour, and the gold reverse very much more distinct. We have not space to refer to other novelties at this establishment, but may say that already Mr. Cannell has got some thousands of cuttings in small pots, and propagation is going on as rapidly as possible in a well-appointed nursery.

FORESTRY.

PLANTING, AND CHOICE OF PLANTS.

PRACTICAL experience and observation tell us that there is a close connection between trees and the class of soil in which they delight to grow, and as plantations of any great extent generally contain a variety of soils, the planter should exercise his judgment in the selection of his trees by planting each kind on the class of soil, and situation, most conducive to their requirements. Good loamy soil of a loose open texture will grow hardwood and coniferous trees, either mixed or in masses. Thin, warm soil of a calcareous nature is best adapted for Beech, Birch, and others, as well as for hardy evergreen coniferous trees; loose open ground, with a small mixture of clay and organic matter, is suitable for the Larch and others; stiff clay soil is best adapted for the Oak, and although this is not a Larch soil, yet it will grow that tree to a useful and profitable size, so that it may be planted among the Oaks as a nurse, and to be cut out in the course of thinning, to give space for the Oak as the principal crop. The Oak dips its roots deeply into the subsoil in search of food, while the Larch spreads its roots principally along the surface, so that both trees can be grown during the early stages of their existence in the same plantation with advantage. On bare exposed situations it is a good plan where the ground is suitable for the Oak to plant Scotch Fir and other hardy Pines a few years in advance of the Oaks, for although the Oak is a hardy native tree, yet it is vastly improved in early life by shelter. When this plan is adopted, the pits for the Oaks may be dug at the time of planting the Firs, leaving the stuff excavated in a rough lumpy state on the edge of the hole, so that it may become pulverised by the weather, and the fertility increased by exposure. J. B. Webster.

ROUND BIRMINGHAM.

(Continued from p. 525.)

THE UPLANDS, SELLY HILL, is the residence of Charles Winn, Esq., an enthusiastic amateur, especially fond of Orchids, and is pleasantly situated. A pretty, although not extensive, garden surrounds the house. Conducted to the Orchid-houses by the amiable owner, we found that the species and hybrids of *Cypripedium* formed a leading feature of the collection, upon which much care in cultivation is bestowed, and in making new crosses, several of which have proved to be valuable additions to the genus, notably the handsome *Cypripedium Winnianum* × (*villosum* × *Druryi*); the pretty *C. Edith Winn* × (*Stonei* × *purpuratum*); and the dark and richly-coloured *C. Cleopatra* × (*œnanthum* × *Hookeræ*). Other promising crosses of *Cypripediums* made at the Uplands are approaching the size and age at which they will flower; and in other genera intelligent cross-fertilisation and careful culture of the plants after raising are about to have their reward.

Among those that may soon be seen in bloom are two very remarkable crosses, viz., *Cymbidium Mastersii* × *C. giganteum*, and *C. eburneum* × *C. giganteum*, both of which should certainly be handsome novelties. (See Report of the Orchid Committee, p. 566.) Other crosses of *Cymbidium* are coming on well, and the plants of the pretty *Dendrobium Nestor* × and *D. Aspasia* × have flowered, the former displaying a very curious variability in the growth of the several plants, some being pendent from the first, while others go up erect until the weight of the pseudobulbs bends them over.

Cypripedium Harrisianum × *C. Sanderianum* is

another hybrid of which much is expected, and the plants of the so-called *Thunia Bensoniæ*, Winn's variety, exhibit still more beautiful flowers than those on the plant shown at the Royal Horticultural Society when it first opened. In growth it is stouter, and in stature taller than *T. Bensoniæ*, although the cross has apparently only affected the flowers in relation to that species, in size and richness of colour, Mr. Winn's hybrid being far the better.

Of other hybrids, chiefly *Dendrobiums*, Mr. F. Oliver, the gardener, took down from the rafters of the house where they were suspended, many other remarkable crosses; but as they will doubtless be recorded as soon as they flower, it is not necessary to enumerate them here. In the *Cypripedium*-house we found a fine collection in robust health and large, some of the handsomest, such as *C. Morganæ*, plants of great size. A number of varieties of *C. Harrisianum* were in flower, of which *C. H. splendens*, *C. H. giganteum*, and *C. H. nigrum* were the largest and most distinct. The forms of *C. Ashburtoniæ* also displayed a good deal of variety; and of *C. callosum* and *C. Curtisii*, which are noble species when grown as at The Uplands, many were in bloom. Others noteworthy, either by their fine growth or the beauty of their flowers, were *C. grande atratum* ×, *C. Spicerianum*, of which there were many plants; the quaint and pretty *C. Chamberlainianum*, *C. Ainsworthii* ×, *C. Crossianum superbum* ×, *C. leucorrhodum* ×, *C. Doris* ×, *C. Lawrenceanum*, *C. cardinale* ×, the varieties of *C. insigne* and of that favourite, *C. œnanthum*, which has few equals in its section. Here, too, we observed that charming variety, *C. Aylingi* × (the original plant), *C. vexillarium* ×, *C. Niobe* ×, and others of the *Fairrieanum* crosses, among which an indifferent one is not likely to appear.

The long *Masdevallia*-house was next in importance, and here are found most of the handsome forms in the best of health, a few being in flower, and the *Harryana* section promising a great show in due season. Overhead were suspended those plants which belong to the *Chimæra* division, among them several forms of *M. Chimæra*; and of *M. bella* and *M. Roelzii* in bloom. Here, too, was observed a plant of the true *M. Winniana*, which originated at the Uplands; and it needs but a glance to estimate its superiority to the rest of its class. Its massive flowers are almost wholly of a peculiar shade of crimson; and the tails of the segments are 6 inches long—truly a remarkable flower, and one which compels admiration.

Passing through some intermediate-houses we found a collection of sturdy *Cattleyas* and *Lælias*, of which the *L. purpurata* and the white and coloured *L. anceps*, were especially good. One mass of *Cattleya Lawrenceana* is the largest and best we have seen of that species; and among the plants of *C. Mendelii* and *C. Trianae* are some with remarkable growths.

In the *Odontoglossum*-house the same standard of excellence was found; but, of course, little bloom. In other houses, *Dendrobium nobile* in variety was found, including *D. n. nobiliss*, *D. n. Cooksonii*, *D. n. album*, and *D. n. Sanderianum*, which latter, if true to name and grown well, is a massive and beautiful variety. *D. Venus* ×, *D. Cassiope* ×, and *D. Phalanopsis Schroderianum* are highly spoken of.

We noted among other good things a fine lot of *Coelogynes*, a number of plants of well-grown *Calanthes*, principally hybrids, of which some have not yet flowered; *Epidendrum Wallisii*, in flower; and some pans full of pretty *Pleiones*.

The ventilation of the houses has received much study, and Mr. Winn says that it has played an important part in keeping his plants in good condition. A most noteworthy arrangement is the ventilator made use of for affording what is called "bottom ventilation," just above the ground line, and on which so much seems to depend in Orchid culture. All kinds of make-shifts are seen in different establishments, and in all of them, whether of wood, slate, or the sliding iron gratings sometimes seen, it is only a question of time as to when they

become difficult to work or useless. The simple iron traps in use at the Uplands can be regulated easily and to a nicety, and they are practically indestructible. Their adoption generally, would supply a want that is greatly lacking in Orchid-houses as at present fitted.

HINTS ON EXHIBITING CHRYSANTHEMUMS.

THOSE persons who have not had much experience in exhibiting cut blooms of Chrysanthemums may, perhaps, be glad of a little advice. I find that in the majority of cases cultivators of the flower become desirous, in the course of time, to figure as exhibitors, whether it be the amateur with his two dozen plants, or the gardener with his hundreds; and, nowadays, it is considered to be necessary to count the plants grown for large blooms by the hundred, and in some instances by the thousand. All this is a sign that, in spite of some opinions to the contrary, the cultivation of the Chrysanthemum is increasing.

The aim of the beginner in exhibiting, is to manage his plants in such a manner that each bloom is perfect in its variety, and the latter must be of the best, for it is useless to expect to win prizes with varieties that are inferior, or not up to the present-day standard, no matter what individual fancy or predilection may dictate. As an instance of this, a well-grown bloom of Elaine would not be reckoned superior to an equally well-grown one of Avalanche; neither would a bloom of Baron de Prailley be put as the equal of Vivand Morel; and the same holds good of incurved varieties. A typical specimen of the Rundle section would be quite lost beside a Queen, no matter how perfect the former may be. The larger flower if equalling the other in symmetry must stand first. This method of convincing a beginner of the absolute need of growing only the best varieties in the best manner might be much enlarged upon, but my readers will find the foregoing remarks sufficient for the purpose. As pointed out on p. 460, great care must be exercised in preventing damp injuring the flowers. The blooms as they expand must be constantly watched by day, to make certain that they will be neither too early nor too late for showing at a certain date, as much will depend on their condition as to freshness and development when brought to the show, lack of freshness being, perhaps, the worse condition, costing several points in a competition. If the blooms show signs of being fit too early, the plants must be removed to cooler quarters, and closely shaded from the sun. A dry shed, room, or even the Mushroom-house may be utilised to retard them a little. It is useless to cut any bloom longer than six or eight days, at the outside, before they are required, because they will not keep longer than that; on the contrary, those plants which are not sufficiently forward, must be hastened by a gentle warmth. Want of evenness in a stand of blooms is a defect to be avoided very carefully. By night an exhibitor must keep a look-out for injurious insects, of which there are many species, the worst being the earwig, which secretes itself during the day-time, and feeds on the tender petals by night. Traps made of pieces of Bean-stalks, and pots filled with hay or dry moss, are of great use against the earwig, and the insect should be searched for by lamplight.

The exhibitor of show blooms must be provided with boxes and stand, cups and tubes, the former to hold water, so as to maintain the flowers in fresh condition for several days, the latter to show the blooms off to the best advantage. It is well to have two sizes of the latter for incurved and Japanese blooms alike. There are many ways now of having the tubes made; the best is that which admits of the flower being raised to any desired height without lifting it out of the water. This is the great and a serious objection to many methods now in vogue of making cups and tubes; and those which diminish the water-supply in the slightest degree should not be bought, because the flowers have but a small quantity of water wherewith to keep fresh, on account of the thickness of

the stalk occupying so much of the space in the tube. It may happen that to give proper effect to some one bloom in a stand, it requires to be raised to the full height allowed by the tube, and if the bloom is raised independently of the cup, how can it remain fresh in a heated room for twelve hours, or a longer period? The method which admits of raising both cup and tube at the same time, whether it be the Walker clip or the Jameson spring, matters little, as long as the end in view is gained.

A simple plan, which I adopted a few years since, and which answers very well, is to make clips from common crinoline-steel, half an inch in width; pieces 3 inches long, are cut off, and half-an-inch at one end is bent at a right angle. Four such pieces are required for each hole, they are fastened to the lower side of the stand forming a square round the hole, and being placed in such a manner that when the cup is thrust into the hole in the stand, the four bits of steel clip the cup firmly, either when thrust down to its full depth, or when its end only is inserted. This is a simple method of raising the cups and holding the blooms firm whilst travelling. The pieces of steel are easily fixed with tin-tacks to the stand, or small screws may be used instead. Tubes and cups are made of tin, wood, and zinc; the latter are the best, for they will last a lifetime, and do not rust.

There is some amount of confusion amongst exhibitors as to the names of cups and tubes; some call the article which holds the bloom in position, the cup, from its being cup-shaped, but in reality, this is the tube. I mention this, so that no misunderstanding as to the measurements of each may arise.

As before remarked, the tubes should be made of two sizes—at least, the funnel should be; the stems of each tube ought to be equal in length and diameter, as they should fit nicely into the cup which holds the water. The orthodox size is 2 inches in diameter, and 1 inch deep in the flange; a few of larger size should be provided, as they are useful in displaying large blooms of any kind; these ought to be 3½ inches in diameter, and 1½ inches deep in the flange. The stem should be made 2½ inches long, and of a diameter that will slide into the cup, which is 1 inch in diameter, and 3 or 4 inches long. At the top of each cup there should be a flange one-eighth of an inch broad turned over horizontally. This prevents the cap swaying to and fro when travelling.

Exhibitors should provide themselves with tweezers for dressing the blooms; opinions differ as to which is the best kind, some prefer those made of ivory or bone, but in my opinion those made of steel are the best. The smallest size is 3 inches long and one quarter of an inch wide in the middle; the mouth or points very narrow, just the point rounded off—those are used for finishing off a bloom for exhibition. The next or middle size is 5 inches long, and five-eighths of an inch wide at the rough part in the middle, which is made to allow of a firm grip being had of them, the square points are useful for removing seed-vessels or decayed petals. The largest size is 8 inches long, half an inch wide in the middle, tapering to the points, very useful in regulating the florets of Japanese blooms.

Having explained at some length, perhaps, the necessary appliances with which an exhibitor must be furnished, I will say a few words about the blooms, pointing out the necessary requirements in each section, as a guide to beginners in selecting the competing blooms. At the outset, I would say it is a mistake for any exhibitor—experienced or otherwise—to attempt more than the material at hand will allow in the matter of competition. It is much more creditable to win a first prize in a class for twelve blooms than to enter a class for double that number and to be awarded, perhaps, a third prize. As a guide in selection, I will point out the requirements of each kind of bloom, beginning with the incurved varieties. It is a fault found amongst younger men (and some old ones, too) to imagine that mere size is the one thing to be attained. I grant that size of bloom is the first object a cultivator should have in view, but it must be accompanied by other good points before the bloom will rank as a first-rate specimen. The

three leading points in an incurved bloom are depth, solidity, and colour; and it will generally be noticed that where one of these is present, the others are there also. Solidity is an essential point. An experienced judge knows at once when he sees flowers which are not solid, as the florets do not lay evenly over each other. Although breadth of floret is a point to be aimed at, it should be accompanied with smoothness and regularity, and a trace of coarseness is detrimental. I think, though, that breadth of petal is due more to natural causes, such as the nature of the soil in which the plants are growing, and also to the damp atmosphere in which the cultivator resides. Low-lying districts produce greater breadth in the petals than a higher or dryer one. Blooms of any particular variety—for instance, Empress of India—which are not very broad in the petals, are often more solid than those which have florets of greater breadth, these, through their extra size, not being bedded so closely as are the narrower-petalled ones. The diameter of a dressed representative bloom of the Queen type should not be less than 5 inches, nor its depth less than 3 inches. Blooms are often larger than this, but the size given may be said to indicate a good average specimen. A smaller type of flower is represented by Princess Teck, which possesses much solidity of petal; when in good condition, 4 inches in diameter, and 2½ inches deep, is a good size for this variety. Freshness is a point which carries perhaps more weight than any other with good judges. A want of freshness can be detected at once, and shows itself first round the bottom petals. Good colour should in all varieties receive attention, particularly in the lilacs, pinks, maroons, and bronzes, and the yellows, which should be clear. A dirty white shows a want of freshness, except in cases where the cultivator resides near a smoky or foggy town.

In the Japanese section the blooms are so variable in form that greater scope is afforded for individual taste in selection. Varieties of the Vivand Morel, A. H. Neve, W. W. Coles, or Avalanche type, are undoubtedly those to be preferred, combining as they do all the qualities of a good bloom without coarseness or thinness; the blooms, when well grown, are large enough in diameter, proportionate in depth, the florets reflexing, with a gentle inclination to droop at the points—in fact, blooms of any of those named can fairly lay claim to being the *beau ideal* of the Japanese race of flowers. A bloom of Avalanche, measuring anything over 7 inches in diameter and 5 inches deep, is good; while the first-named, at 8 inches by 6 inches, is equally so.

Arranging the blooms in the stands next demands attention. That there is a right and a wrong way of doing this is exemplified at almost any show. A common error which tyros fall into, is that of "flopping," as it were, the blooms down on the stands much too low, which is caused by their being cut with much too short a stalk, thus the florets rest on the board itself, and they are dwarfed considerably in appearance. The stem should be cut 1 inch longer than the tube, which will allow for that amount of elevation above the show-board. If the blooms are placed too high in the stands, they have an ungainly look; and there is a certain height at which they look best, and that is when a clear space is shown between the board and the lower florets, no matter how small, in the case of varieties with drooping florets; and where those with horizontal florets are employed, a space at least 2 inches in height should be seen beneath the flowers. In the case of incurved blooms, the back row—generally consisting of the Queen type of blooms—should be elevated 1½ inch above the stand, the middle row a quarter of an inch less, and the front row in the same proportion. Evenness across the top of the blooms is a point which enhances the appearance of a stand; therefore, in the case of extra deep blooms, these figures can only be taken approximately by the beginner. When placing the blooms in the tubes, some exhibitors use pieces of the stem as wedges to tighten the stem of the flower; but I prefer bits of cork cut of a wedge shape. By holding the tube, and the bloom inside of it, in the left-

hand, the cork is easily pushed into the space from below, until the stem is made quite firm. The advantage which the use of cork affords over anything else for this purpose is, that when wet it swells, thus still more tightening the stem, and it is easily drawn out with a pair of tweezers.

In arranging the blooms in the stands, the various forms of the Japanese should be studied; for instance,

PREPARING FOR ANOTHER SEASON.

Long before the present flowering season is past, arrangements have to be made for another. The bulk of early-flowered varieties, of which the Desgranges family are a central figure, will be now past their best. Provision must now be made for providing a stock of cuttings for next year. Cut the flower stems down to within an inch or so of

DOVER HOUSE, ROEHAMPTON.

[SEE SUPPLEMENTARY ILLUSTRATION.]

In July last a visit was made to one of the best kept gardens in the vicinity of the metropolis. Dover House is situate about 2 miles from Putney, on the South-Western Railway, and was the principal residence of the late Mr. Junius Spencer Morgan, the celebrated banker, and although at his death, some two years ago, the place fell to his son (Mr. John Pierpoint Morgan, who resides in America), the gardens have not been allowed to suffer in the least degree, no trouble or expense being spared in their management. Mr. Jas. F. McLeod, who has been head gardener during the last three years, is a thoroughly practical all-round man, who can by no means be described as a specialist, but whose enthusiasm results in an assiduous attention to all the details in every department of the establishment.

The grounds are about 14 acres in extent, and the small portion of these that we can describe as the pleasure ground and flower garden is pretty and attractive. The lawns are exceedingly well kept, whilst the paths, which are of hard gravel, are all that one could wish—not a weed being allowed to show itself upon them.

In front of the white and substantial-looking house is the principal flower garden, which at the time of our visit was looking very gay with Begonias, Pelargoniums, Ageratums, and other summer bedders, besides a small portion of carpet-bedding which was well done and looked very pretty. The design of the flower garden, however, is somewhat too large and intricate for the space at command, and consequently the beds look crowded, and there is too little lawn between them. On the right of the front door is a splendid specimen of the Purple Beech (*Fagus sylvatica purpurea*)—large, handsome, and of symmetrical habit—we doubt if there are many better trees to be seen anywhere.

HOT-HOUSES.

The glass is extensive, and all the houses are in perfect condition. The interior of each is painted every year, which—besides giving to them a good appearance—preserves them to such an extent, that the system is not an expensive one after all. The first house we entered was a lean-to, in two divisions, the first of which is planted with Peaches, from which the fruit had all been gathered. The other—a vinery—was not in a satisfactory condition when Mr. McLeod took charge, and he lifted the whole of the canes, and made an entire new border inside during the winter 1889-90, and the result has been most satisfactory. The varieties are Black Hamburgh and Foster's Seedling, and although bearing a good average crop, the Vines are expected to be as much better next year as they have been this.

The canes in the early vinery have been thrown away, and the borders and drainage renewed. This house is now planted with fine strong canes of Gros Colmar, Mrs. Pince, and Lady Downes, as well as the new varieties, Lady Hutt and Appley Towers—this being now intended as a late-house. The Muscats have been subjected to the same treatment as the Hamburghs, and with equal results. A low half-span, facing due south, with two divisions, is called the Strawberry-house, and here the whole of the 4000 forced plants are fruited. During the summer months it forms a very suitable place for a fine batch of Bouvardias, a number of Celosias, Balsams, &c., relieved with a few Cyperus, and other graceful foliage plants. In the winter it is used for storing some of the Indian Azaleas.

Close to this is another half-span, one half of which had lately been planted with Melons; and here were a few good healthy Gardenias and Ixoras, which Mr. McLeod intends to encourage and increase. The other division contains a batch of Crotons; they are in 5-inch pots, or thereabouts, and are good dwarf, bushy plants. Each of the fifty-six varieties represented have their individual characteristics well developed, and they form one of the most striking features on the place, and are the finest-coloured pieces we have seen this season. Noticeable were

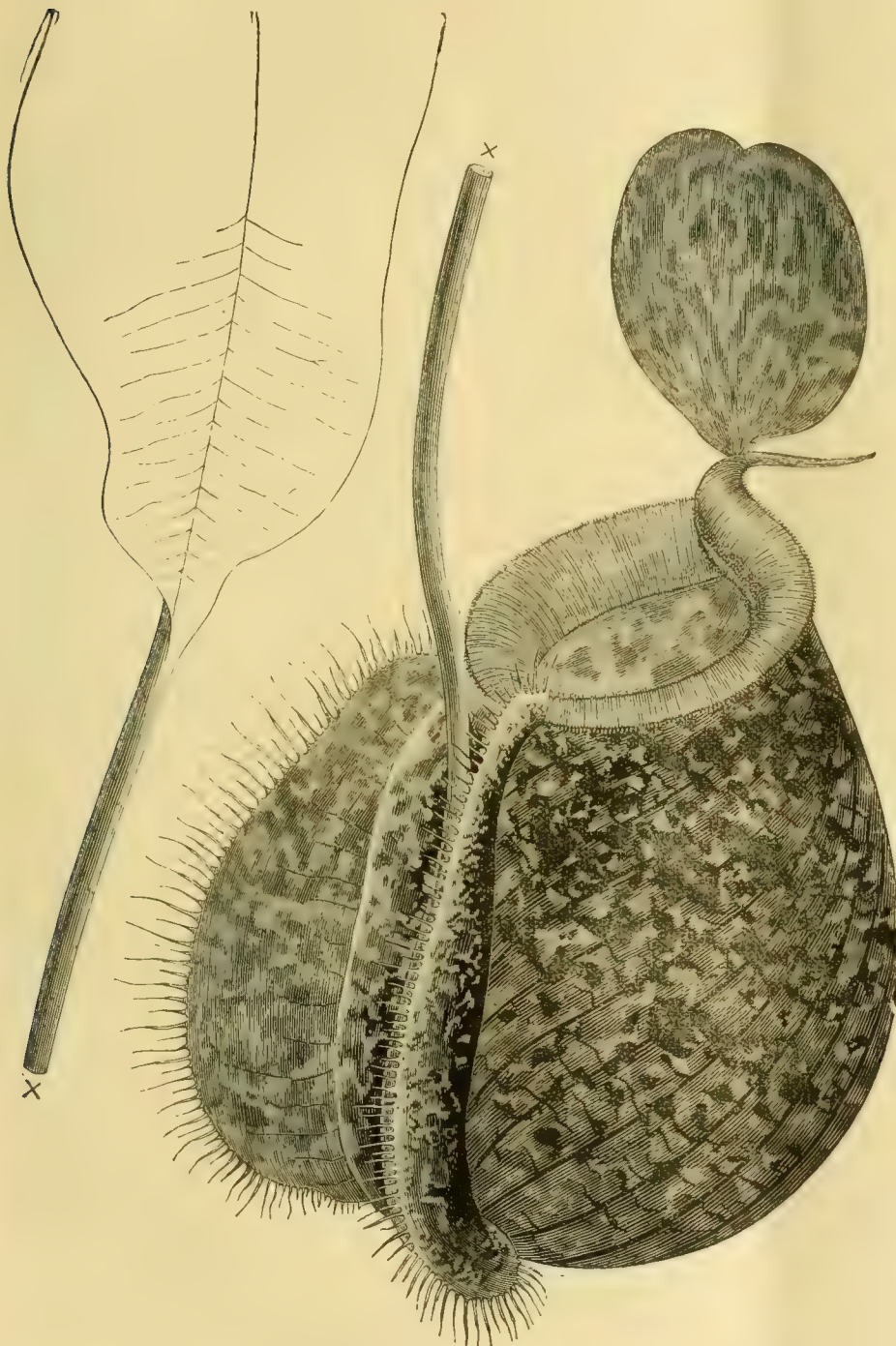


FIG. 85.—NEPENTHES HOOKERIANA: PITCHER, AND PART OF LEAF. (SEE P. 561.)

the drooping character of Boule d'Or should not be altered in such a way as to make it represent a flower with reflexed florets, by too tightly "copping" the blooms. The aim should be to display each form in such a manner as to improve their appearance, if possible, but not to attempt to alter their true character. It is the extreme to which some exhibitors carry this latter that brings Chrysanthemum exhibiting into bad repute with the critics, who are often in antagonism to the principle altogether.

the soil. This section is generally free in producing a quantity of sturdy cuttings, if the plants are not neglected at this time of the year. A cold frame, from which frost is excluded, provides the best place. Here the cuttings grow sturdy, a point to be considered. If too many cuttings grow from the base, and there is a possibility of overcrowding each other to the detriment of all, thin some of the weakest out, thus giving more space to those remaining. *E. Molyneux.*

the new variety *Reedii*, and that useful and pretty *Constadii*, of the Prince of Wales type. Lord Chelmsford, Mrs. Dorman (a variety extensively used for table decoration), *superbus* (which was so highly coloured that the whole plant appeared to be yellow), *Veitchii*, *Aigburthensis*, and *Hawkeri*; this latter is a very handsome variety when well done, as we saw it here.

It may be worth noting, that the method of propagating *Crotons* practised is that known as the "ringing" process. A ring of bark about one-eighth of an inch wide is taken off the shoot it is wished to strike, and the wound is wrapped with a little moss, which is kept damp. The wound will soon callus, and afterwards the roots come away freely, and when the shoot is taken off, the check is but slight. It is contended that stronger plants are thus obtained than by the common system of striking cuttings.

We next come to a large span-roofed house with two divisions. The first half is used as a show-house, with centre and side stages, which contained many kinds of summer-flowering plants, all gay with their many-coloured blossoms. The roof is partially covered with *Roses*, amongst which is a plant of the beautifully-scented hybrid *Tea*, *Cheshunt Hybrid*. The other division—the stove—was full of well-grown stove plants of the usual kinds, and the roof supported climbers, such as *Bougainvillea glabra*, *Clerodendron Balfourianum*, *Stephanotis floribunda* (a very free-flowering variety), *Monstera deliciosa* (now bearing fruit), and the pretty *Aristolochia elegans*, with numerous flowers.

Another span-roofed house was occupied by newly-planted *Cucumbers* (*Telegraph*) in the first half, and by fruiting *Melons* in the other. Small fruits with maximum flavour are aimed at, and the varieties in fruit were *Syon House*, *La Favourite*, and *Eastnor Castle*. In the first of these divisions, the early crop of *Tomatoes* had been ripened, the favourite variety being *Sutton's Earliest of All*; but for general crop, Mr. McLeod still sticks to *Hackwood Park*.

We then entered a lean-to with north aspect, and one, until the present gardener came, was filled with *Camellias*, but front and back stages have now been put in, and it is filled with *Ferns*, *Caladiums*, *Gloxinias*, &c., with some young plants of the pale blue-flowered *Plumbago capensis* running up the pillars, and bearing a nice quantity of bloom; this is now one of the prettiest houses in the garden.

On the other side of the wall is a long lean-to house with two or three divisions, and in one of these the *Orchids* are accommodated. About three-score of *Cattleyas*, and a goodly number of *Cypripediums* in variety, with a few *Dendrobiums*, are all looking well, and have been got together during the last three years. Another of these divisions is filled with *Peaches*, carrying excellent crops; and in the remaining portion, some *Melons*.

In another part of the establishment, known as the fruit garden, where 3 or 4 acres are entirely devoted to fruit trees and bushes, are two long *Peach-houses*, one about 200 feet in length, and the other (which is a case with a square front) about 150 feet, and faces south-west. In the latter are the latest *Peach trees*, all of which were set with heavy crops of fruit, and the front of the case forms a first-class place for some hundreds of *Tomatoes* grown on the single stem method.

The longer house contained *Peaches* and *Nectarines* on the back walls and upon trellises at the front. In three or four divisions the fruit was in different degrees of maturity. It was astonishing what heavy crops the trees were allowed to carry here, and yet with liberal feeding, good, large, and well-coloured fruits were obtained. An especial favourite with Mr. McLeod, is *Princess of Wales*, which ripened a very great number of fruits, each weighing about 9 oz. Other popular varieties in favour here are *Stirling Castle*, *Darwin*, *Bellegarde*, *Grosse Mignonne*, and *Dymond Peaches*. Of *Nectarines*, *Lord Napier* and *Byron* were in evidence. A register has been kept of the number of fruits obtained from each of the trees since they were first planted; and thus if one of them behaves badly, it

is easy to see if its record will warrant further mercy, or whether a visitation of justice in the shape of eviction, will be the proper and most effective measure to pursue. Two other houses are devoted to *Roses* and *Figs* respectively. A great deal of interest is taken in *Carnations*, and the stock of pot and border varieties amounts to 5000 plants. *Chrysanthemums* are done well, and at the time of going to press there are about 1500 well-grown plants commencing to bloom.

FRUIT AND KITCHEN GARDEN.

In the fruit garden, before referred to, *Pears* were a moderate crop, and *Apples* a good average. Small fruits were plentiful, especially *Raspberries*, *Strawberries*, and *Cherries*. The kitchen garden like every other department was the acme of neatness. The brakes and borders are all edged with tiles, and 1 foot from these was a row of *Sweet Peas* round the entire garden. These *Peas* have a very uncommon appearance, and being pinched at the tip when they get about 3 feet high, an enormous quantity of bloom is produced, almost to the ground. Of the pretty and very popular *Princess Beatrice*, there was a wealth of bloom, and no prettier bouquet could be desired than one made exclusively from this *Pea*. Amongst the *Celery* the greatest favourite was *Sutton's White Gem*, which could be blanched in August, and might be had at any time afterwards.

In conclusion, we must not omit to mention a very effective bit of bedding on one of the long *Peach borders*. It was composed of some twelve or fourteen varieties of *Violas* planted in triangular groups, each group containing one variety. The triangles were edged with variegated grass. A row of *Tropæolums* ran along the back, and the front was edged with *Lobelia*. Nothing could be brighter than were those *Violas*, which were literally covered with bloom. The best of the varieties were *The Mearns*, *True Blue*, *Mrs. Ellis* (the most profuse bloomer), *Wemyss*, a continuous bloomer, and pretty gold variety; and *Archibald Grant*, the largest bloom of all. Mr. McLeod strongly recommends this class of plants, and says that all the trouble they have given him has been to take off the seed pods, and bedew the plants each evening. *Viola* cuttings are struck in the autumn at the foot of a wall without any other shelter.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

POT VINES.—As severe frost may soon be looked for, the pots should be protected; and it will be necessary in the first place to provide each plant with a stout stake, to which the cane should be fastened. Perhaps the general practice of bending the canes until their ends meet, and fastening them then, and also tying the top of the curves to the stakes, is the best to adopt, as any plant can then be removed without having to disturb others. The pots may then be placed side by side in a row, and the canes gently bent till they touch the ends of every fourth cane, and then tied together. Secured in this manner, the canes are not likely to get injured by wind. The pots themselves should be covered with ashes, *Cocoa-fibre* refuse, sawdust, long litter, or litter mixed with tree leaves, so that frost may not reach the roots.

THE ORCHARD-HOUSE.—Trees which are standing in pots or tubs should be afforded the same kind of protection to their roots as that advised for the pot Vines, and the pots partially plunged in the soil, thus making them secure against the wind.

STRAWBERRIES IN POTS.—These should be placed in frames, and plunged to the rim of the pot in leaves, litter, &c., taking care whilst doing it not to cover up the leaves of the plants. A lining $1\frac{1}{2}$ foot thick of stable litter may then be placed round the frames. The frames must be freely ventilated, always removing the lights altogether on sunny days, and tilting them when it is

wet; but during severe weather covering with mats, straw, or litter.

MELONS.—Good top and bottom-heat are needed to finish up any fruits that are still unripe, aiming at a minimum of 70° for top-heat, and 10° more for that of the bed, and affording air only in bright sunshine, and then merely sufficient to change the air of the house. Be careful in watering the plants, but still do not let the soil become dry, as it will have a tendency to do owing to the dry atmosphere in the house, and yet not overcharging it with moisture.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

PEACHES AND NECTARINES.—The idea which still prevails that *Peaches* and *Nectarines* cannot be as well grown at the present time, owing to adverse seasons, as was the case in years gone by, may, I think, be put aside as untenable, for if healthy young trees of the right sorts be selected and properly planted, and subsequently treated as they should be in the way of thinning, training, watering at the roots, and repeated syringing to keep the foliage healthy by freeing it from insect pests and dirt, as fine crops of first-rate fruit may be grown now, as at any previous period. For these trees the wall should be built of brick, and of 8 feet to 12 feet in height with a southern or eastern aspect, in places favourable to *Peach* growing. In all cases the wall should have a stone or brick coping projecting from 6 to 8 inches, which forms a slight shelter against frost. The border should, of course, be drained (if the soil is not of a sandy or gravelly kind, when it is seldom necessary), with bricks or stones, and the depth of soil should range from 2 to 3 feet. If the soil is in good heart, very little preparation will be needed, but in stubborn or worn-out soil, much good moderately-heavy pasture loam should be mixed with it; or replace it entirely, adding thereto a good sprinkling of crushed bones, burnt-earth, and a small portion of old plaster or mortar. All these different substances should be thoroughly rammed together when in a moderately dry state, and before the planting of the trees is begun. If crushed bones cannot be obtained, manure should take their place. The border having been thoroughly prepared, the next thing to claim attention will be the selection of varieties. As with other kinds of fruit, all the best varieties of *Peaches* ripen about the same time; but to keep up a lengthy supply of fruit, very early *Peaches* must be included, as well as one or two that are moderately late in ripening. The following varieties will give a long succession:—*Waterloo*, *Hale's Early*, *Early York*, *Early Grosse Mignonne*, *Alexandra Noblesse*, *Stirling Castle*, *Dymond*, *Bellegarde*, *Crimson Galande*, *Barrington*, *Walburton Admirable*, and *Gladstone*. These are good for most purposes, whilst *Alice*, *Condor*, *Royal Charlotte*, *Royal George*, *Old Noblesse*, *Dr. Hogg*, *Goshawk*, and *Sea Eagle* are really good fruits, any of which would not fail to please, and *Princess of Wales* is excellent for later use. The position for the late varieties of *Peaches* should be warm and well drained, or they will not ripen satisfactorily, unless when the season is a very warm one. Of *Nectarines*, *Lord Napier*, *Elruge*, *Stanwick Elruge*, *Pitaston Orange*, *Violette Hative*, *Pine-apple*, and *Humboldt*, are all good varieties. The green-skinned *Nectarines*, as *Victoria* and *Albert Victor*, are not to be recommended generally for outdoors, the fruit being much injured by splitting; indoors, however, they are just the reverse, and their flavour is delicious. The distance apart for permanent trees should be about 14 feet, and between these supernumeraries (standards) may be grown for a few seasons. When planting, cut off the tips of any damaged roots, and keep the base of the stem at least 6 inches away from the wall, to allow for growth. The roots should be spread out at different levels, and covered to the depth of 8 inches, trampled firmly and mulched with half-rotted stable manure. Temporary fastenings will be needed to keep the shoots from being broken, but these must be very loose, so that the tree in sinking will not hang in them or be drawn out of the earth. Old fruitless trees should be grubbed up, the soil removed to a depth of two or more feet, and several feet round, and the holes refilled with new soil. Lifting and replanting should only be practised with trees that are barren through rankness of shoots, the main roots having got down to the subsoil, and not from age. For the present, healthy and fruitful trees will

not require attention, unless scale be present, when a good washing with petroleum emulsion, or petroleum at the strength of a wineglassful to a gallon of water, and a little soft-soap, and repeating the washing should the first dressing not prove effectual. Where the trees are very robust and the leaves hang thickly, part may be removed with the hand or a small stick or wick.

PLANTS AND THEIR CULTURE.

By R. MILNER, Gardener, Penrice Gardens, Swansea.

FORCING PITS.—Where large quantities of cut flowers and flowering plants are required during the winter, much attention must be paid to keeping a due succession of the various plants grown for the purpose. *Azalea indica* is very useful as a winter-bloomer, and may be early forced; but in this event the plants should have been properly prepared by their making timely growth in the spring, which may be pinched back once and then allowed to mature. I never remember seeing this plant in better flowering condition than this season, and the growth is thoroughly matured. Fielder's White, Deutsche Perle and *Indica alba* are still the best for early forcing, as are *Azalea amœna*, and Carmichael's varieties of *Azaleas*. Lilacs have become very popular flowers, and no wonder, considering how readily they may be induced to flower. The variety, Charles X., is one of the best at this season, and should the gardener find that an insufficient stock is at his command, no time should be lost in buying the required quantity of plants. As fast as the earliest Roman Hyacinths show colour in the buds, remove them to a cooler house for a few days, especially if required for cut blooms, and they will last for a much longer time than otherwise. The same remarks will apply to Paper White and Polyanthus Narcissus. Introduce bulbs and plants into heat in accordance with requirements, and include some pots of early Tulips if the bulbs have made plenty of roots. When Poinsettias are required at an early date, some part of the stock of these plants should be placed in heat. As soon as growth begins, apply weak manure water at intervals. Bring forward a few plants of *Calla æthiopica* and Little Gem, choosing for this time those plants which have been growing in pots, as these are better adapted for forcing than plants lifted from the open ground and potted up at a late part of the season. Put into gentle heat a few plants of *Dielytra spectabilis* and Solomon's Seal, also *Doronicums*, which are most useful flowers for cutting purposes. If these latter be lifted at once, and placed in a temperature of from 55° to 60°, they may be obtained in flower by the end of the year. See that the stock of plants of *Spiræa japonica* and *S. japonica compacta multiflora*, the last-named being most useful for all purposes, is sufficient for all demands, potting them all as soon as they come to hand, afterwards placing them in a cool house or frame out of the reach of frost.

CHRYSANTHEMUMS.—By the time this Calendar is in print, the chief display of the above will be at its best. In arranging the plants, either make harmonies of like shades of colour, or boldly contrast the colours, and, as a general rule, do not put the modest-looking incurves amongst the larger gaudy Japanese varieties, the latter quite eclipsing them. See that all watering of the plants be done early in the morning, and keep the floors of the house dry, by mopping up the drainage water after each watering. Look over the plants occasionally, removing any decayed leaves and flowers. This is the best time for the amateur grower to inspect some well-grown collection, so that he may decide which he would like to purchase for his own garden, as with the large number of varieties catalogued at the present time, it is an impossibility for those who are not well acquainted with these plants to know which are really the best for any particular purpose or season.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

FLOWERS FOR NOVEMBER.—At one time there were few species which flowered in this month, but fortunately their number is increasing, thanks to the enterprise of collectors and hybridists. We can now enjoy a beautiful succession of flowers the entire year, and that for the present month is not much less in numbers or brilliancy than that which the spring affords. The orchidist who prefers to

have a succession of flowers rather than a glut at one time, and few or none at other times, would do well to make note of the species and varieties which flower each month, and to cultivate such according to his accommodation for them. Many of the *Cypripediums* are in bloom in the autumn and winter, viz., *C. Spicerianum*, *C. insignis* and varieties, *C. longifolium*, *C. Schlimii*, and the many beautiful crosses obtained by the fertilisation of some of these species. Of *Cattleyas* flowering at this season there are *C. labiata vera*, the good varieties of which are in point of beauty behind none of the *Cattleyas*; *C. Bowringiana*, another useful and free-flowering subject, with erect trusses of rosy-purple very pretty flowers; *C. pumila* (*marginata*), too, is a species conspicuous just now—it is a lovely flower, deserving of general cultivation. Of the *Odontoglossums* which bloom at this season are *O. grande*, now at its best; *O. Insleayi splendens*, almost as beautiful; *O. Rossi majus*, *O. Madrense*, and *O. Cervantesii*, also share in beautifying the Orchid-house in this month. Plants of *O. Roezlii*, too, are generally to be seen in flower now as well as in the spring. In *Lælias* we have *L. Dayana*, *L. Dormaniana*, *L. elegans Schilleriana*, and *L. Perrinii*, the last-named lasts but a short time in perfection. *Oncidium*s show up in great force, viz., *O. varicosum*, *O. Forbesii*, *O. crispum*, *O. tigrinum*, *O. ornithorhynchum*, and *O. incurvum*, which give to the house, if the plants are healthy and of good size, an attractive appearance. Small or weakly *Oncidium* plants should not be allowed to produce a single flower, nor even when they are strong should the flower-spikes be left on the plants for too long a time, exhaustion usually following this practice. *Barkerias* are neither large growers nor very showy plants, but they are pretty, and, therefore, well worthy of a place in most collections. *Barkeria Skinneri*, *B. Lindleyana*, *B. spectabilis*, and *B. elegans* flower in November and later. The lovely pure white and yellow blossoms of *Cymbidium Masterii* usually appear at this season, and are highly valued. The sweetly-scented *Pleione lagenaria*, an effective plant when well grown and in good bloom; the pans containing the plants should be hung up to the rafters, but low enough to be observed. *Vanda Kimballiana* is a recent addition, and, being possessed of much prettiness, it is a welcome species in the present month. A few *Masdevallias*, too, may always be relied upon to flower if a good collection is grown, and those that are not very beautiful are generally quaint-looking and interesting. *Dendrobium Phalaenopsis*, *D. P. Schroderianum*, *D. bigibbum*, and *D. superbum* are in full beauty in November. The duration of the flowers of these species seems to depend mostly on the clearness of the atmosphere; where the air is murky or there is much cloud, they soon pass over. Lovely, indeed, are they when the whole spike of bloom remains in perfection for a time; that is, when those which first opens keep in good condition till the last is fully expanded. This is easy of accomplishment in the pure air of the country, but rarely in or near smoky towns.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

NOISSETTE ROSES.—In continuation of my selection of garden Roses, the following include the best varieties:—*Aimée Vibert*, pure white, small blooms, in clusters; *Celine Forestier*, bright yellow, highly fragrant, and free-growing, the opening buds being good subjects for bouquets, &c.; *Cloth of Gold*, a pale yellow-coloured flower, with centre of a deeper tint, large and vigorous; *Madame Caroline Kuster*, orange-yellow, large and globular, and of vigorous growth; *Madame Massot*, white blooms, in large clusters; *William Allen Richardson*, orange-yellow, flowers small, and best as buds. All the Roses in this and Tea-scented sections give the best effects when they are grown against warm walls, &c., the shoots being low, and about 4 inches apart.

SINGLE ROSES.—Single Roses are decoratively valuable in the flower garden or shrubbery, more especially when planted in masses. The colours of the flowers range from the white of *Rosa rugosa alba* to that of the copper-coloured Austrian Briar, and the blooms are useful for cutting. The following are distinct:—*R. berberifolia Hardyi*, a single yellow Rose, with maroon spot; *Camellia japonica*, a pure white flower, with yellowish stamens; *Copper Austrian Briar*, nankeen-yellow, very distinct; *Macartney Simplex*, large single white, with shining evergreen leaves; *rugosa*, a very handsome species, which

grows about 3 feet in height as a bush, and produces a quantity of carmine-crimson flowers, and bunches of large coral-red berries, that remain on the plant all the winter, if pheasants do not eat them; *rugosa alba* is a white variety of the last-named.

TEA-SCENTED ROSES.—The Teas named in this list have a fairly hardy constitution, and they are free bloomers:—*Belle Lyonnaise*, deep canary-yellow, tinged with salmon, large and full—a seedling from *Gloire de Dijon*; *Catherine Mermet*, delicate flesh-coloured rose—large and full, fine form, and a capital Rose for training under glass roof in a greenhouse; *Comtesse de Nadaillac*, apricot-yellow—a Rose with a globular shape and very double, a vigorous grower; *Devoniensis*, creamy-white, tinted rose—large; *Etoile de Lyon*, sulphur-yellow, with bright yellow centre—large and full; *Gloire de Dijon*, buff, orange centre—very large, fine, strong grower, and a popular Rose; *Letty Coles*, beautiful pink, of good form and free habit; *Madame Falcot*, rich orange-yellow, nice in bud or half-opened; *Maréchal Niel*, the blooms being large, full, globular in shape, and of a deep yellow, and beautifully scented, and the shoots clothed with large shining leaves; *Niphetos*, pale lemon, often white, with beautiful Magnolia-like petals, blooms large and full, very nice in bud. The climbing variety of this Rose, introduced by Messrs. Keynes, Williams & Co., of Salisbury, is admirably adapted for growing under glass or against a warm aspect in southern shires. *Reine Marie Henriette*, is a red *Gloire de Dijon*, and has the good qualities of that favourite Rose.

AYRSHIRE ROSES.—These make compact bushes and are well adapted for planting, either singly on lawns or in shrubbery borders. They bloom freely, and the flowers are small, of white, rose, and other colours. The varieties I prefer are:—*Alice Gray*, *Dundee Rambler* (Myrrh-scented), *Queen of the Belgians*, *Ruga*, very sweet; and *Splendens* (Myrrh-scented).

THE KITCHEN GARDEN.

By G. WYTTES, Gardener, Syon House, Brentford.

FORCED VEGETABLES.—If former directions have been carried out, green vegetables will still be plentiful, but for the sake of variety, others must be forced into growth in sufficient quantity to afford a few choice dishes every week. To obtain forced vegetables of the best quality, there must have been attention paid to their cultivation during the summer. Some roots may be purchaseable, but where large quantities are required they must be grown at home. Seakale roots may now be lifted at short intervals according to the demand for it. That for early forcing should have been grown on a warm border, the roots then forcing readily. If the roots were lifted a month ago, and placed close together in the open ground, covering them with light soil, some of them may be put into heat. In view of the roots forcing more readily when taken out of the soil some few weeks previously to placing them in heat, and of the probability of frost rendering their extraction difficult, a considerable number should be dug up at this season; not forgetting to save all the best thongs for purposes of new stock for planting, which can be finally prepared as cuttings during the winter, laying them in moist earth meanwhile. Seakale is often forced where it grows, the result being good, but this method requires more time, and gives a good deal of trouble. Hard forcing should be avoided in any case, and if the roots are forced in a dark moist place it should not exceed 50° for lifted roots.

ASPARAGUS.—If this should be required towards the end of the year, roots may be lifted, and placed in frames or pits. The shoots are produced in a short space of time, and the longer they are left in the soil the more matured are the buds. One month or six weeks will be sufficient to get it ready for the table. It is a capital plan to make up a good bed of stable dung and fresh tree leaves, and place the roots on the bed when it has reached a declining warmth of 85°, covering the lights at night, and also by day before the shoots grow if the weather be cold. Keep the temperature steady at 50° to 55°. Ventilate a little to allow humidity to escape, and apply fresh dung linings as required if the forcing is carried out in a dung bed.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY,	Nov. 8	{ National Chrysanthemum, at the Royal Aquarium, Westminster (three days). Chrysanthemum, at Kingston, Enfield, Sevenoaks, and Batley (all two days).
WEDNESDAY,	Nov. 9	{ Chrysanthemum, at Cardiff, Bath, South Shields, Birmingham, Bournemouth, Northampton, and Torquay (all two days).
THURSDAY,	Nov. 10	{ Chrysanthemum, at Birkenhead, Chelmsford, Windsor, Winchester, and Weybridge.
FRIDAY,	Nov. 11	{ Chrysanthemum, at Dundee, Leicester, Wellingborough, Eccles, and Bournemouth (all two days). Also at Hitchin and Pembroke.
SATURDAY,	Nov. 12	—Chrysanthemum, at Exeter.

MEETINGS.

TUESDAY,	Nov. 8	{ National Chrysanthemum, at Royal Aquarium, Westminster.
SATURDAY,	Nov. 12	—Royal Botanic.

SALES.

MONDAY,	Nov. 7	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Greenhouse Plants, Ferns, &c., at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Nov. 8	{ Great Sale of Nursery Stock, at Waterer's Nursery, Bagshot, by Protheroe & Morris (three days). Clearance Sale of Nursery Stock, at The Farm Nursery, Stafford, by Protheroe & Morris (two days). Dutch Bulbs at Protheroe & Morris' Rooms. Imported and established Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	Nov. 9	—Dutch Bulbs, at Stevens' Rooms.
THURSDAY,	Nov. 10	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Greenhouse Plants, Ferns, &c., at Protheroe & Morris' Rooms. Specimen and other Stove and Greenhouse Plants, at the Alexandra Palace, by Protheroe & Morris. Large Importation of Orchids, and Lilies from Japan, at Stevens' Rooms.
FRIDAY,	Nov. 11	{ Imported Orchids, at Protheroe & Morris' Rooms. Dutch Bulbs at Protheroe & Morris' Rooms. Nursery Stock, at Lee's Nursery Feltham, by Protheroe & Morris.
SATURDAY,	Nov. 12	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Plants, Shrubs, Roses, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—43°·6.

The
Conifer
Conference.

FELLOWS of the Royal Horticultural Society, and those interested in Conifers, will feel that if they have had to wait for the report of the Conifer Conference, they have not waited in vain.* A bulky volume is before us—so bulky, that we can but wonder how the Society can, in addition to other privileges, afford to give to its guinea subscribers a book priced at 15s. 6d.

* Report of the Conifer Conference held at the Chiswick Gardens, October 7 and 8, 1891. Office of the Society, 117, Victoria Street, S.W.

The Conifer Congress last year was, barring the weather, the most brilliantly successful of the many conferences held in the old garden. Never had anything like so magnificent and extensive a display been got together, thanks to the numerous exhibitors in all parts of the country, from the Queen downwards; and thanks also, particularly as regards Scotland, to the zeal of Mr. MALCOLM DUNN. How vast and how complete the exhibition was is indicated by the volume before us, which has been edited with infinite labour and patience by Rev. W. WILKS and Mr. WEATHERS. The Report is a noble contribution to the literature of Conifers, and a very worthy companion to the series of Conference Reports on Orchids, Primroses, Roses, Apples, Pears, Dahlias, Chrysanthemums, Begonias, and others, and to the elaborate Frost Report prepared by Rev. Professor HENSLow for the Scientific Committee. A Society which can command the free labours of such experts, and which does work like this, occupies a very high position, and should receive the grateful support of all interested in horticulture.

A book of nearly 600 pages crammed with information cannot be adequately noticed cursorily. All that we can do at present is to indicate the nature of its contents, and tender the hearty thanks of all interested to the Society, and to all those exhibitors, reporters, and others, who have contributed so zealously to make this work by far the most complete of its kind. After the introductory address, come some papers on the Conifers of Japan by Mr. H. J. VEITCH, Conifers for landscape garden purposes by Mr. NICHOLSON, for economic planting by Mr. A. D. WEBSTER, and for decorative purposes by Mr. BAILEY. Mr. HERRIN of Dropmore Gardens, and Mr. HARDING of Orton, Longueville, give accounts of the famous Pineta under their care. Mr. MALCOLM DUNN follows with an excellent paper on the practical value of various Conifers in all parts of the islands. Dr. SOMERVILLE and Mr. MCKENZIE treat of coniferous timber. Prof. MARSHALL WARD deals with the fungi attacking Conifers—a paper which those who heard it remember as a masterpiece of popular exposition of a very intricate subject. Mr. BLANDFORD then enumerates the insects which are injurious to Conifers. Then follows a systematic list of the Conifers cultivated in Britain, with references to figures, &c., about which all we can say is to express our hope that it will be useful. Professor CARL HANSEN, of Copenhagen, supplies a most elaborate and comprehensive paper on the Conifers of Denmark, and which is, indeed, quite encyclopædic in its character. Nowhere is there collected together so much interesting information as in this paper of Prof. HANSEN's; and it is satisfactory to find that the scientific arrangement and nomenclature are substantially identical with those adopted in the list of Conifers and Taxads cultivated in great Britain and Ireland. Statistical details relating to the more important Conifers as growing in the several counties are then given, with numerous interesting notes. A list of awards and an index complete a work that will redound to the credit of the old Society for many a long year.

Kew.

THOSE who value the privileges afforded to students and artists, of early admission to the Royal Gardens, Kew, will do well to accept Professor FOSTER's suggestion in our last issue, and take immediate steps to safeguard their interests. We believe that no one who can show reasonable cause for admission is refused, if he apply at the

office, whilst regular students are admitted in compliance with the rules, of which we subjoin a copy. Who, then, are excluded till noon? Only the idlers, the nursemaids, and the children. We submit that the interests of this class of the community are already amply provided for elsewhere, and even if they were not, they should not be allowed to prevail against the interests of the garden and of those whose business renders it essential for them to use it for purposes of study.

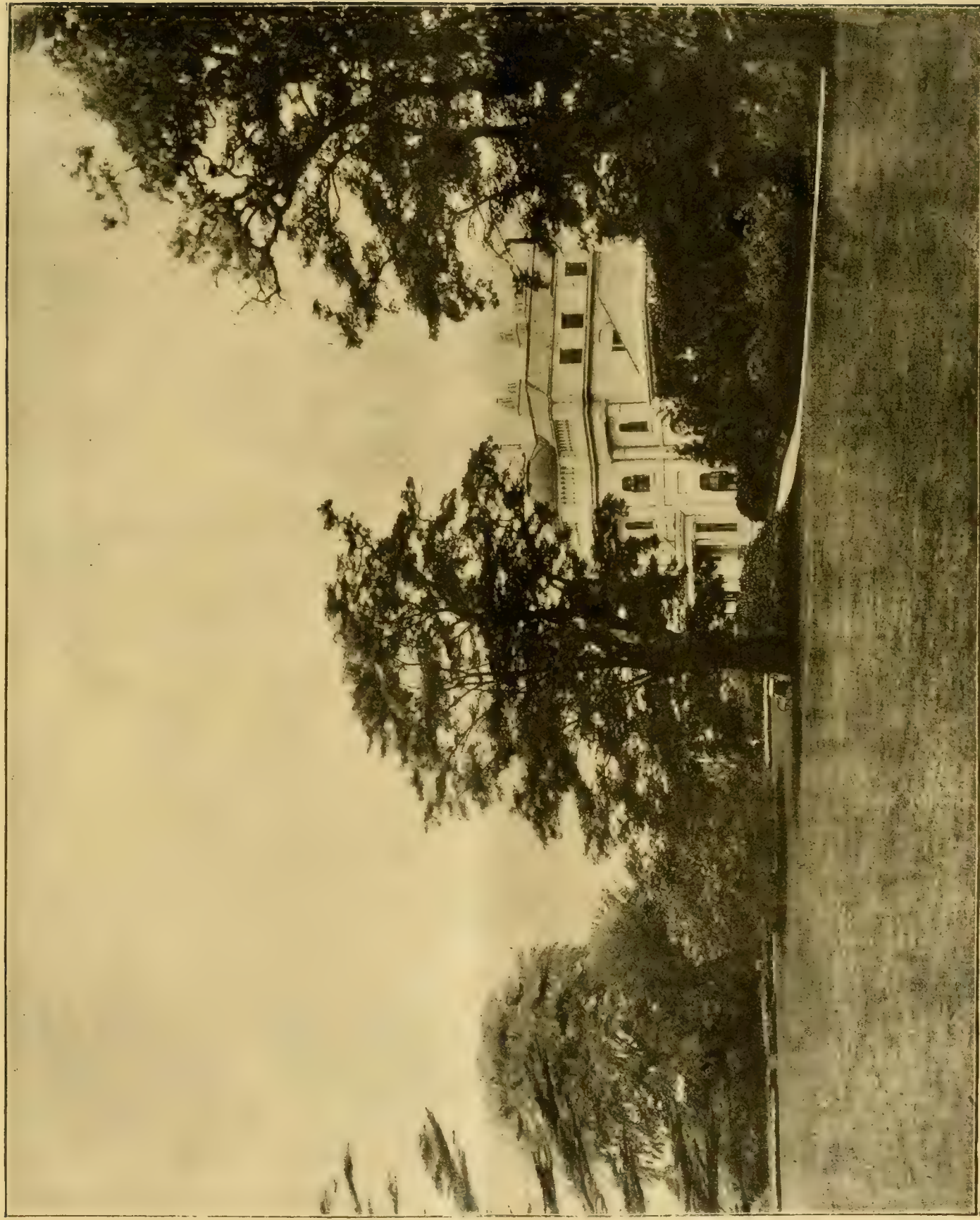
Probably the greatest amount of inconvenience would be felt by the artists. They can only work when not impeded by visitors; and in the public hours they would themselves constitute an obstruction which could not be tolerated. If, then, a few hours each day are not to be conceded to the artists, their occupation will be gone. Corresponding restrictions would have to be placed upon botanists and gardeners. It is no time to restrict the scientific work done in this great establishment, rather is it necessary to extend it. The completion of the temperate-house has been delayed beyond all reason. The Orchids, and specially the Nepenthes, require extended and better accommodation. If gardening and maintenance were not well carried out at Kew, there would be little object in asking for further development, but, in point of fact, gardening is so well done as to command the warm approval of the best judges, and to beget confidence that any future additions will be as well cared for as is the existing establishment.

Instead, then, of throwing obstacles in the way of the administration, and instead of subjecting students and others having actual business in the gardens to needless inconvenience, the object of those who value Kew should be to still further extend its usefulness. At one time the general public knew little or nothing of what was done at Kew for the furtherance of the industrial resources of our colonies, though it was well known to experts. The publication of the *Kew Bulletin* has opened the eyes of many to this fact, whilst, moreover, it has made plainer some of the deficiencies of the establishment. A department of vegetable pathology, under the direction of botanical and entomological experts, is a grievous want at the present time, and one that could be readily supplied, to the immense advantage of farmers and gardeners. A department of comparative anatomy, again, is urgently wanted in the interests of science. Systematic botany at present is provided for in the herbarium and library, which are in many respects unrivalled; but they offer relatively little facility for that systematic, comparative, study of minute anatomy and embryology of the living plants which is every day becoming more important from a systematic point of view. It is to be hoped that the appointment of Dr. SCOTT, as Superintendent of the Laboratory, will shortly be followed by substantial progress in this department.

Under the same auspices, researches in vegetable physiology might be made. Some, indeed, have already been conducted in the Jodrell Laboratory, but few in proportion to the needs of science and the requirements of practice.

Garden-botany also demands that the services of three or more trained botanists, equal in rank and capacity to those employed in the herbarium, should be secured, to note and record the plants in the gardens, to draw and preserve such specimens as may be required, to ascertain the correct nomenclature and synonymy, and to be responsible for the adequate labelling of the collections.

Any one of the matters we have referred to



DOVER HOUSE, ROEHAMPTON.

is of infinitely more consequence than the admission of a few nursemaids an hour or two earlier than at present.

We append a copy of the—

"Regulations for the admittance of artists and others in the forenoon:—

"Persons desiring access to the Royal Gardens for the *bonâ fide* purpose of drawing, sketching, photography, or special study, can obtain a card of admission, available during morning hours, on addressing to the Director a written application, stating the object for which such admission is desired. If the application is approved, the card will be sent by post to the applicant's personal address. The privilege of admission is strictly personal to the holder of the card, and it is not transferable.

"A card of admission cannot be issued to admit a class or a party collectively.

"The Gardens may be entered by persons to whom a card is issued, either by the Victoria Gate, opposite the Kew Gardens Railway Station, or by the private gate adjoining the Curator's office. The holder of the card must sign his or her name in the book kept for the purpose at the gatekeeper's lodge.

"Admission may be obtained after 6 A.M. from April to October; after 6.30 A.M. in March and November; and after 7 A.M. in January, February, and December.

"The privilege is not, however, available on Sundays, Christmas Day, Good Friday, or Bank Holidays.

"Persons holding cards may draw, sketch, or photograph in the open air during such hours as the Gardens are open to the public; but drawing in the houses cannot be permitted after noon of each day.

"The Staff of the Royal Gardens accept no responsibility as regards the custody of drawing, photographic, or other apparatus. By Order.

"Royal Gardens, Kew, August 1, 1891."

NEPENTHES.—One of the most remarkable, if not the most remarkable feature of the exhibition made on Tuesday last at the ordinary committee meetings of the Royal Horticultural Society was the collection of *Nepenthes* shown by Messrs. VEITCH. The plants were of moderate size, but well grown, the pitchers well coloured, and representative of a large number of species, varieties, and hybrids. The display enabled the visitors to see the great variation in form of the pitchers, the deeply-fringed wings of some species, their absence in others, such as *N. Burkei*, the shape of the lids and the curious appendages to them, the range of colour from grey or creamy to glowing crimson, the purple stripes and blotches, the neatly plicate rims of some, the boldly marked ridges of others. We append a list of the specimens exhibited by Messrs. VEITCH, and append a few illustrations. Most of the species have been figured from time to time in our columns, and we hope shortly to give a figure of *N. Northii* ×, a hybrid between the magnificent *N. Northiana* and the very distinct *N. Curtisii*, and which was shown for the first time on Tuesday last. We reserve a further account of this until our illustration is prepared; but, in the meanwhile, we may point out, lest any should think that a *Mr. North* was commemorated, that the name in question is compounded of those of the two parent plants, *Northiana* and *Curtisii*, *North-isii*. In writing it the sign of hybridity × should never be omitted. The following is a complete list of the *Nepenthes* exhibited by Messrs. VEITCH, November 1, 1892:—

<i>Nepenthes Morganii</i> ×	<i>Nepenthes Veitchii striata</i>
" <i>Chelsoni</i> ×	" <i>intermedia</i> ×
" <i>Wrigleyana</i> ×	" <i>Domitii</i> ×
" <i>Burkei</i>	" <i>Northiana</i>
" <i>excellens</i>	" <i>Northii</i> , new hybrid,
" <i>Rafflesiana</i>	" <i>Northiana</i> × <i>Curtisii</i>
" <i>pallida</i>	" <i>Curtisii</i> superba
" <i>Hookeriana</i> ×	" <i>albo marginata</i>
" <i>elongata</i>	" <i>bicalcarata</i>
" <i>Mastersiana</i> ×, red variety	" <i>Dicksoniana</i> ×
" <i>dark variety</i>	" <i>hirsuta glabrescens</i>
" <i>sanguinea</i>	" <i>rubra</i>
" <i>distillatoria</i>	" <i>Courtii</i> ×
" <i>cincta</i>	" <i>Sedenii</i> ×
" <i>Veitchii</i>	" <i>ampullaria vittata major</i>
	" <i>stenophylla</i>

ROYAL HORTICULTURAL SOCIETY.—The dates of the various exhibitions of the Royal Horticultural Society for 1893 will be as nearly as possible in the following order:—Jan. 17, Feb. 14, March 14 and 28, April 11 and 25, Auricula Show; May 9; Temple Show, May 24 and 25, or 25 and 26; June 13 and 20; July 11, Show at Chiswick; July 25, Carnation Show; Aug. 8 and 22; Sept. 12 and 26 (possibly a great show at the Agricultural Hall, Islington, early in this month); Oct. 10 and 24, Nov. 14 and 28, Dec. 12.

"HANDBOOK TO THE FLORA OF CEYLON."

Under the authority of the Government of Ceylon, Dr. HENRY TRIMEN, F.R.S., Director of the Royal Botanical Gardens in that colony, is engaged in preparing for publication a *Handbook to the Flora of Ceylon*. The work will be illustrated by a hundred coloured plates of the more interesting species. All the known species will be fully described, and much local information afforded, with a view to render the book of use to residents in the island. The first part, accompanied by twenty-five plates, is expected to be ready by the beginning of 1893. The work will be published by Messrs. DULAU & Co., Soho Square, London.

HORTICULTURAL INSTRUCTION.—As this subject is attracting great attention, we print a list of the lectures and exercises for the summer course of 1892 in practical horticulture at the Bussey Institution of Harvard University, Mass.:—July 6: Opening lecture; information in regard to methods of obtaining practical knowledge of gardening in its various forms; books of reference, periodical literature, &c.; examination of the grounds at the Bussey Institution and Arnold Arboretum. July 7: Soils; origin, functions, modifications, and preparation for use; practical work in handling soils for different purposes; examination of natural and prepared soils, and various forms of planting. July 8: Soil, tillage, manures, &c.; exercises in potting and planting. July 11: Propagation of plants; the two general methods and examples of the classes of plants propagated in each way; greenhouse and outdoor work in propagation. July 12: Propagation by seeds in open air and under glass, with lists of plants so handled; practical work as before; systematic inspection of hardy trees and shrubs in the arboretum will now begin, and continue about twice a week during the course. July 13: Propagation by division, layers, stolons, stools, root tips; lists of examples; exercises in these methods. July 14: Propagation by cuttings of the stem; growing and hardened wood, with lists; greenhouse work in making and planting cuttings; construction of the propagating bed. July 15: Propagation by cuttings of the stem; ripened wood in open air and under glass, with lists; work as above. July 18: Propagation by cuttings of the root and root-stock, by leaves and scales, with lists; work as before. July 19: Propagation, grafting (budding and inarching); practical exercises in open air and under glass. July 20: the same. July 21: Cultivation under glass; different forms and classes of plant houses, situation and construction; examination of greenhouses and a large number of plans. July 22: Details of plant growing under glass; soils, potting, training; insects and fungi, practical remedies. July 25: As above; watering and rest; hybridising and selection; practical exercises. July 26: As above; forcing; pits and cellars, cold frames, hot-beds; the frame yard; practical work in preparing and selecting plants for forcing. July 27: Cultivation in the open air; soils, planting, transplanting and cultivating; practical work in this direction so far as the season will permit. July 28: Further details of out-of-door work; pruning, winter and summer; training. July 29: As above; fruit trees and small fruits, with lists of desirable varieties. August 1: As above; vegetables, with lists of suitable varieties for different purposes. August 2: As above; nurseries; various forms of planting;

trees and shrubs for different uses, soils, and situations. August 3: As above; insects and fungi, with remedies in practical use. Supplementary lectures will be given from time to time, taking the place in part of the exercises in the open air, on the more important plants in ordinary cultivation, e.g., Conifers, flowering shrubs, herbaceous plants, Dutch bulbs, garden annuals, house plants, grasses (lawns and meadows), Roses (hardy and tender), Rhododendrons and Azaleas, Plums and Cherries (ornamental), Chrysanthemums, Lilies.

A **NARCISSUS EXHIBITION** is to be held at the Edgbaston Botanical Gardens, Birmingham, on April 26 and 27 next, and prizes in fifteen classes are offered, so that a fine display may be looked for. Five of the classes are for plants in pots for decorative work, Mr. R. SYDENHAM giving £7 10s. in prizes for twelve pots of single, double, or Polyanthus varieties. Schedules can be had on application to Mr. LATHAM, at the gardens.

GARDENERS' ORPHAN FUND.—The committee of the above fund resumed their monthly meetings at the Horticultural Club, Hotel Windsor, on the 28th ult., Mr. B. WYNNE in the chair, in the absence of Mr. W. MARSHALL through indisposition. The minutes of the last meeting having been read, the chairman announced that 10,200 collecting cards had been sent out with a view of taking the national collection, all of which were returnable by November 1. Of those returned the average sum was quite up to last year. The following special receipts were announced:—Mr. and Mrs. HARRY J. VEITCH, as a thankoffering on the celebration of their silver wedding, £250 each, conditionally upon its being invested. A very hearty vote of thanks, coupled with expressions of the best wishes of the committee, was given to Mr. and Mrs. Veitch; the Wimbledon Horticultural Society, £6 6s.; Mr. H. J. Clayton, Grimston Park Gardens, Tadcaster, £6; Beddington Flower Show, per Mr. G. W. Cummins, £5; Burton-on-Trent Horticultural Society, £2 2s.; Mr. Bowerman, Hackwood Park Gardens, 10s.; The Walkley Amateur Horticultural Society, per Mr. E. Smith, £1 10s.; Mr. W. Dennington, Hampton, 10s.; Mr. J. Miller, Ruxley Lodge, Esher, 21s.; Mr. J. B. Stevenson, Bournemouth, 12s. 9d.; Mr. J. Hamilton, Byrkeley Gardens, 15s.; Mr. R. Dean's sale of flowers at the Royal Aquarium, £2 15s. 3d.; and money-boxes, Mr. J. Atherton, Preston, £1 10s.; and Messrs. Sutton & Sons' box in their shop at Reading, £1 11s. 6d. The secretary announced the recent death of Mr. C. H. Sharman, a member of the committee, and one of the earliest workers on behalf of the fund. A vote of condolence with Mrs. Sharman was carried, and the secretary was instructed to convey the same to her. Mr. Robert Ballantine, the chairman of the National Chrysanthemum Society was elected a member of the committee in the place of Mr. Sharman. The secretary was instructed to make arrangements for the purchase of £500 worth of consols.

BRITISH MOSSES.—Lord Justice FRY has published in book form (WITHERBY & Co., 326, High Holborn), the very comprehensive account of mosses in general which he originally gave as a lecture at the Royal Institution. It is the simplest and clearest account (consistent with accuracy) of the structure and mode of life of mosses that we have met with. The formation of peat bogs, and the curious changes which peat undergoes, and which converts it from a highly absorbent substance to one impervious to water, are treated of in connection with the successive appearance and disappearance of superposed forests. "To the intimate structure of the Turf Moss are thus to be attributed great results in the history of the world. To look at our own island alone: but for it, the primeval forests that once covered the land might still be standing; but for it, large tracts of land would still be lake and mere; but for it, every freshet in a highland river would be a flood; without it, we should have had no

mosses on the confines of England and Scotland, and where would have been the border warfare and the border minstrelsy? Where the moss hags in which the hunted Covenanters sought for shelter and freedom of worship? To come southward, by force of its growth, the broad meadows of Somerset have been built up, and the dark waters on which the mysterious barge bore the dead ARTHUR from Tintagel to Avalon have been turned into the green pastures of Glastonbury and Meare, and the battlefield of Sedgemoor."

"COCOA: ALL ABOUT IT."—Messrs. SAMPSON, LOW, MARSTON, & Co. publish a little work under a title so comprehensive that nothing remains for the reviewer to add. History, cultivation, analysis, and manufacture are all treated of, and illustrated by numerous rather coarsely-executed illustrations, some of which are very quaint. The botanical details, typographical and illustrative, are rather defective, and the same remark may be made as to the Vanilla. It will be news to some of our readers to know that coniferin, a principle occurring in Conifers, may be so treated as to yield vanillin, the aromatic principle of the Vanilla pods. Coniferin, we are told, has in consequence been collected by hundreds of kilogrammes in the forests of northern Germany. Our forest proprietors in Scotland should take note of this.

"A TEXT-BOOK OF AGRICULTURAL ENTOMOLOGY, ETC."—Messrs. SIMPKIN, MARSHALL & Co. have published under this title the second edition of an excellent book by Miss ORMEROD, and which under the clumsy title of a *Guide to the Methods of Insect-Life* did not, as we are told, make much way in spite of its merits. The establishment of county councils and technical education classes, however, created a demand for the book, which is accordingly reissued in an extended form and under a more appropriate designation. We cannot doubt that the great utility of the book will now be duly recognised.

WINCHESTER AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—At the fortnightly meeting of the above society, which took place on the 27th ult., Mr. E. MOLYNEUX, Swanmore Gardens, Bishop's Waltham, read an instructive paper on "The Apple" to an appreciative audience, giving practical illustrations on pruning and other topics. A capital collection of Apples was contributed by members of the association, the largest, consisting of thirty dishes, coming from Mr. G. MALDOW, gardener to Miss TURNOUR, Kingsworthy House.

SETS OF BRITISH RUBI.—As already announced in the *Journal of Botany*, the Revs. E. F. and W. R. LINTON, R. P. MURRAY, and W. MOYLE ROGERS propose issuing a limited number of Sets of British Brambles. Each set will consist of four fascicles. The British list of Rubi may be said to consist of about 100 "species." The compilers hope to include in the set nearly all the rare and local plants, as fully authenticated as possible. As, consequently, much time must be consumed and expense incurred in getting the material together, the several fascicles will be issued at intervals of about a year; a plan which, it is hoped, will also prove convenient to the subscribers. Each fascicle will contain twenty-five full sheets, representing as many different Brambles. A few well-marked varieties will be introduced, but no hybrids. The price of each fascicle will be one guinea. Subscribers to the first will not be considered bound to take any of the succeeding fascicles; but will be expected to inform the compilers within three months of the receipt of a fascicle whether they intend to subscribe for the next. Communications should be sent to the Rev. E. F. LINTON, Crymlyn, Bournemouth.

MR. KRELAGE'S LIBRARY.—The *Bookworm* for the present month contains an interesting article on the famous botanico-horticultural library accumulated at Haarlem by Mr. KRELAGE, and which has often been the subject of comment in our columns.

ERRATIC ORCHIDS.—Mr. COCKBURN, of Milton Bridge, sends us a photograph of *Cypripedium barbatum*, the flower-stalk of which bears, in addition to the flower, a small, well-developed leaf, bearing a leaf-bud in the axil. A second photograph of *C. Chamberlainianum* shows a fully-developed flower, a flower-bud, and from the pedicel bearing the latter, a leaf-bud in the shape of a *Cypripedium* plant in miniature. From Mr. O'Brien we have a flower of *Cypripedium Spicerianum*, in which the two lateral sepals are turned downwards and connate. There is but one petal, and that is median, in the position where the upper sepal, here absent, is normally found. The lip was also absent, but in the centre of the flower a column with two staminodes, one anterior one posterior, and two perfect lateral stamens in the ordinary position. There was no trace of ovary or style. From the same source we have received a flower of *C. Lawrenceanum*, with two connate lateral sepals directed downwards, the petal median and posterior, in the place of the missing posterior sepal. The lip is opposite this petal. In the centre is the column, with two perfect anthers not placed laterally as usually in *Cypripedium*, but one in front and one at the back, thus alternating with the two petals. On each side of the column is a two-lobed staminode.

"CONTRIBUTIONS TO HORTICULTURAL LITERATURE."—Her Majesty the QUEEN has accepted from the author, Mr. WM. PAUL of Waltham Cross, a copy of his newly-published volume, *Contributions to Horticultural Literature*.

WEIGHTS AND MEASURES.—At the annual meeting of the American Seed Trade Association, held at Hartford, Conn., June 16, a committee on weights and measures was appointed and its special duty named (according to the *American Florist*), as the consideration of the Cental System (making all quotations per 100 lb. instead of per bushel), in all sales of seeds, and instructed to formulate some plan for united action in the matter. After careful consideration, and consultation with some of the leading houses in the trade, who have without exception favoured it, we now recommend that said system be adopted in buying and selling Clover, Timothy, Blue Grass, Orchard Grass, Red Top, Lawn Grass, Millet, Hungarian, and all kinds of grass seeds; also Buckwheat, Cane, Broomcorn, Sunflower, Osage, Hemp, Castor Beans and Pumpkin Seed, and we most earnestly request that all seedsmen and dealers in the United States and Canada, adopt this system beginning January 1, 1893. And use the same in preparing all catalogues and other printed matter to be issued on or about that date for the spring trade of 1893, and thereafter. The advantages to be gained are manifold: The legislatures in the various States have established "legal weights," stating number of pounds which shall constitute a bushel, and these vary so greatly, that much controversy is caused in interstate commerce, which cannot occur under the Cental plan. This change will also save considerable labour in receiving, shipping, and billing out goods, and do away with a large proportion of the vexatious and costly errors which often occur under the old plan. We suggest and recommend that Clover, Blue-grass, Red-top, orchard-grass, &c., be quoted by the pound; while Timothy, Millet, Hungarian, Buckwheat, and the lower-priced seeds, be quoted by the 100 pounds. At this time we do not recommend that the change include Peas, Beans, Corn, Flax, Wheat, Oats, Rye, and Barley, but from present outlook we believe that it is only a question of time when we can include them all."

BRAZILIAN EXHIBITION.—Viscount SAINT LEGER has established in Paris a permanent exhibition of Orchids and other Brazilian products.

THE LATE MR. E. COOPER.—A committee, which consisted of the personal friends of the late Mr. E. COOPER, who was for so many years gardener to the Right Hon. JOSEPH CHAMBERLAIN, M.P., at Highbury, have succeeded in obtaining a sum of

money for his widow amounting to £58. This sum has been handed to Mrs. COOPER, who desires that her sincere thanks should be communicated to those who have so kindly helped her in her trouble.

TECHNICAL EDUCATION IN HORTICULTURE.—We learn that Mr. A. M. C. JONGEINDT CONINCK, formerly of the Nurseries at Dedemsvaart, Holland, will carry on a technical school for affording instruction in horticulture. The school was opened for the reception of pupils on November 1. Mr. CONINCK, who spent some time in this country, is quite competent to carry out the work he has undertaken.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.—The annual meeting of the above Society was held in the Music Hall buildings, Aberdeen, on Saturday evening, the 29th ult. Lieut.-Colonel CROMBIE presided, and there was a large attendance. The Chairman, in submitting the annual report, said that the financial surplus on the year amounted to £435 18s. 9d., which, added to the balance brought forward from last year, made the sum of £696 3s. 7d. at the credit of the Society. He formally moved the adoption of the report.

WINDOW GARDENING IN LONDON.—We learn from the *Leisure Hour* for November that Lord LEIGH, Lord-Lieutenant of Warwickshire, in a speech at Kenilworth lately, gave a fragment of his personal experience of window gardening in London. At the beginning of the Queen's reign, flower shows, with the exception of the annual flower fête at the gardens of the Royal Horticultural Society at Chiswick, were rarely held, and flowers were seldom seen in the houses or on the window-sills of the poor in London. Nowadays exhibitions are everywhere arranged, and one may go from Belgravia to Bow, and from Westminster to Whitechapel, and everywhere see the cultivation of plants, and witness the love of flowers.

PRESENTATION.—On Thursday, October 27, the friends of Mr. ANGUS McLEOD, until recently head gardener at Headfort Gardens, Kells, co. Meath, presented him with an address, accompanied by a purse of gold, on his resigning his post at Headfort. Mr. McLEOD was head at Headfort for more than six years, during which time the great interest he took in the promotion of Irish horticulture, together with his genial manners, won him many friends. His name figured as a prizetaker at most of the Dublin, and at many local shows.

YOUNG GARDENERS AND FRENCH RESIDENCE.—Young men wishing to improve their gardening knowledge by making a stay in France, can obtain information at the seat of the London French Horticultural Society, 27, Gerrard Street, W., on the first Saturday of each month, at 8 P.M.

APPLES ON PEAR TREES.—Rev. Canon WALSHAW is answerable for the following statement, communicated to the *Sheffield Daily Telegraph*:—"The finest Ribstons that I have seen and tasted grew upon a noble Pear tree, where the Apples of the richest tints hung intermingled with Pears, both of Jargonelle and Marie Louise variety. The parent-tree, the Jargonelle, had been grafted with shoots of the Marie Louise Pear, and of Ribston and Golden Pippin Apple trees. The Ribston proved the most successful in fruit-bearing, the Apples so perfect in shape, and so rich and delicate in colour, as to resemble the finest-tinted specimens in wax or porcelain; while for the table the fruit was rich with the melting juiciness of the Jargonelle, combined with the aromatic flavour of the Ribston. While often admiring the abundance and beauty of the laden branches of my friend's favourite tree, its owner would repeat the story of his horticultural triumph, for he had been assured by a high-class and scientific gardener that his attempt to raise Apples on a Pear tree was contrary to nature, and must end in failure. Following my friend's example, I in like manner succeeded, and should have been happy to have offered to a friend a Pippin of my own grafting

in the days of my residence on the banks of the Tees, among the fair scenes which Sir Walter Scott has so faithfully described in his *Rokeby*. I may further note, that a basket of choice Ribstons was sent from the tree spoken of to the Duke of Cleveland of above thirty years ago. The fruit adorned the dessert-table of a large company at Raby Castle, and was pronounced by all not only fair to the eye, but most delicious in flavour. In venturing to send these lines I am induced to express a hope that in these days, when improvement of fruit culture in our country is so desirable, the experiment may be extended, and that both connoisseurs and others may not only be rewarded by rich and fair fruit for the table, but that baskets of the same may appear in the markets not without profit to the grower. The

It frequents dry slopes, generally on lime or sandstone, and is described as a low, round-topped tree, not exceeding 30 feet in height, branching from the base, and yielding a soft wood, useful for fuel or fencing purposes, but of little worth for building. The seeds which, like those of the Swiss *P. cembra*, are destitute of wings, are collected by the Indians, to whom under the name of Piñon, they constitute a valuable article of food. In this country, we have noted the tree at Pampesford, Kew, and elsewhere.

The buds are cylindric-oblong obtuse, covered with light brown deltoid acuminate scales. The herbaceous shoots are greenish, glaucescent, cylindric or somewhat three-sided, and slightly setose, generally completely clothed with leaf-tufts, but sometimes naked at the base. The leaves are in pairs or

projecting ends (apophysis) prominently four to five-sided, with a lozenge-shaped boss or umbo of a lighter colour, and a small mucro, both directed downwards. The seeds, 12 to 15 mm. long, are egg-shaped, somewhat flattened, brownish, and entirely destitute of wing. As they become dry, the scales of the cone separate widely, give a very different appearance to the cone, and leave the conspicuous egg-like seeds exposed.

Engelmann remarks that the species *P. monophylla*, *P. cembroides*, and *P. Parryana* (he might have added *latiquama*), form a group with the leaves of the flexilis group, the seeds of *P. cembra*, and the cone and scales of *P. Pinaster*. All these have very short leaf-sheaths, with recurving perulae, and the leaf-structure is essentially the same in all. It is evident also that there is some close affinity with the Chinese *P. Bungeana*.

From *P. monophylla* the acuminate, not obtuse, bud-scales and more slender leaves furnish a distinction. From *P. cembroides* (the *P. Llaveana* of Pinetum Woburnense), the present species (*edulis*) differs in its shorter, thicker leaves, which are stomatiferous on the dorsal side, and oblong, not globose, cones. The boss of the scales is also more markedly deflexed.

All the Pines now mentioned belong to the group of "Nut Pines," so called on account of their edible seeds. It has been suggested that they are all forms of, or at least derivatives from, one species, and this is by no means unlikely; but inasmuch as they can mostly be distinguished without much difficulty, and the anatomical characteristics, though essentially the same, differ in points of detail, it is as well to keep the forms distinct, pending the acquisition of fuller knowledge. *M. T. M.*

BOOK NOTICE.

TRAVELS AMONGST THE GREAT ANDES OF THE EQUATOR. By Edward Whymper. Second edition. (John Murray, 1892.)

We have been tardy in calling the attention of our readers to this book, but not so tardy by a long way as the author was in publishing it, for more than ten years elapsed between the conclusion of the journey and the appearance of the book. It is the record of an adventurous journey undertaken by Mr. Whymper (whose prowess as an alpine climber is well-known) amongst the mountains of Ecuador. He was accompanied by two trusty Swiss mountaineers, and the whole journey, including ascents of Chimborazo (20,000 feet), Corazon, Cotopaxi, Antisana, Pichincha, and other giants, was successfully accomplished. The book is well printed, beautifully and usefully illustrated, and generally well got up. Mr. Whymper's main object was to determine whether human life could be satisfactorily maintained at lofty elevations, and, if not, to ascertain what were the precise conditions which produce the evil results. Mountain sickness is shown to depend, first, on diminished atmospheric pressure, which lessens the value of the air that can be inspired at any given time, which induces suffocation in the same way that an insufficient supply of air would do; and secondly and concurrently, by causing the gas or air within the body to expand and press upon the internal organs. In the course of his travels, many subjects, directly and indirectly, attracted the author's attention. The topography and natural history of the country, the manners and customs of the people, prehistoric antiquities may be mentioned as among them, and as likely to interest many more than will be concerned with the effects of diminished pressure at such elevations either on human beings, or on aneroid barometers. We proceed to note some of the observations which may have special interest for our readers, premising that they will find the whole book well worth reading for the abundant information it contains. A lichen (*Lecanora subfusca*) braves diminished pressure at a height of 18,500 feet on Chimborazo.



FIG. 86.—PINUS EDULIS: FOLIAGE, CONES, AND SEED.

Golden Pippin seems now to have deteriorated. I would recommend the experiment to be tried with grafts also from the Alexandra or any other handsome and well-flavoured Pippin.—I am, yours most sincerely, S. CANON WALSHAW, October 17."

PINUS EDULIS.*

WE are indebted to our excellent colleague, Professor Meehan, for the opportunity of figuring the cones of *Pinus edulis*, a species grown in this country, but which has not, so far as we know, produced fruit here. It is an interesting species, extending, according to Sargent, from the eastern base of Pike's Peak, Colorado, where it ascends as high as 9000 feet, to New Mexico and the mountains of Western Texas.

* *Pinus edulis*, Engelmann, in *Wishizenus' Report*, n. 4; Parlature, in *De C. Prod.*, xvi. 2, 398; Sargent, *Report on Forests of N. America*, &c. (1894), p. 190; Coulter, *Botany of Rocky Mountain Region* (1885), p. 432; Coulter and Rose, *Botanical Gazette* (1886), p. 303—leaf anatomy. Syn. *P. cembroides*, Gordon, in *Journ. Hort. Soc.*, p. 238.

in threes, closely approximate and tardy to separate one from the other. The leaf-tufts are surrounded at the base by a very short sheath, consisting of short recurved lanceolate brown scales. The individual leaves are ascending, arcuately curved, $1\frac{1}{2}$ inch (4 cm.) long, pale ashy-green, linear, sharply pointed, entire or very obscurely serrulate, convex on the dorsal side, with numerous shallow furrows beset with stomata, concave on the upper side, with two to three broad bands of stomata on either side of the midrib. The transverse section of the leaf shows a semicircular or triangular outline, with stomates on all surfaces, a thick layer of hypoderm, two resin-canals close to the epidermis, and surrounded by strengthening cells; the fibro-vascular bundles circular and single. The male catkins are in racemose clusters, each cylindric-oblong, yellow on anther-crest, thick and wavy. The cones are nearly sessile, in whorls of three in our specimen, each spreading nearly horizontally, and about 2 inches (5 cm.) long, $1\frac{1}{2}$ inch (4 cm.) wide, ovate-oblong. The scales are woody, of a light brown colour, their

On the slopes of Chimborazo also, Mr. Whympers tells us, they, the explorers "found a *Calceolaria* (*C. rosmarinifolia*, Lam.) in abundance near Chuquipoquio; and several species of *Gentiana*, of *Lupinus* and *Cerastium*, a *Valeriana*, a *Vaccinium*, and a *Ranunculus* (*R. peruvianus*, Pers.), growing between 12,000 and 14,000 feet. The grasses upon the slopes were principally Poas, Fescues, and Deyeuxias. When about 13,800 feet high, we caught sight of a large white spot about a mile off, and found it was an isolated patch of a splendid grass (*Gynierium argenteum*, Nees) growing 8 to 9 feet high, by the side of a little stream. A few days later, we discovered the same species 2000 feet lower, near Mocha, but these were the only localities where it was noticed. A little below 14,000 feet, on the north-east side of the mountain, at the foot of some cliffs, facing the north, I was attracted from a long distance by the flowers of some Currant-bushes (*Ribes glandulosum*, R. & P.). This is the greatest elevation at which an example of that order was obtained in Ecuador."

On the summit of Carhuairazo Mr. Whympers found other Cryptogams, as mentioned in the following paragraph—

"Our peak terminated in a snow-cone too small to stand upon, with a little patch of rock peeping out a short distance down upon the north side, bearing some lichens (*Lecidea* and *Lecanora*), and, for such a situation, a not inconsiderable quantity of a moss which has been dubiously identified as *Grimmia apocarpa*, Hedw. This same species was found in the previous January near the second camp on Chimborazo, at the rather exceptional height (for a moss) of 16,660 feet; but it was more remarkable to find it on the very apex of Carhuairazo (16,515 feet), completely surrounded as it was by permanent snow and ice upon all sides, as truly insulated as if it had been upon an island surrounded with water."

Speaking of his botanical collections, as a whole, Mr. Whympers writes—

"The collections which were formed were undertaken with the view of contributing to the knowledge of the range in altitude of species, and the remarks which follow have solely reference to the extreme upper range of species in Equatorial South America. Examples of twenty botanical orders were obtained at 15,000 feet above the level of the sea, and upwards, and twelve of these touched or exceeded the height of 16,000 feet. In the tables upon pp. 352, 353 the altitudes are given, and the names of the species, so far as they have been identified, of the representatives which attained the very greatest heights. These tables, and the zoological ones which follow, include only such species as were actually collected.

"Species of fifteen genera of lichens were collected in the interior of Ecuador, out of which eight were obtained at 15,000 feet, or higher; examples of twenty-six genera of mosses were collected, twelve of which were found at 15,000 feet and upwards; while out of fifty-eight genera of flowering plants (collected exclusively in the interior) fifty-nine species came from 14,000 feet, or higher, and of these, thirty-five species reached or surpassed 15,000 feet, and twenty species 16,000 feet, above the level of the sea. Including all orders, forty-two species were taken at 16,000 feet, or higher,* and almost all of these came either from Antisana or Chimborazo,† principally from the latter mountain,

* "So far as I am aware, nothing has hitherto been obtained from the height of 16,000 feet in Equatorial America, except the lichens mentioned in the note at the foot of p. 334, and perhaps the moss to which reference is made at p. 76. The Saxifrage, which was discovered by Boussingault upon his attempt to ascend Chimborazo in 1831, Humboldt says (*Aspects of Nature*, vol. ii., pp. 35, 36), was found at 15,770 feet. "On the declivity of the Chimborazo, the Saxifrage Boussingaulti, described by Adolph Brongniart, grows beyond the limit of perpetual snow on loose boulders of rocks at 15,770 feet above the level of the sea, not at 17,000 feet as stated in two estimable English journals. The Saxifrage discovered by Boussingault is certainly, up to the present time, the highest known phænogamous plant on the surface of the earth."

† These will be found enumerated upon pages 199 and 333—4.

which even at the height of 17,000 feet has a large amount of soil free from snow. One looks vainly amongst this flora for the brilliant clusters of gem-like flowers which are so conspicuous near the snow-line of the Alps. Yellows predominate in it, and they, like the other hues, are wanting in purity. The highest species, with few exceptions, were also found at considerably lower levels; and the plants which were taken at the greatest altitudes were generally solitary individuals, separated by long distances from their nearest relatives."

It will be seen that Mr. Whympers paid relatively little attention to the natural history below an elevation of 14,000 feet, and, therefore, we find little or no mention of Orchids, Tacsonias, Melastomads, and other beautiful plants of that region. Mr. Whympers's researches, however, may be supplemented by reference to the works of Dr. Jameson, André, and other recent travellers, to say nothing of Humboldt and Boussingault. To those who wish to learn something about the glaciers of the Andes, the volcanos active and passive, the volumes of volcanic dust, the pumas, the condors, and the numerous other matters touched on by Mr. Whympers, we must refer the reader to the book itself. It is a volume which will not only be read, but placed on the shelf for future reference.

HOME CORRESPONDENCE.

LANDSCAPE GARDENING (p. 493).—Kindly let me say that the statement in your review that I "would bring the field up to the house-wall without any intervention of formal feature at all," does not represent either my views or acts. On the contrary, I am often putting beautiful flowers before the house-wall, and adorning the necessary formality thereabouts. In many cases, the best foreground for a house is a beautiful flower-garden, cut off as it must be with a low wall from the field or park near. Even if one wanted to do so, it would not be easy to bring the field up the red crag of Powis Castle or Berkeley. Where in large places the flower-garden, often through a reaction from bedding-out, is turfed over, nothing is more unwelcome to me than to see only grass where flowers should be; and that in places where there are many acres of ground around and within view. Turfing what ought to be a fine flower garden has unfortunately been done at many places of late years, of which Losely Park is an instance. But in many gardens in the Thames valley, and elsewhere in the rich lowlands, where land is valuable, and, for many owners gardens are limited in area, it is often far the best way to have a lawn directly in front of the house for the sake of its verdure and repose. Examples of this may be seen in Mr. Martin Smith's garden at Hayes Common, at Bristol House, Roehampton, at Greenlands, and many other gardens. W. Robinson.

PACKING FLOWERS IN DEAL BOXES.—Noticing the paragraph on p. 532 of the *Gardeners' Chronicle*, I may say that when at Lillieshall, the Duke of Sutherland's Shropshire seat, in 1870 and 1871, Mr. Elliot, the Duke's gardener, always had the bouquet boxes (deal) soaked in water when flowers had to be sent to the late Duchess, and more than once she expressed her gratification with the freshness of the flowers after a long journey in hot weather. J. Udale.

DUPPLIN.—In the description on p. 525, "M. T." makes hardly any reference to the grounds and park at Dupplin. As I have visited the place nearly half-a-dozen times, and had many a pleasant chat with the courteous gardener, Mr. Browning, perhaps "M. T." will not mind a cursory mention of one or two out of the many beautiful and impressive features of the policies and park. First, a word as to the splendid position of the kitchen garden. From a sheltering wood a steep slope descends to a wide bend of the Earn, where the river forms a deep salmon pool and a tree-covered islet. The only garden in Scotland that I have seen on a gradient of the same angle is at Blair Athole, but there is only a curling pond there instead of the river. The steepness does not seem to make any difference in the geotropic influence, though it must do so on the crural sinews and muscles of the workmen in the garden. The walk to the castle from the kitchen garden, with its view over the country to the blue Ochil hills, is lined with sombre Yews, with Douglas Firs,

heavily layered with branches, at intervals. There can be no doubt as to what claims description near the house. It is "the dell," which is quite close, only the flower garden intervening. The dell, as it is called, is a fairly-deep glen cut by a stream; the sides are planted thick with Rhododendrons, Laurels, and other shrubs. At the head the stream issues out of the greenery, and dives over a rocky ledge, forming a waterfall, and bustles quickly down to where the sides of the glen are lined with young trees. Every means have been taken to develop the natural beauty, so that it really seems nothing more could be done to increase the loveliness of the scene. How much preferable than any formal garden must be the thought of all with any æsthetic taste who have been privileged to see "the dell." The main approach from the pretty village of Aberdogle is by a fine avenue, passing through what is called the Hexagon, where vestas open out in all directions. The park is very extensive, and has all the characteristics of a great English park. The woods on the estate, too, stretch for miles, and there is a large reservoir for trout-breeding. To the lover of Scotch history, the place is interesting as being the home of one branch of the Hay family. The legend of the traditional founder of the family is so strange that I will give it as concisely as I can. Kenneth III., King of Scotland, had to march with an army hastily raised to meet the Danes, who were coming up the Tay. After an obstinate bloody battle, the Scots broke and fled. While retreating down a narrow pass, they were met by a peasant named Hay and his two sons, armed with oxen-yokes, who stemmed the flight and led them back, and turned a defeat into a victory. After the battle (970 is the supposed date) Kenneth offered the valiant Hay "as much land as a falcon could fly over without perching." Modern historians, of course, say there was no such battle, but Dupplin is a solid proof within the required distance. The second Earl of Kinnoul fled with Montrose, but died from the exposure, and thus saved his head. *Vagabond*.

MANURES FOR STRAWBERRIES.—I would advise "New Subscriber" to apply a top-dressing of guano, one ounce per square yard, in order to encourage root development during the winter, and then as soon as the weather will permit in the early spring months, to apply another dressing of guano in the same proportion, following this up by pretty frequent applications of liquid manure. That obtained from horse-stables being the best; or an old bag may be filled with sheep-droppings and soot, which can be thrown into a tub of water, when most efficient liquid-manure will be obtained. In America, early Strawberries are sometimes forced by the application of nitrate of soda applied as a top-dressing as soon as weather permits and the growing season begins; but it is probable that in England this would cause a too vigorous growth of leaf, instead of maturation and fruiting. J. J. Willis, Harpenden.

WIREWORMS.—The ravages in garden crops caused by wireworms are so common, and the sufferers constantly on the watch for something that will free the land from them, I have been induced to look up some references to the subject in a standard work. John Curtis, in his *Farm Insects*, mentions the fact, on the authority of Dr. Roy, "that on breaking up damp meadow and pasture-land in Lincolnshire, if it be sown with Woad instead of corn, the wireworm will be got rid of, and about Boston it is found to be a very profitable crop. It may be repeated for two years, after which splendid crops of Oats and Potatoes may be obtained from the land. It may not be irrelevant to remark here, that it is a prevailing opinion respecting the Bedford Level that over-draining has caused great mischief to the Wheat crops by increasing the wireworms." The same writer also states that White Mustard seed sown on land will secure the succeeding crop of Wheat or other corn against this insect, and an instance is given where a farmer tried an experiment on half an acre in the centre of a 50-acre field of fallow, which was subject to the wireworm. The Mustard being carried, the whole field was fallowed for Wheat, and the half-acre that had been sown with White Mustard was wholly exempt from the wireworm; the remainder of the field was much injured. Encouraged by the results, he, in the course of a year or two, sowed 42 acres of this field with White Mustard, and not a single wireworm could be found the following year. It was thought that the wireworm, not finding any other roots in the soil for them to live on, ate those of the Mustard, and the acidity contained in these roots killed them.

Nitrate of soda applied to a crop either kills the wireworm, or causes it to forsake the land. Amongst the numerous so-called remedies, we find spirits of tar mentioned, a diluted mixture of this substance and water not only driving away the wireworm, but causing most robust growth in the plants to which it was applied (French Beans) on sowing the seeds. Of the natural foes of the wireworm we may mention rooks, which are the greatest friends the farmer and the gardener have, and without which the former could scarcely hope to get any valuable returns from his land; wagtails, robins, blackbirds, thrushes, and probably sparrows. Pheasants and partridges are to be included among the farmers' and gardeners' friends, as is the lapwing or "pewit." Moles exercise an incredible amount of good in destroying the wireworm, and where these animals are exterminated, or greatly lessened in numbers, wireworm will be found in great abundance. Instances of this may be, in the experience of many of our readers, as most land contains the creatures. If my remarks should induce some readers of them to sow Woad or White Mustard in the garden, if wireworm prevent the healthy growth of Parsley, Carrots, Carnations, Sweet Williams, or other plants; or to save the moles and useful birds from destruction, and give their experience at some future time in these pages, they will not have been made in vain. *One of the Crowd.*

JAPANESE CHRYSANTHEMUMS AND SHOW-BOARDS.—Although the recent decision of the Chrysanthemum growers attending the meeting at the Royal Aquarium, and reported by you last week, was practically unanimous, we may take it for granted that the decision will not be largely acted upon this year. The change is of too great a kind to admit of general acceptance in some two or three weeks. Still farther, the matter will have to become the subject of a special rule or condition, which must be published in schedules before it can become binding. The fear expressed lest the decision to have such materially enlarged show-boards for Japanese flowers, will militate against the growth and exhibition of varieties of known beauty and quality, whilst it will give special impetus to the production of blooms that have chiefly size to recommend them, cannot be said to be baseless. The proposal certainly is a concession to the taste for big blooms, which features so largely dominate, whilst there seems to be no course open but to endure what cannot be helped. It would be a matter of the deepest regret were many fine old and truly beautiful forms banished from our tables; hence it does seem as if there is some reason for the retention of the present show-boards by establishing classes for Japanese varieties for flowers, which are under 6 inches in base diameter. That would still give encouragement to the growth of many sorts, the flowers of which whilst of ever such fine quality, would still look dwarfed when set up on the new large show-boards. Points that seemed to offer no difficulty at the Royal Aquarium will not be so easily got over elsewhere, especially in relation to the additional space required and the breaks in uniformity of boards, which will of necessity be introduced. Scores of the minor show blooms are not of the dimensions they are found at the Aquarium; and compulsion in the matter of the enlargement of the show-boards may lead to much opposition. The matter is very far from being a trivial one. Flowers of older and choicer varieties will look very small indeed in tubes 7 inches apart for front rows. There is really no reason why we should favour the wider production of big-flowered varieties of Chrysanthemums, any more than in such popular show flowers as Dahlias, Roses, &c. Given fair average size in these flowers, no one regards bigness as superior to density, form, and general quality. The Chrysanthemum men, never so refined in their tastes at any time as are the growers of old florists' flowers, seem disposed to place size before every consideration, so that one of the chief functions of Chrysanthemum exhibitors promises to be the encouragement of huge flowers chiefly, irrespective of general beauty or excellence. Such flowers as Elaine, Avalanche, Sunflower, M. Bernard, Criterion, &c., are large enough for anything, and perhaps, with the exception of Vivand Morel—not, by the way, an exceptionally large flower—there is hardly a new big-flowered variety that can equal them. What, then, is to be gained by the increase in the size of large blooms? Not quality, nor beauty, nor average usefulness, that is certain. It is very needful to regard the trade element in Chrysanthemums with some hesitation. We are getting

into this trade some of that element, which has been found so objectionable in connection with the cycling trade. We are cultivating a race of raisers and growers amongst gardeners, just as the cycle manufacturers have evolved a race of manufacturers' riders, and the fear is, that for other than really honourable motives, many new varieties which have flowers of great size, but inferior quality, may be pushed to the front. That seems a very probable outcome of the enlarged show-board movement. *D.*

THE CHRYSANTHEMUM SEASON.—Some idea of the untoward character of the Chrysanthemum season may be inferred from the fact, that the committee of the Royal Cornwall Chrysanthemum Show, which is held at Falmouth, find it necessary to postpone the exhibition, announced for November 2, for a fortnight. One would imagine that Falmouth would be a district that, for earliness, would compare with any part of the United Kingdom, and yet it has to thrust the fixture on a fortnight. The October show at the Royal Aquarium was shorn of a great deal of its proportions, owing to exhibitors who had entered not being able to get their flowers open. It would appear as if the height of the Chrysanthemum bloom will fall in the third week in November, instead of the second week, which is usual. *R. D.*

SOME INSECTS WHICH INFEST APPLE TREES.—The writer of the note on p. 530 betrays much ignorance of his subject. *Aporia crataegi* (the black-veined white butterfly) has been practically extinct in this country for many years, probably a quarter of a century. Certainly extinct so far as capability for damage is concerned, and it is now believed to be totally extinct. If your correspondent can give any locality where it still occurs, even in the most reduced number, he will gladden the hearts of collectors of British butterflies, and also hasten its utter extinction. *Vanessa polychloros* (the large tortoise-shell) has never, in my recollection, been a "destructive" insect in this country, at any rate, to Apple trees. It has become distinctly rare latterly round London, and, like many other British butterflies, is gradually becoming more and more localised and less common. As the perfect insect (like all the *Vanessæ*) hibernates and lays its eggs in the spring, it cannot be said to have lain *perdu* either in "webs" or "cocoon" during the winter. *Porthesia chrysorrhæa* is in the egg state during the winter, and is the only one of the trio likely to do any damage whatever. As your correspondent is uncertain which of the three it was that robbed the trees of their foliage, let me suggest that it may, not have been any one of them. *R. McLachlan.*

DAHLIAS.—Some corrections in the names of the Dahlias given on p. 526 are necessary. *R. T. Rollinson* should be *R. T. Rawlings*, *Mr. Gladstone* should be *Mrs. Gladstone*, *Gulielma* should be *Gulietma*, and *Northern Star* not *Northern India*; *Kynerth* is *Kynerith*, and *Robert Mayhew*, *Robert Maher*. Probably the varieties seen by your correspondent were so named, and as growers might be induced from the favourable notice given by your correspondent to order under these names, it is as well to correct them. *R. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 1.—As is usual when November visits us, and we are submerged more or less in smoky fogs, and the weather is raw, the exhibits at the Drill Hall, James Street, Westminster, on Tuesday last showed a considerable falling off, as compared with the last one. There was, for the season, a good show of Orchids, a remarkable collection of *Nepenthes*, and they, with the help of a few well-flowered *Bouvardias*, and some Chrysanthemums—that were not so numerous as we should have expected—saved the Hall from having a dull appearance.

Floral Committee.

Present: *W. Marshall, Esq.*, in the chair; and Messrs. *G. Phippen, G. Paul, J. Fraser, H. Bennett-Pöe, C. Noble, T. Baines, W. Bain, C. Jeffries, H. Cannell, W. Furze, H. Turner, C. E. Pearson, T. W. Girdlestone, and B. Wynne.*

Prizes had been offered for a collection of Chrysanthemum blooms, distinct, without any dressing, and to be shown with foliage, as cut from the plant.

There were only two competitors, and neither of the collections could be described as anything other than ordinary. Those, however, that were placed 2nd—although, perhaps, the blooms were somewhat less in size—were staged in a pleasing and tasteful manner, and formed in this respect a striking contrast to those that were placed 1st. 1st, *S. J. Baker, Esq.*, Ottershaw Park, Chertsey (gr., *Thos. Osman*); 2nd, *The Duke of Northumberland*, Syon House, Brentford (gr., *Mr. Geo. Wythes*).

For twelve new Chrysanthemums, sent out since the beginning of 1890, *Mr. J. Douglas, Great Gearies, Ilford*, staged some good specimens of the following varieties:—*Edwin Beckett, Wm. Tricker, Mr. D. B. Crane, Vivand Morel, Alberic Lunden, Florence Davis, Madame M. Hoste, W. H. Lincoln* (very fine), *Gloire du Rocher, Viotet Rose, Bouquet des Dames*, and *Louis Bohmer*.

An Award of Merit was given to *W. H. Atkinson*, a Japanese of dull red colour, with pale bronze reverse, large blooms, and medium broad petals, shown by *Mr. H. J. Jones, Ryecroft Nursery, Lewisham*. The same exhibitor had a Japanese called *Charles Bonstedt*, described as a November-flowering variety. Also a Japanese (October flowering) called *Vesuvius*, which looked like a good decorative variety.

Messrs. *J. R. Pearson & Sons, Chilwell*, obtained an Award of Merit for their Japanese *Emily Doone*, a large full flower, white with creamy centre, and bottom petals somewhat rose-coloured. It appeared to be of robust constitution. Messrs. *Pearson* also showed two large single varieties, *Mars*, crimson with yellow centre, and *Dawn*, a pretty pink variety; *Purple Queen*, of the Japanese section; *Mdlle. Nathalie Brun*, a good large *Anemone* flower, white with a yellow flush; and the new *Delaware*.

A very fine lot came from Messrs. *H. Cannell & Sons, Swanley*, and an Award of Merit was granted to *Golden Ball*, a good Japanese decorative variety, of exceeding rich golden-yellow, and full high centre. From *Swanley*, too, were twelve exceedingly large blooms of *Vivand Morel*, and twelve good blooms of *Col. W. B. Smith*, also some good blooms of *Mrs. C. H. Payne, E. Molyneux, Miss Watson, Jno. Dyer, Wm. Tricker, Amos Perry, Beauté de Toulouse, Gloire du Rocher, Delaware, Chas. Gougnon, Ida Longhi, Mrs. H. W. Goulden*, and *Harry Balsley* (Vote of Thanks).

Mr. Horsfall (gr. to *Mr. Morrall, Bellamoor, Rugeley, Staffs.*), had bloom of what appeared to be a Japanese incurved, of the hairy type, but which was not in good form. Also a very pretty *Croton* called *Beatrice Horsfall*, which was granted an Award of Merit.

A group of remarkably well-grown plants of *Bouvardias* came from *Mr. J. F. McLeod, gr. to J. Pierpoint Morgan, Esq., Dover House, Roehampton*, and included the doubles, *President Garfield* and *Alfred Neuner*, singles *Hogarth, Vreelandii, Elegans, Priory Beauty, &c.* (Silver Banksian Medal).

From the Royal Horticultural Society's garden, *Chiswick*, came some plants of *Begonias* in bloom, which had been in the flower-beds during the summer. The varieties were *Duchess of Connaught, Crimson Gem, Reading Snowflake*, and *Princess Beatrice*.

Two fine sprays of *Ixora Duffi* came from *Mr. R. Mackellar, Abney Hall Gardens, Cheadle* (Vote of Thanks).

A spathe of *Rhaphidophora lancifolia*, from *Lady Cane* (gr., *Mr. Poole*).

A fine pan of the beautiful *Begonia barbata*, from Messrs. *James Veitch & Sons, Chelsea*; also some plants of *Pandanus Baptistii*, a perfectly smooth *Pandanus*, with leaves about three-quarters of an inch wide, and very slightly variegated.

Messrs. *B. S. Williams & Sons, Upper Holloway* had plants of *Nerine Meadowbankii, N. cornuta*, and *N. Moorei*.

Lord Rothschild, Tring Park, sent a new perpetual-flowering *Carnation*, which failed to find favour with the committee. The flower was of good form, and pretty cream colour, with slight magenta markings.

From *Mr. Anthony Waterer* came a group of autumn leaves, comprising *Andromeda arborea, Vaccinium corymbosum, V. pennsylvanicum, Quercus coccinea splendens, Andromeda mariana*, and *Acer palmatum*.

A First-class Certificate was awarded to *Hyra imperialis*, exhibited by the authorities of the Royal Botanic Garden, Glasnevin.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. J. O'Brien (Sec.), Dr. M. T. Masters, F.R.S., T. B. Haywood, C. Pilcher, H. Ballantine, H. M. Pollett, J. Jaques, T. W. Bond, H. Williams, and W. H. White.

Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N., exhibited an extensive group of Orchids, in which were the rare *Lælia Perrinii nives*, a pure white flower, with a pink tip to the labellum (Award of Merit); *Cypripedium Iris* ×, a curious little hybrid; the handsome *C. Pitcherianum insigne* ×, *C. Pitcherianum* × *Williams* var.; *C. Wallaertianum* ×, some fine varieties of *C. insigne*, *C. Ashburtoniae expansum* ×, *C. Arthurianum* ×, some handsome forms of autumn-flowering *Cattleya labiata*, of which one named *delicata* was almost wholly rose-pink, and a fine form; *C. Bowringiana*, *Dendrobium album* and other *Dendrobies*; *Pleiones*, *Oncidiums*, *Odontoglossums*, &c. (Silver Flora Medal).

Messrs. F. Sander & Co. also had a group, principally of new Orchids, some of them being of merit, and especially the new *Cymbidium Winnianum* × (*giganteum* ♀ × *eburneum* ♂), raised by Charles Winn, Esq., of Selly Hill, Birmingham. The specimen had five spikes of flowers, equal in size and form to those of *C. giganteum*, but of an ivory-white, the lip being beautifully spotted with crimson. The spikes bore from five to ten flowers (First-class Certificate). Another great beauty in Messrs. Sander's group was *Cattleya labiata Sanderæ*. The flowers were of a pearly blush-white, the labellum with a blotch of violet-crimson within its broad white margin (Award of Merit). Others, handsome and striking, were *Brassia Sanderiana*, *Oncidium Saintlegerianum*, *Angræcum caudatum*, some noble forms of *Cypripedium insigne* and the true autumn-flowering *Cattleya labiata* (Silver Banksian Medal).

Messrs. Jas. Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, showed three more fine hybrid Orchids in *Cattleya leucoglossa* × (*C. fausta* × ♂ (*exoniensis* × *Loddigesii*) × *Loddigesii* ♀). The plant is neat in habit, and the flower as large as an ordinary *C. labiata*. The wax-like flower is clear rose-pink, the ample front-lobe of the lip being white, the median portion clear yellow (First-class Certificate).

Another hybrid from the same nursery was *Cypripedium Arthurianum pulchellum* (*insigne Chautinii* ♂ × *Fairrieanum* ♀), which is a good *C. Arthurianum* with the addition of some crimson spotting in the upper sepal (Award of Merit), and a very curious one was *Dendrobium striatum* × (*Dalhousieanum* ♂ × *japonicum* ♀). The flowers were rose and white, and about the size of *D. nobile*, the shield-shaped lip being very curious.

Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (grower, Mr. W. H. White), exhibited two cut spikes of a richly-coloured, well-grown *Spathoglottis Viellardii rubra* (First-class Certificate).

T. Statler, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), showed a good spike of *Lælia elegans* var. *excellens*, like a very richly-coloured *L. e. Turneri*, but with pure white tube to the labellum (Award of Merit).

Messrs. Hugh Low & Co., Clapton, staged a small group, in which were two fine *Vanda cœrulea*, a very good *Cypripedium Chamberlainianum*, *C. Leeanaum* ×, *C. Ashburtoniae*, *Cattleya labiata*, a spike of *Lælia purpurata Schroderæ*, and a curious hybrid *Lælia* named *L. Claptonensis* × (*Dormani* ♂, *elegans* ♀). The flower more nearly approached *S. e. Schilleriana*, but when stronger it may develop more distinct features.

Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, and Clapham, sent a fine plant of *Miltonia Bluntii Lubbersiana*, which had been previously Certificated; and H. Shaw, Esq., Stamford House, Ashton-under-Lyne, near Manchester (gr., Mr. J. Cliffe), exhibited a *Cypripedium* of the reputed parentage *C. lavigatum* × *Lawrenceanum*, but which bore no trace of *C. lavigatum*.

Fruit Committee.

Present: P. Crowley, Esq., in the chair; and Messrs. R. Hogg, H. Balderson, J. Smith, J. Willard, G. H. Sage, A. Dean, W. Warren, Geo. Bunyard, W. Wilks, H. Pearson, Harrison Weir, T. F. Rivers, G. Hammond, and J. Cheal.

Exhibits were few. Mr. W. Icton, nurseryman, Putney Park Lane, sent a basket of large-berried and well-coloured Alicante Grapes, and one of well-finished Gros Colmar, which the committee commended for their culture.

A collection of highly-coloured Apples came from Mr. T. H. Crasp, Canford Manor Gardens, and included Warner's King, Cox's Pomona, Mère de Ménage, Ribston Pippin, Fearn's Pippin, King of the Pippins, Blenheim Orange, Cox's Orange Pippin, Hollandbury, and Barcelona Pearmain (Bronze Banksian Medal).

A seedling Apple came from Mr. J. J. Kidd, Chase Nursery, Lynn. Mr. J. Watkins, Pomona Farm, near Hereford, sent dishes of Apples, Tom Putt, Pickering Seedling, and Devonshire Red (Vote of Thanks).

Mr. R. Milner, Penrice Castle Gardens, Swansea, received a Cultural Commendation for half-a-dozen Onions, Ailsa Craig; these were large and sound, and were sown in the open ground on Feb. 24, 1892.

Messrs. T. F. Rivers & Son were awarded a First-class Certificate for a new seedling Plum, River's Late Orange, of such excellent flavour that the specimens had all disappeared when we endeavoured to inspect them!

From the Society's garden at Chiswick were exhibited several varieties of Grapes, including Black Monukka, a variety that produces no seeds; also a collection of bunches of well-grown Turnips, and thirty-seven varieties of Savoy Cabbages.

LECTURE ON FRUIT TREES IN POTS.

In the afternoon an excellent lecture was given by the Rev. W. W. Wilks (Secretary to the Society). At the commencement the lecturer described the circumstances which had led him some six or seven years ago to turn his attention to orchard-house culture, in the hope of obtaining, by such means, a supply of Peaches, Nectarines, Plums, and Pears, which—through possessing no garden walls, and no means of obtaining any—he could not produce outside. After visiting Mr. Rivers' nursery at Sawbridgeworth, and Mr. Bunyard's at Maidstone—where the lecturer declared he had learned particulars to which the success of his efforts could be directly attributed—he built a house 48 feet long and 25 feet wide, and, although circumstances made it inevitable that the house should run from east to west, Mr. Wilks could not help thinking that a house so situated commanded the largest possible amount of light, and secured the greatest degree of shelter.

The question of heating was thoroughly threshed out, the pros and cons carefully weighed, with the result that a 4-inch flow and return was fixed, with the twofold object of protecting the blossom in spring, and providing winter protection for *Chrysanthemums*. Apricots were tried, but were a complete failure. Mr. Wilks then described the compost that was used for repotting the trees each year, the major proportion of which was fat yellow loam, with the usual addition of manures, and material for keeping the compost in an open friable state. Each tree is repotted every year. The compost was allowed to lie one month previous to use in a place sheltered from heavy rains. Mr. Wilks here described minutely how the process of repotting was effected, and laid a certain amount of importance upon getting as much of the old soil away as possible without severely crippling the roots. All woody roots should be cut off, and Mr. Wilks said that amateurs will generally err in not using the knife freely enough, whilst inexperienced gardeners would be sure to err in the opposite direction. The trees are potted in October, and are then plunged in the open, where they remain the whole of the winter. At the end of January the house is thoroughly cleaned out, the lecturer stating that a day's thorough cleaning at this period would save much trouble from thrips and green-fly during the season. Sometime during February—during absence of severe frost, and extreme wet—the trees are housed. No heat should be given until they are in flower, but plenty of ventilation is required, and a little attention to watering. From the first day the plants are brought in they should be syringed freely every day, and if the weather be bright twice during each day. About the beginning of March the buds would show signs of bursting, and before these expand the whole of the orchard-house trees are subjected to a thorough smoking, two nights in succession. As the flowers open, a little heat should be allowed at night, and in the day also, providing the weather is bad. Most of the Peaches and Nectarines, Mr. Wilks said, usually produced an overabundance of buds, in which case it was only necessary to give the tree a sharp knock with his hand during the middle of the day, in order to liberate sufficient pollen to secure a crop; but where a case occurred in which the fruit buds were not so plentiful, the camel-hair brush

was used, and pollen was preferred from trees of the small-flowered section. Plums required very little more attention in this respect, but the pollen was something heavier, and less easily distributed. The thinning of Peaches and Nectarines was commenced as soon as they were set, only leaving about one-third, which were again reduced as soon as the stoning was over. A similar method would do for the Peaches, but Pears required much less thinning. Just one or two are left in each cluster, and it is preferred to leave those at the base rather than at the apex. Mr. Wilks then described the pruning that he effected at this time. The Peaches and Nectarines had any needless shoots of last year removed, and the young shoots and leaders pinched back to about five leaves. On the Pears all side shoots are shortened to two or three leaves, unless required for extension. The leader of each branch is allowed to grow until June, when it was broken over, but not off, at the six or tenth leaf, according to the strength of the shoot. When the Pear tree has grown as large as it is intended to let it, the leader is allowed to grow all the summer, and is then cut out at the base.

As soon as the fruit is set, Mr. Wilks said he top-dressed all of them with a rich compost, using some turfy loam, dung, fine mortar rubble, and a good proportion of Clay's Fertiliser and Thomson's Vine and Plant Manure. This is kneaded, and placed round the side of the pot, to form a kind of basin round the plant for the admission of water. The lecturer said that he managed to keep a good supply of fruits from the middle of June to September. In this house he fruited twenty-eight Peaches and Nectarines, twenty-one Pears, and a dozen Plums. The trees are from 5 to 9 feet high. The average yield from the Peaches is three dozen from each tree, and Plums are as safe a crop. Pears were not so certain, and he used duplicates of these, only housing for fruit those that had a fair amount of fruit. Mr. Wilks had three times as many Plums as he could shelter in the house, and by bringing one-third in at different times he succeeded in maintaining a succession. Mr. Wilks concluded his paper with a list of varieties and notes upon them, which was reserved for insertion in the Society's *Journal*. Dr. Hogg (chairman) having invited discussion, Mr. T. F. Rivers said he would not allow his trees to stand the winter we had to pass through; that his experience was, that when orchard-house trees are kept in the house during the whole of the year they were more fruitful, and more healthy. Speaking of manure, Mr. Rivers said the cultivator must supply what he knew was required; and in fruits—especially stone-fruits—lime must be supplied if good results are to be expected. Orchard-house trees in pots would go on fruiting for an indefinite time—to his own knowledge for upwards of forty years. High houses were not required. Mr. Geo. Bunyard wished to emphasise the statement that Pears should not be thinned before they have pipped. Mr. Cheal, of Crawley, also objected to leave his plants outside all winter; and Mr. H. Cannell reminded the audience once again of the necessity for keeping the foliage clean and healthy.

NATIONAL AURICULA AND CARNATION AND PICOTEE.

OCTOBER 25.—The annual meeting of the members of these societies took place at the Horticultural Club, Hotel Windsor, on the above date, Martin R. Smith, Esq., in the Chair. The report of the Committee of the National Auricula Society testified to the increasing interest taken in the cultivation of the *Primula* family, notably in the show and alpine varieties.

The report of the Committee of the Carnation and Picotee Society was lengthy, and set forth, that at the annual exhibition, held in July last, there were not only a full and extensive display of the florists' types of the Carnation and Picotee, but the varieties of the border types were very numerous and particularly good. There was a good competition for the special prizes offered by Mr. M. R. Smith. The Self and Fancy varieties appear to rapidly grow in numbers, in variety and quality, and in the estimation of the public. Some groups of plants were also highly attractive, though unfortunately staged in a bad light. Allusion is made to the publication of the *Carnation Annual*, which had been sent gratis to all subscribers of ten shillings and upwards to the Society; and members desirous of having copies for distribution can obtain them at half the published price, on application to the Secretary. The

entire cost of publishing the manual had been borne by the President, who has also distributed seeds from fertilised flowers of Carnations. The Horticultural Club is thanked for permitting the meetings to be held in their room free of charge.

The financial statements made by the Treasurer showed that the income of the Auricula Society was £76 10s. 2d., including a balance of nearly £9 at the commencement of the year. Annual subscriptions realised £64 11s. On the other hand, prize money was paid amounting to £65 8s. 6d., and this, with other expenses, brought the payments up to £76 10s., leaving a small deficit. The balance-sheet of the Carnation Society was very satisfactory, in consequence of ninety-four new members having joined during the year, mainly through the exertions of M. R. Smith, Esq., the President. The balance at the beginning of the year was £21 15s. 2d., subscriptions amounted to £134 1s., and special prizes given by Mr. Smith £19 5s. On the other side, prizes had been paid amounting to £78 14s., the sum of £12 10s. had been added to the reserve fund, which now amounts to £40, various expenses come to about £20, and a balance is carried forward of £65 10s. 5d. The accounts were signed by the auditors, Messrs. W. Badcock and W. Wheelwright.

Sir J. D. T. Llewelyn, Bart., was re-elected President of the National Auricula Society; the Vice-Presidents and committee were re-elected, some additional names being added to both; the officers were also re-elected. An addition was made to the schedule of prizes by the introduction of a class for an exhibit of any species of Primulas, also Auriculas, Polyanthus, and Primroses, arranged for effect, in a space not exceeding 12 superficial feet; and it was announced that Mr. William Smith of Bishop's Stortford had offered a special prize of one guinea for the best green-edged Auricula, not in commerce, showing decided quality.

The President of the National Carnation and Picotee Society, Martin R. Smith, Esq., was re-elected, also the Vice-Presidents and committee, with additions, and the officers. The schedule of prizes was revised, and considerable extensions and additions made to it, involving an extra expenditure of some £30. It was resolved that the date of the Auricula Show should be April 25, and that of the National Carnation on July 25.

A vote of thanks to the chairman closed the proceedings.

NATIONAL CHRYSANTHEMUM.

OCTOBER 26.—A meeting of the Floral Committee of the above took place at the Royal Aquarium, Westminster, on the above date, Mr. R. Ballantine in the chair, a considerable number of blooms being staged. First-class Certificates of Merit were awarded to Mr. Wm. Seward, The Firs, Hanwell, for a richly-coloured Japanese, named William Seward, already described; and Japanese John Shrimpton, like the foregoing, a fine reflexed variety of bright chestnut-crimson, large, full, and of great breadth of petal. Lizzie Seward is a rich, bright amaranth-crimson, with silvery-pink on the reverse of the florets—distinct and promising, but not being in good condition, the committee wished to see it once more. A First-class Certificate was also awarded to Mr. C. Blick, gr. to Martin R. Smith, Esq., Hayes, Kent, for Japanese H. W. Atkinson, bright coral-red and salmon, in some of the flowers taking on a bright cerise—distinct in colour, and very fine. Some blooms of the same variety also came from Mr. E. Beckett, The Gardens, Aldenham House, Elstree, but rather brighter in colour, though not so finely developed. H. F. Tiarks, a reflexed Japanese of a showy tint of bright pale red, was commended. First-class Certificates were awarded to Mr. H. J. Jones, Ryecroft Nursery, Lewisham, for a plant of a decorative Chrysanthemum, Ryecroft Glory, of a bright yellow colour, dwarf, and very free; and for Japanese Col. W. B. Smith, a flower of the character of E. Molyneux, orange, with a golden reverse of floret, fine and distinct. Child of the Two Worlds, a white sport from Louis Bœhmer, the Committee wished to see again; also Comte de Lurani, a pink and white Japanese; the petals were marked like the Comet Aster. Mr. Jones also had several other varieties. A First-class Certificate of Merit was awarded to Mr. W. H. Fowler, Claremont, Taunton, for Japanese Mrs. Herbert Fowler, pale amaranth, with silvery reverse, a fine variety, full, and distinct.

From Mr. William Wells, nurseryman, Earlswood, came Japanese John Dyer, a promising orange and yellow (?) variety, the committee wished to see

again; also the white sport from Vivand Morel, he has named Mrs. W. R. Wells. The committee hesitate to accept it as a fixed sport, as the first buds from Vivand Morel frequently come white, and Mr. N. Davis brought two plants of this variety to prove this, each with three blooms, and in both cases one was rose-coloured and the other two quite white. Mr. Wells also had several single or otherwise semi-double varieties, generally bright in colour.

From Mr. C. Gibson, The Gardens, Morden Park, Mitcham, came Japanese La Belle d'Algiers, a large reflexed Japanese variety, ivory-white, flushed with pink; and Dey of Algiers, a large semi-double variety, in the way of E. Molyneux, having a large golden eye. A First-class Certificate of Merit was awarded to Messrs. Pitcher & Manda, Hextable, Swanley, for a large deep coloured golden-yellow Japanese, W. A. Wells, of a hairy or spiny character; and Japanese George Savage, white with primrose centre, the committee wished to see again. A First-class Certificate of Merit was unanimously awarded to Mr. R. Owen, nurseryman, Maidenhead, for his grand new incurved Baron Hirsch, shown in splendid condition, colour golden-yellow, suffused with amber, and slightly tinted with purple on the basal florets. Mr. Owen had a few other Japanese of a promising character.

Some inconvenience having been caused by exhibitors gathering about the table during the time the committee were sitting, it was unanimously resolved that in future no persons but those officially retained are allowed to be present at the sittings of the committee.

GOSPORT CHRYSANTHEMUM.

OCTOBER 27.—The Gosport and Alverstoke Chrysanthemum was the first society to hold its show this season. The Thorngate Hall was the place of exhibition. Cut blooms formed the more important part of the show, and were staged in large numbers, and of creditable quality.

For twenty-four varieties distinct, half to be Japanese, and the remainder incurved, Mr. G. Hawkins, gr. to E. Laphorne, Esq., Gosport, was an easy 1st, with compact blooms of medium size; and Mr. B. Sims, of 39, Shaftesbury Road, Gosport, was 2nd. For eighteen Japanese distinct varieties, Mr. Hawkins was again successful with fully-developed blooms of high colour. He was also the winner in the class for eighteen incurved varieties, with neat, if small blooms.

For twelve blooms of reflexed varieties, Mr. J. Hillier, gr. to S. T. Blake, Esq., Gosport, was an easy winner, with bright examples of the true type of reflexed flowers, and Mr. T. W. Hatch, Seafield, scored an easy win with twelve Japanese, his blooms being substantial specimens of popular varieties; Mr. J. Hillier made a creditable 2nd.

Pompons, considering the earliness of the show, were really meritorious. 1st, Mr. H. Lee, who staged them attractively in bunches of three; and 2nd, Mr. H. Dance, gr. to Mrs. Rowe, Gosport. Prizes were offered for the best examples of incurved and Japanese blooms, and both were taken by Mr. H. Lee with flowers found in his 2nd prize stand of eighteen varieties, the premier incurved award being taken by Gunner A. Holmes, R.A., Fort Grange.

Mr. G. Hawkins won the Certificate offered by the National Chrysanthemum Society for excellence of culture in the cut bloom classes. Mr. S. H. Watch staged a group of Chrysanthemums, meritorious in every respect.

Vegetables were numerous and excellent, and Mr. Hawkins won the highest award for nine kinds with very superior exhibits. Hardy fruit was also a feature, Mr. J. F. Legg being 1st for Apples, and Mr. Hawkins for Pears.

HAVANT.

OCTOBER 28.—The Town Hall was, as is customary, the site selected for this the ninth annual show of this Society. The flowers showed that a few days' more time would have developed them more fully than was the case; but, taken altogether, the display was fairly good.

In the cut bloom classes the interest chiefly centred, and many excellent stands were shown. For forty-eight, half to be incurved and the other half Japanese, eighteen varieties in all, Mr. Renford,

gr. to Sir F. W. FitzWygram, M.P., Leigh Park, Havant, was 1st, with an exceedingly bright stand of flowers Mr. Agate, the Chrysanthemum Nurseries, being a good 2nd.

For eighteen blooms of Japanese and incurved varieties, Mr. Steptoe, gr. to — Gale, Esq., Horn-dean, was 1st; Mr. Parrott, gr. to Mrs. Kincaid Smith, won the 1st prize for twelve Japanese blooms; and Mr. Renford was 1st for twelve incurved flowers.

Mr. Agate was, as usual, to the fore with single-flowered and Pompons in bunches of three, taking 1st award in both classes with excellent specimens. Vivand Morel was premier bloom in the show.

Collections of miscellaneous plants and groups of Chrysanthemums rendered the hall very attractive, Mr. Taplin, Havant, winning in the former, and Mr. Agate in the latter.

Fruit and vegetables formed a notable feature in the display. Mr. Chignell, the Honorary Secretary, had, as usual, very satisfactory arrangements.

BRIXTON AND STREATHAM CHRYSANTHEMUM.

NOVEMBER 1.—Here was a fine all-round display of horticultural produce, gathered from the locality it represents. The plants (specimens) are not yet sufficiently advanced, wanting at least another week or ten days. The best (not Japanese) in the larger class came from Mr. Cherry, gr. to Mrs. Gabriel, Queen of England (very good), and Mrs. Dixon being two of the most noteworthy. For the corresponding class for Japanese, Mr. Cherry was also 1st. In the smaller class for three specimens, Mr. Clark, gr. to W. Griffiths, Esq., had some excellent examples, Margot being the finest (these were a very well-flowered lot).

The groups made a fine mass of colour, but the error so often made of keeping the back part too low and the front too high was in each case conspicuous. Mr. Poulton, gr. to C. T. Cayley, Esq., was a good 1st, many plants carrying blooms fit for boards, the colours were bright, the Japanese section being the strongest. Mr. Mursell, gr. to Mrs. Burton, came a near 2nd, lacking, however, in variety. Neither Pompons nor Standards were sufficiently in flower, although the plants were well grown.

In the cut-bloom classes, Mr. Howe, gr. to H. Tate, Esq., Park Hill, was invincible, showing many superb blooms. For twenty-four Japanese he was 1st, the whole set being very equal, with good variety in colour; the finest were Etoile de Lyon, W. E. Clark, Edwin Molyneux, Stanstead White, Mrs. F. A. Spaulding, and Mons. Holmes, none of the flowers being coarse. Mr. Mursell was here a good 2nd; Vivand Morel, Colonel W. B. Smith, and Majestic were his beat.

For twelve Japanese, Mr. Howe was also 1st; here he had Sanflower and Puritan in good form. For six, Mr. Gingell, gr. to Thomas Gabriel, Esq., was 1st.

For twenty-four incurved, Mr. Howe was 1st, having by far the best blooms, which wanted a few more days to perfect themselves; Lords Wolsley and Alcester, John Lambert, Empress of India, M. R. Bahuant, and Violet Tomlin were the finest, but all were remarkably even. The same exhibitor was 1st for twelve blooms.

One excellent class, which here meets with much favour, is that for twelve blooms shown upon long stems with foliage (as they should be). The best were twelve fine examples of Japanese, set up in Hyacinth glasses by Mr. Howe, making a most effective display. Several other good lots were staged in this class.

Another good class was that for broad-petalled Japanese, in which Mr. Howe again excelled, having Puritan, W. H. Lincoln, and Mrs. W. E. Clark as his best blooms. The Anemones were a pretty class, the 1st prize going to Mr. Pearce, gr. to Mrs. Fletcher Bennett.

The Miscellaneous plant classes were a fine feature in the show, the specimens not over large, but finely grown. Ferns are always shown well here. The 1st prize went to Mr. Wright, gr. to J. A. Whittard, who had a grand example of *Platycerium grande*, in fine health, *Gymnogramma schizophylla gloriosa*, and *Adiantum Farleyense*.

Orchids were exceptionally good also, the competition being remarkably keen. The most successful exhibitors were W. Ransom, gr. to J. T. Gabriel, Esq.; Mr. Jones, gr. to N. Sherwood, Esq.; and Mr. Howe.

Fruit was largely shown, Grapes, Pears, and Apples in season being the chief.

BRIGHTON AND SUSSEX NEW HORTICULTURAL.

NOVEMBER 1, 2.—The tenth annual exhibition of the Brighton and Hove Chrysanthemum Society was held in the Dome and Corn Exchange on the above dates. There was a very strong and close competition, and upwards of 600 entries, almost all of which were exhibited.

The chief prize-winners were residents in Sussex. That for a semi-circular group going to Mr. G. House, gr. to Mr. F. Mowatt, Patcham; Mr. Miles, Bristol Nursery, Kemp Town, being a close 2nd. For another group, Mr. Thorpe, West Hill Road, Brighton, was 1st; Mr. Fry, gr. to C. W. Catt, Esq., Brighton, being 2nd. The 1st prize for standards went to Mr. A. Scutt, gr. to Mrs. Jenkins, Burgess Hill. Mr. Scutt's name was very prominent throughout the show, so also were those of Mr. Meachen, Mr. G. F. Wickham, Mr. House, Mr. Fry, and Mr. Thorpe.

The chief prize of the day was for forty-eight large flowered, twenty-four incurved and twenty-four Japanese. The 1st prize was secured by Messrs. W. and G. Drover, Fareham, Hants; 2nd, Mr. Penfold, gr. to Sir F. W. FitzWygram, Bart., Havant; 3rd, Mr. C. Ritchings, gr. to Dr. Frankland, Reigate.

For twenty-four large-flowered Japanese, Mr. Glen was 1st; Mr. Wallis and Mr. Duncan following in the above order.

For a basket of Chrysanthemums, Messrs. Perkins & Son, Coventry, were 1st.

There was a good show of fruit, the quality being high throughout. In the open class for white Grapes, three bunches, Mr. Glen, Worth Park, Crawley, 1st; Mr. Phillips 2nd, and Mr. Kemp 3rd.

For black Grapes, three bunches, Mr. T. Fairs was 1st, Mr. Kemp 2nd, and Mr. Palley 3rd.

Vegetables were also good and numerous, but the prize-winners are perforce left out of this short report, owing to want of space.

Messrs. Balchin & Son, Messrs. Miles & Co., Messrs. J. Cheal & Sons, Messrs. Pitcher & Manda, and others exhibited, but not for competition.

The show was well attended, and may be considered one of the best held in the south of England.

EALING HORTICULTURAL.

NOVEMBER 2, 3.—The fifteenth annual autumn exhibition of Chrysanthemums, &c., was held in the Victoria Hall, Ealing, on the above date. For a group of Chrysanthemums arranged, Mr. C. Edwards, gr. to W. Owen, Esq., the Elms, was 1st, with a bold well-flowered collection. For a smaller group arranged in a space, 6 feet by 4 feet, Mr. C. Long, gr. to E. P. Oakshott, Esq., was 1st. Twelve bunches Pompons, 1st, Mr. C. Long; 2nd, Mr. W. Gates. Six bunches Pompons, 1st, Mr. C. Edwards; 2nd, Mr. C. Long. Six incurved, 1st, Mr. C. Edwards; 2nd, Mr. E. Jones, gr. to E. Hyde, Esq.

The premier incurved bloom was found in Mons. A. Bahuant, and the premier Japanese in Vivian Morel, both from Mr. C. Edwards, gr. to W. Owen, Esq. Six bunches Anemone-flowered.—1st, Mr. C. Edwards; 2nd, Mr. Long. There were many honorary exhibits, that helped greatly in the effect produced.

Grapes were well shown by Mr. F. Davis, gr. to E. Tautz, Esq.; and Mr. C. Edwards.

Hardy fruit and vegetables from local exhibitors made a creditable and extensive display.

ROYAL HORTICULTURAL OF ABERDEEN.

THE acting directors of this society met in the office of the secretary (Mr. A. M. Byres) on the 21st ult.; Baillie Crombie was in the chair. The report, which was submitted to the annual meeting on Saturday, the 29th, states that the financial surplus on the year amounts to £435 18s. 9d., which, added to the balance brought from last year, makes £696 3s. 7d. at the credit of the society. Baillie Crombie was nominated for the chairmanship of the directors for the forthcoming year. The best thanks of the society were awarded to Lord Provost Stewart and Mr. A. M. Gordon, of Newton, chairman of the Aberdeen County Council, for their services in connection with the opening of the annual exhibition.

SCALE OF NUMBERS FOR SIZES OF APPLES.

It would be a great aid to uniformity in the descriptions of new varieties of Apples if we could adopt some scale of sizes, so that when we spoke of

a variety as being small, medium, or large, it would have a more definite meaning. At the present, the term medium size might convey to one person an entirely different meaning from what it would to another.

We notice in the last report of the Minnesota State Horticultural Society, an excellent suggestion by the Committee on Nomenclature. Speaking of the indefiniteness of the terms small, medium, large, and very large, they recommend a system of designating the size by a number from one to ten, starting at two inches in diameter, and adding one-quarter of an inch for each number. Numbers 1, 2 and 3 will then represent all under medium; 4, 5, 6 and 7, medium; and 8, 9 and 10, large. Any varieties, exceeding the diameter represented by these numbers would be designated as very large.

We have made a copy of this scale, and would suggest its adoption by our Association, for use in Canada.

Since writing the above we have corresponded

ratus, consisting of an india-rubber ball and air-chamber connected by a tube. A long brass-tube terminating in a nozzle serves to distribute the insecticide when pressure is made upon the india-rubber ball. The advantages claimed are that it does not choke, but will spray fluid containing sediments as readily as clean water. It will carry a distance of 12 feet. The spray is exceedingly fine, therefore economical, three minutes being occupied in distributing 1 quart of fluid at high pressure. Is easy to work; the spray reaches its height with a few pressures, and is then maintained with occasional attention. It sprays all ways equally well, including the upper and under surface of the foliage. We have tried it and found it to work well. In order to ensure perfect action, the fluid should not be allowed to get below a certain level, a matter which is easily arranged by filling up the can after it has been used, or by never allowing it to become quite empty. The inventor is Mr. Charles, chemist, Loughborough.

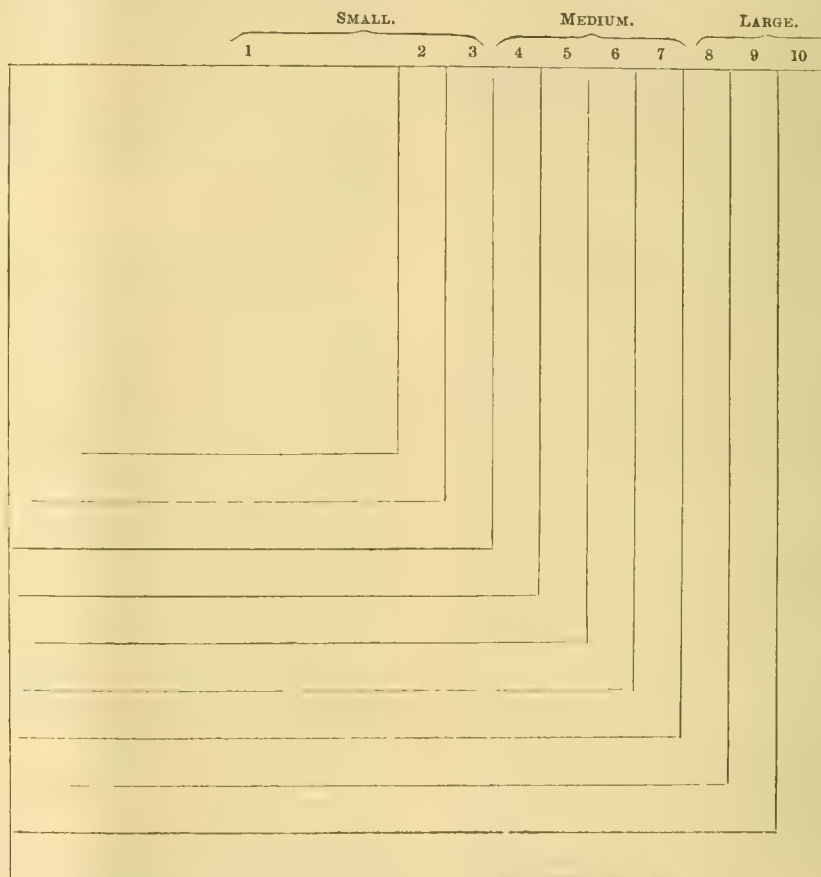


FIG. 87.—SCALE OF NUMBERS FOR SIZE OF APPLES.

with Mr. J. S. Harris, of La Crescent, Minn., who is the author of the table. He writes:—

"The square No. 1 should be exactly 2 inches, and each succeeding one $\frac{1}{4}$ inch larger, which will make the outside one, numbered 10, measure 4 $\frac{1}{4}$ inches, which is the size of the largest specimens of Apples grown in this State that have come under my notice. In describing by this method, the numbers are to stand for full average size of typical specimens of the variety. In numbering by this plan, I class all fruit measuring 2 inches or $\frac{1}{4}$ inch less, as size 1; from 2 to 2 $\frac{1}{4}$ inch, size 2, &c."

—*Canadian Horticulturist.*

NEW INVENTION.

ECONOMIC PEST SYRINGE.

MESSRS. MESSENGER & Co., of Loughborough, have submitted to us a useful form of syringe, or spray-apparatus, suitable for the application of insecticides to greenhouse plants. The liquid is contained in a tin can, provided with a handle for convenience of carriage, and to which is attached a spraying appa-

MARKETS.

COVENT GARDEN, November 3.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day but often several times in one day. ED.]

MARKET still depressed. Grapes exceptionally heavy. Prices without alteration beyond Kent Cobbs, which are easier, owing to supplies coming in better. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 0-3 6		Melons, each ... 0 6-1 3
Cobs, per 100 lb. ... 100 0		Pine-apples, St. Michael ... 4 6-5 0
Grapes, per lb. ... 0 6-1 6		
Lemons, per case ... 15 6-35 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ferns, various, doz. 4 0-9 0
Aspidistra, per doz. 15 0-30 0	— per 100 ... 5 0-8 0
— specimen, each 7 6-21 0	Ficus elastica, each 1 6-7 6
Asters, per doz. ... 6 0-12 0	Heliotrope, per doz. 3 0-6 0
Begonia, per doz. ... 6 0-12 0	Marguerite, per doz. 6 0-12 0
Chrysanthemums, p. doz. ... 4 0-12 0	Mignonette, doz. pots 6 0-12 0
— large plants, ea. 1 6 2 6	Palm, various, each 2 0-10 0
Cyperus, per dozen 4 0-10 0	— specimens, each 10 6 8 4 0
Dracena, each ... 1 0-5 0	Pelargonium, scarlet, p. doz. ... 4 0-6 0
Erica, various, per dozen ... 9 0-18 0	Solanums, per doz. 9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 4 0-8 0	Mignonette, 12 bun. 3 0-6 0
Asters, p. doz. bun. 6 0-9 0	Pelargonium, scarlet, per 12 bun. 4 0-6 0
Carnations, 12 blms. 1 0-3 0	12 sprays ... 0 6-1 0
Chrysanthemums, p. doz. blooms 1 6-9 0	Primula, double ... 0 6-0 9
— p. doz. bunches 4 0-10 0	Pyrethrum ... 2 0-4 0
Eucharis, per dozen 4 0-6 0	Roses, Tea, per dozen 1 0-2 0
Gardenia, per dozen 2 0-4 0	— coloured, dozen 1 6-3 0
Heliotrope, per doz. sprays ... 0 6 0 9	— yellow (Maréchal), per doz. 2 0-5 0
Lilac, white French, per bunch 6 0-6 6	— red, per dozen ... 1 0-2 0
Lilium Harrisii, doz. 6 0-12 0	Stephanotis, 12 sprays 4 0-6 0
— various, doz. ... 2 0-4 0	Tuberose, 12 blms. 0 3-0 9
Maiden Hair Fern, 12 bunches ... 4 0-6 0	Violets, Parme French, per bunch 4 6-5 0
Marguerite, per doz. bunches ... 3 0-4 0	— Czar, French, per bunch 2 6-2 9
Orchids ... 3 0-4 0	— small French, p. doz. bunches 2 0-2 6
Cattleya, 12 blms. 6 0-12 0	— small English, p. doz. bunches 2 0-3 0
Odonoglossum crispum, 12 blms. 2 0-6 0	

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-
Beans, French, lb. ... 1 0-1 6	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 2 0-3 0	— punnet ... 0 4-...
Carrots, per bunch ... 0 4-0 6	Parsley per bunch ... 0 3-0 8
Cauliflowers, each ... 0 3-0 6	Shallots, per lb. ... 0 6-...
Cucumbers, each ... 0 4-0 8	Spinach, per bushel 3 6-...
Endive, per dozen ... 2 0-3 0	Tomatoes, per lb. ... 0 6-1 0
Herbs, per bunch ... 0 2-1 0	Turnips, per bunch ... 0 4-0 6
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

Market still continues firm for best samples, 75s. to 85s.; dark soil, 52s. 6d. to 57s. 6d. J. B. Thomas.

SEEDS.

LONDON: Nov. 2.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report more business doing in American Red Clover Seed at advancing rates. Alsike White and Trefoil are without alteration. Rye-grasses, both Italian and perennial, keep firm. Of winter Vetches the supply is getting rapidly reduced. Choice new Königsberg Tares are now obtainable at tempting rates. There is no change in Rye. Canary seed keeps steady. In Hemp seed the late advance is well sustained. Mustard seed exhibits continued strength. In Rape seed the drift is upwards. For Peas and Haricots there is an improving trade. Linseed, Buckwheat, Zari, and Millet, realise former terms.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (bushel) for the week ending October 29, and for the corresponding period last year:—1892: Wheat, 28s. 8d.; Barley, 27s. 9d.; Oats, 17s. 11d. 1891: Wheat, 35s. 11d.; Barley, 30s. 7d.; Oats, 19s. 5d.

POTATOS.

SPITALFIELDS: Nov. 1.—Quotations:—Reading Wonder, 60s. to 70s.; Snowdrops, 60s. to 75s.; Sutton's Abundance, 50s. to 60s.; Bruce Magnums, 50s. to 65s.; Early Rose, 45s. to 50s.; Hebrons, 50s. to 65s.; Imperators, 50s. to 60s.; Magnums, 45s. to 65s. per ton.

BOROUGH: Nov. 1.—Quotations:—English Magnums, 55s. to 65s.; Hebrons, 60s. to 65s.; Snowdrops, 60s. to 70s. per ton.

FARRINGTON: Nov. 2.—Quotations:—Magnums, 60s. to 65s.; Snowdrops 65s. to 70s. per ton.

GENERAL AVERAGES: Nov. 2.—Magnums, 50s. to 70s.; Hebrons, 60s. to 70s.; Champions, 50s. to 65s.; Imperators, 50s. to 65s.; Early Rose, 45s. to 60s.; Snowdrops, 60s. to 75s. per ton.

FRUITS AND VEGETABLES.

SPITALFIELDS: Nov. 1.—Quotations:—Cauliflowers, 3s. to 7s.; Cabbages, 3s. to 5s.; Collards, 2s. 6d. to 4s. per tally; Seakale, 8d. to 9d. per punnet; Spinach, 1s. 6d. to 2s. per bushel; Brussels Sprouts, 1s. 6d. to 2s. 3d. per half-sieve; Greens, 1s. 3d. to 1s. 6d.; Carrots, 2s. to 2s. 6d.; Turnips, 2s. to 2s. 6d.; Parsley, 1s. 6d. to 3s. per dozen bunches; Beetroots, 2s. per bushel; Leeks, 1s. 9d. to 3s. 6d.; Endive, 8d. to 1s.; Cabbage Lettuce, 3d. to 6d.; Cucumbers, frame, 1s. to 1s. 9d. per dozen; Horseradish, 1s. to 1s. 2d.; Celery, 8d. to 1s. per bundle; Onions, English, 6s. to 6s. 6d. per cwt.; Spanish do., 5s. 6d. to 6s. 9d. per case; Belgian and Dutch do., 5s. 6d. to 6s. per bag of 110 lb.; Mustard and Cress, 1s. 6d. to 2s. per dozen baskets; Cos Lettuce, 8d. to 1s. per score; Carrots, 20s. to 50s. per ton; English Apples, 2s. 6d. to 6s. per bushel; American do., 9s. to 14s. 6d.

per barrel; Quinces, 1s. 9d. to 2s. 3d.; Pears, 3s. to 4s.; Prunes, 3s. to 4s.; Damsons, 3s. to 3s. 6d.; Bullaces, 2s. to 2s. 3d. per half-sieve; Tomatoes, English, 4s. to 6s. per peck; do. foreign, 1s. 6d. to 2s. per box.

BOROUGH: Nov. 1.—Quotations:—Cabbages, 3s. to 4s.; Marrows, 3s. 6d. to 4s. per tally; Cauliflowers, 1s. to 1s. 9d. per dozen; Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; Lettuces, 6d. to 1s. per score; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 1s. 6d. per dozen bunches; Onions, English 4s. 6d. to 6s. per cwt.; Horseradish, 2s. to 2s. 3d.; do., foreign, 1s. 6d. per bundle; Apples, English, 2s. 6d. to 10s. per bushel.

FARRINGTON: Nov. 2.—Quotations:—Turnips, 2s. 6d. per bag; Carrots, 2s. 6d. to 3s. do.; Parsnips, 3s. to 3s. 6d. do.; Onions, English, 5s. 6d. to 6s. per cwt.; Celery, 10s. to 11s. per round; Cauliflowers, 7s. to 7s. 6d. per tally; Onions, Spanish, 6s. 6d. to 7s. per case; Apples, Wellingtons, 4s. per bushel; King Pippins, 4s. do.; Pears, Marie Louise, 4s. 6d. do.; Damsons, 5s. do.; Lisbon Tomatoes, 9s. per box.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 115s.; do., inferior, 46s. to 75s.; Hay, best, 60s. to 112s.; do., inferior, 28s. to 50s.; and Straw, 20s. to 44s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
	Above (+) or below (−) the Mean for the week ending October 29.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.				
0	5	10	31	− 143	+ 257	1	211	40.6	27
1	4	15	34	− 339	+ 286	7	169	24.7	35
2	4	19	27	− 222	+ 216	1	165	23.1	25
3	3	34	15	− 189	+ 216	4	153	23.3	31
4	3	33	22	− 175	+ 217	1	147	20.4	31
5	3	36	11	− 157	+ 147	7	131	19.4	35
6	4	16	27	− 242	+ 234	12	167	38.4	32
7	3	28	13	− 166	+ 178	0	171	31.9	32
8	3	34	6	− 137	+ 132	2	155	25.0	28
9	4	31	18	− 191	+ 145	1	186	31.2	41
10	4	33	12	− 130	+ 157	5	159	31.2	38
* 3	—	46	0	—	3	42	10	155	23.9

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

THE following summary record of the weather for the week ending October 29, is furnished from the Meteorological Office:—

"The weather over our Islands was very changeable. Heavy rain occurred from time to time in almost all districts; but, over the greater part of the Kingdom, several intervals of clear bright weather were experienced. During the earlier days of the week showers of sleet or snow were general in the N.W., N., and E.

"The temperature continued very low until the week drew towards its close, when it rose with great rapidity, and became high for the time of year. The average values for the period were in most districts 3° or 4° below the normal, and in 'Scotland, N.' as much as 5°. The absolute minima were registered between the 24th and 26th, when the thermometer fell to 16° in 'Scotland, E.', 17° in 'Scotland, W.', 19° in 'Scotland, N.' and 'Ireland, N.' and to between 20° and 26° in all other districts, except

the 'Channel Islands,' where the lowest reading was 34°. The highest of the maxima, which were recorded either on the 28th or 29th, varied from 58° in 'Scotland, N. and W.,' to 62° in 'England, E.' and the 'Channel Islands.'

"The rainfall just equalled the mean in 'England, N.W.,' but exceeded it elsewhere; in 'Scotland, E. and W.,' 'England, S.,' and the 'Channel Islands,' the excess was large.

"The bright sunshine exceeded the mean in nearly all districts; the percentage of possible duration ranging from 38 to 41 in Ireland, from 25 to 35 in England, and from 27 to 35 in Scotland. In the Channel Islands the percentage was only 24."

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

PLANTER'S FRIEND.—Will some of our readers who are acquainted with Australian plants kindly inform C. PLATZ & SON, what species is meant by Planter's Friend.

NOTICES TO CORRESPONDENTS.

* PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

BEAN: J. W. The Purple Bean, Fève Violette, of the French, probably. It resembles the July Bean, and is seldom grown owing to the coppery colour of the seeds.

BOOKS: Botany and Bowness. Henfrey's Elementary Course of Botany, 4th edition (John Van Voorst, Paternoster Row, London, E.C.)—WILLOW CULTURE: R. G. H. There is no large new work on the subject in the English language, but there is a manual on The Cultivation of the Willow or Osier, by W. Scaling. (Published by W. Kent & Co., Paternoster Row, London; and by W. Allen & Son, Caxton House Long Row, Nottingham.)

CARNATION: H. W. P. The plant is suffering from the Carnation fungus, Helminthosporium echinulatum, but no grubs were found. Burn all the affected plants.

CHRYSANTHEMUMS AND ASPHALTED PATHS: T. M. It is quite possible that the material of which the paths are made might injure the plants if the roots touched it. Can you not place something for the pots to stand upon, or remove them to a vegetable-quarter away from the walk. Perhaps some of our readers who may have experience of tarred or asphalted paths would furnish some facts concerning this matter.

CORRECTION: Gardening Appointment in Gardeners' Chronicle, October 29, for Woodbaskett read Woodbastwick.

DOUBLE-FLOWED RICHARDIA ÆTHIOPICA: C. H. Not of rare occurrence.

DR. LYALL: J. B. The concluding paragraph was a mere memorandum, which was not intended for insertion. The moss was not named in honour of that botanist.

GRUB IN DOCK: R. W. M. Hepialus humuli—the ghost swift.

IRON-HURDLES: C. P. They are stock-in-trade, and therefore removable.

MAGNESIA: G. W. W.—It is used in the form of sulphate in admixture with salts of lime, potash; but we do not think it is, generally speaking, of much importance.

NAMES OF FRUIT: Anon. Apples: 1, Betty Geeson; 3, Crimson Queening; 4, Sturmer Pippin. Pears: 1, General Todleben; 2, Hayshe's Victoria; 3, Glout Morceau; 4, Small Uvedale's St. Germain; 5, Duchess d'Angoulême; 6, Styrian.—Hope. 1, Fine-apple Russet; 2, Calville Rouge Précoce; 3, Scarlet Nonpareil; 4, Striped Beefing. Pear: Beurié d'Amans.—W. Potter. 1, Brabant Bellefleur; 2, Court Pendu Plat.—John Plat. 1, Vicar of Winkfield; 2, Doyenné Boussoch.—W. B. It Cellini; 2, Worcester Pearmain; 3, Braban, Bellefleur; 4, Kentish Goff; 5, Hoary Morning; 6, probably Bedfordshire Foundling. Others undeterminable.—W. D. 1, Roundway Magnum

Bonum; 2, Tom Putt; 3, Cox's Pomona; 4, Royal Somerset; 5, New Hawthornden; 7, Court Pendu Plat; 8, Hoary Morning; 10, Gloria Mundi, probably.—*H. H.* 1, Scorpion; 2, Keswick Codlin; 3, Duchess of Oldenburgh; 4, New Hawthornden; 5, Worcester Pearmain.—*B. J.* 1, Baumann's Red Winter Reinette; 2, Duke of Devonshire; 4, London Pippin; 6, Kerry Pippin?—*No. 7.* 1, Williams' Bon Chrétien; 3, Marie Louise; 4, 4, Easter Beurré; 5, Irish Peach; 6, Rymer; 7, Lord Derby.—*W. R. F.* 1, Duchesse d'Angoulême; 2, Uvedale's St. Germain; 4, French Crab; 6, Minchall Crab.—*Geo. Wall.* 1, Brabant Belle-fleur; 2, Adams' Pearmain; 3, Warner's King; 4, Cox's Pomona.—*J. W.* (from October 22). 3, Gansell's Bergamot; Duchesse d'Angoulême; 5, General Todleben; 6, Comte de Flandres.

NAMES OF PLANTS: *G. M.* 1, *Adiantum decorum*; 2, *A. concinnum*; 3, *A. tenerum*; 4, *A. capillus-veneris*; 5, *A. Patotii*.—*J. W. W.* *Cattleya labiata* var.—*S. S. D.* 1, *Paulownia imperialis*; 2, seems to be *Basella tuberosa*.—*Pat.* *Colutea arborescens*, *Escallonia Philippiana*.—*Wm. S.* 1, *Crataegus pyracantha*; 2, *Correa alba*; 3, *Reineckia carnea variegata*; 4, *Sonerila Hendersoni*; 5, *Dichorizandra undata*.—*A Lover of Ferns.* 1, *Adiantum capillus-veneris*; 2, *Cibotium Scheidei*; 3, *Adiantum cuneatum* var.; 4, *Nephrolepis exaltata*; 5, *Lastrea tenericaulis*; 6, *Pteris serrulata cristata*; 7, *Adiantum trapeziforme Sancta Catherina*.—*J. W.* *Vanda tricolor* variety. We know of no distinguishing name for it.—*H. J. R. Firenze.* Your plant is *Gongora maculata*, which varies much in colour.—*W. B.* 1, *Alonzoa incisifolia*; 2, *Lycesteria formosa*.—*R. W. P.* *Odontoglossum grande*.—*Western Mail.* 1, *Dra-cæna albicans*; 2, *Begonia Weltoniensis*; 3, *B. argyrostigma elegantissimum*; 4, *B. scandens*; 5, 6, and 8, send in flower; 7, *Begonia metallica*; 9, *Toxicophlæa spectabile*.—*H. M. E.* Send again when in flower. Cannot be identified by the leaves only.

ORCHID-LEAF DISFIGURED: *K. E.* The *Cælogyne*-leaf shows evidence of the plant having been kept in too warm and close a house. Place the plant in a more airy situation, and afford it less water, unless when actively growing.

STRAWBERRIES AT CHRISTMAS: *T. T.* We should say that it is not possible, under ordinary circumstances, in this country.

SULPHATE OF COPPER AND SODA MIXTURE ON POTATOS: *W. Cousins.* The bine of the Red-skinned Flourball Potato showed by its firm tissues and general indications of freshness, that the one dressing on July 29 had been quite effectual in preventing the disease attacking a variety much subject to attack.

WEEDS IN LAWN: *Old Subscriber.* Purchase Watson's lawn sand, and apply it evenly over the turf after having spudded out the grosser weeds, and filled in the holes thus caused with loam. If you cannot get the lawn-sand, apply loam, leaf-mould and wood-ashes, all in a finely-sifted condition. Put them on the lawn at the end of the winter, bush-harrowing, and finally rolling the lawn. When it has disappeared afford another dressing.

WINTER-FLOWERING CARNATIONS: *Carnation.* In addition to those varieties you possess, select the following:—*Souvenir de la Malmaison*, pink, also the crimson and red varieties of it; *Queen Victoria*, crimson-flaked maroon; *Sir David Baird*, fine yellow; *Mrs. Reynolds Hole*, apricot, shaded terra cotta; *Flambeau*, yellow, flaked scarlet; *Winter Cheer*, scarlet, dwarf, compact, very free; *Germania*, fine yellow; *Lucifer*, rich scarlet, large and fine; *Miss Joliffe*, pink, free; and *Catherine Paul*, white.

WORM: *X* The creature is *Bipalium kewense* of Mosely. First observed at Kew, it has been found in many hothouses in England, the continent, S. Africa, and Australia. Its native country has not been ascertained.

COMMUNICATIONS RECEIVED.—*R. E.*—*H. W.*—*J. T. H.*—*J. U.*—*J. J.* (next week).—*H. W.*—*Lord B.*—*Dr. Dammer*, Berlin.—*E. S. & Co.*—*W. S.*—*H. J. Jones*.—*E. Russell*.—*J. Veitch & Sons*.—*C. Herrin*.—*Dr. Dammer*.—*G. Vince*.—*C. R. H.*—*J. A. H.*—*J. J. W.*—*S. H. B.*.—*Cornell University*.—*C. De B.*—*W. D.*—*J. B. W.*—*E. C.*—*J. Masterson*.—*R. A. R.*—*C. H.*, forestalled.—*F. E. T.*—*J. Hudson*.—*J. B.*—*J. Veitch & Sons*.—*W. E. G.*—*J. T.*—*H. W.*

PHOTOGRAPHS RECEIVED WITH THANKS.—*W. K.*, Blackmore.—*J. Curtis*.—*W. Harrow*.

SPECIMENS RECEIVED.—*R. C. W.*—*J. B. D. H.*—*M. Brodin*.—*E. G. Allen*.—*G. S.*—*H. R.*—*J. A. C.*.—*Reginald*.—*W. D.*.—*E. V. Sherring*.—*Pat.*—*T. K.*—*J. Julian*.



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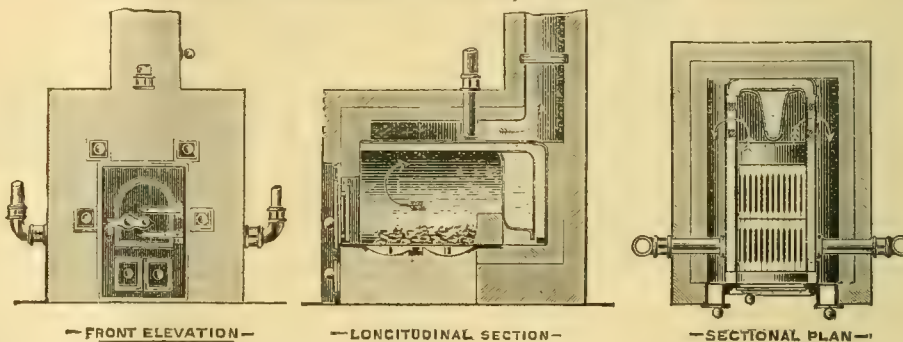
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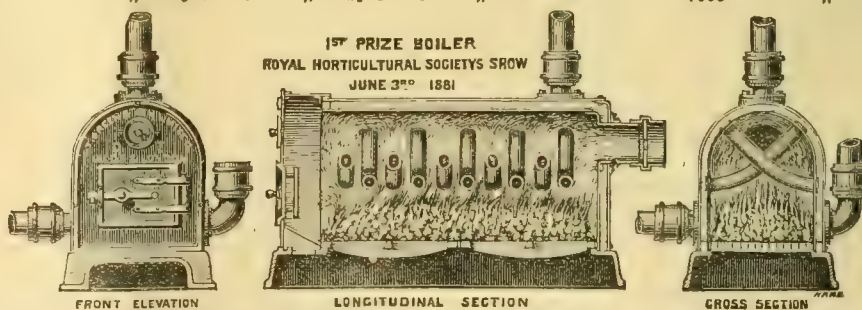


The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box, water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

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M B 1	3 ft. 2 in. long by 2 ft. 0 in. wide by 2 ft. 0 in. deep	1000 ft.	Price £15 0 0
M B 2	4 0 " by 2 0 " by 2 0 "	1280	" 21 0 0
M B 3	5 0 " by 2 3 " by 2 6 "	2200	" 32 0 0
M B 4	6 6 " by 3 0 " by 3 0 "	4000	" 60 0 0
M B 5	8 6 " by 4 0 " by 3 9 "	7000	" 85 0 0

Calculated to heat 4-in. piping as follows:—



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F	2 3	by 5 0	by 2 6	1750	43 0 0
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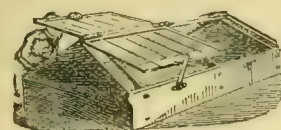
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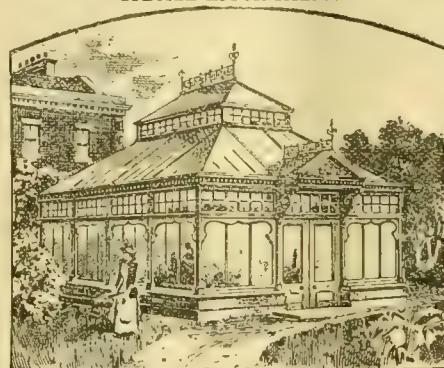
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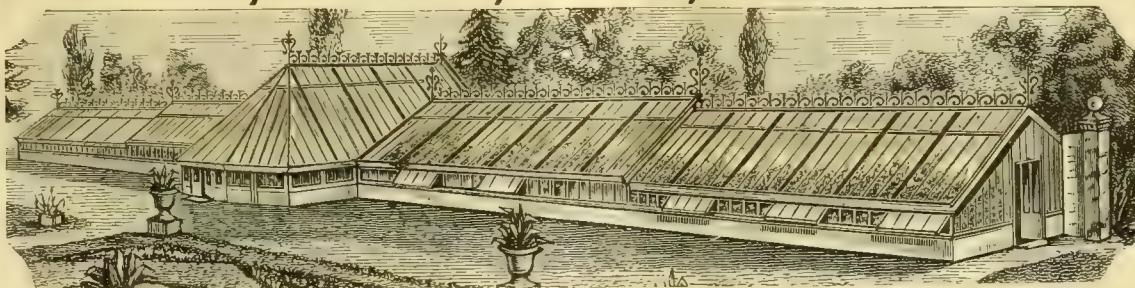
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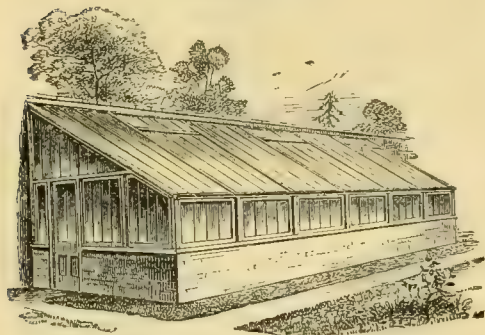
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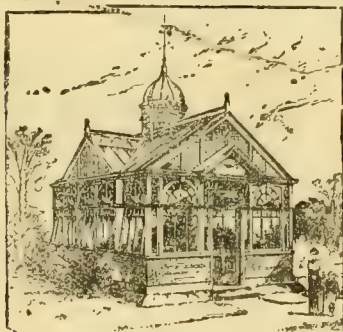
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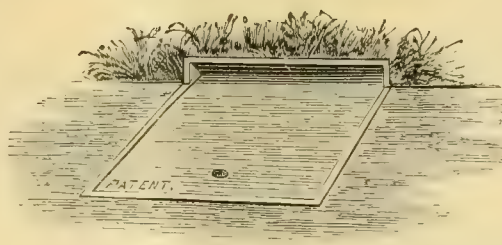
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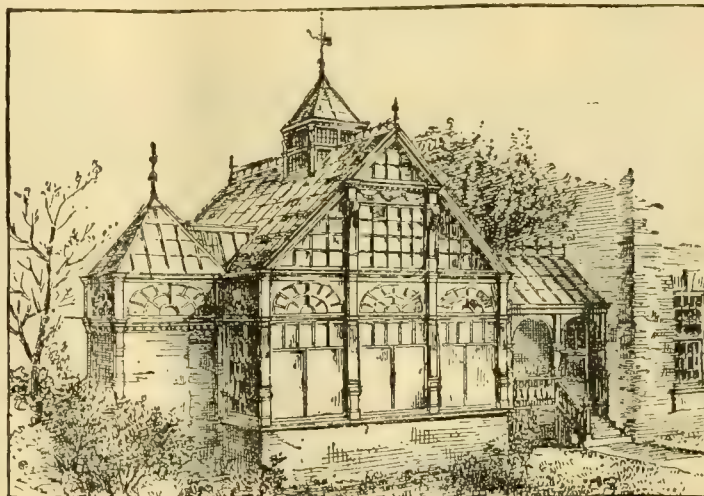
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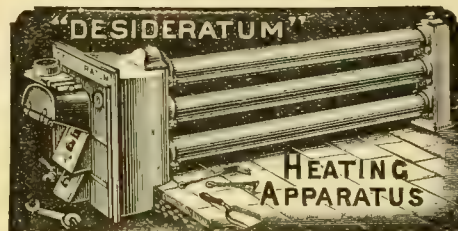
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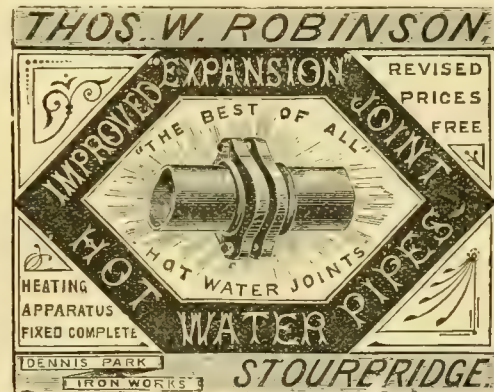
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MESSRS. SQUELCH AND WOOD, FRUIT SALESMEN, North Row, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of GRAPES, TOMATOS, CUCUMBERS, and all kinds of HOT-HOUSE PRODUCE. Our business connections being amongst the best houses in London, we are in a position to secure the highest prices for all choice goods. Account Sales forwarded daily, and cheques weekly, or daily if required. Empties and labels supplied. Reference, London and County Bank, Covent Garden Branch.

CHRYSA NTHEMUMS, Large Flowers. Address offers of Cut Flowers to—TONY FOURNIER, 21, Rue de Louvre, Paris. Terms cash.

WANTED, LAWN TURF, Good; or Old Lawns, if possible. State quantity and price to S. SMITH, Lavington, Putney Heath, Surrey.

SUTTON'S SINGLE FLORIST'S TULIPS FOR OPEN GROUND.

SUTTON'S SPECIAL SELECTION, including many of the finest flowers grown, brilliant in colour, and elegant in form. Per dozen, 2s. 6d.; per 100, 17s. 6d.; carriage free.
FINEST MIXED, all white grounds, choice (equal to named sorts). Per dozen, 1s. 6d.; per 100, 10s. 6d.; carriage free.

SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

BULBS for Present Planting.—Selected HYACINTHS, TULIPS, NARCISS, CROCUSES, SNOWDROPS, SCILLAS, &c. Best qualities at cheapest rates. Priced Catalogue post-free.

DICKSONS, Bulb Growers and Importers, Chester.

CÆLOGYNE CRISTATA, well grown, with bloom spikes; also the CHATSWORTH, TRENTHAM and MAXIMA VARIETIES, cheap.

TRUSTEES, late J. STEVENSON, Timperley, Cheshire.

VICTORIA PLUMS.—Rough Fruiting Trees, 35s. and 55s. per 100. Stout Standards, in quantity. Stout Morello CHERRIES, WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

DESCRIPTIVE CATALOGUE.—ROSES, FRUIT TREES, RHODODENDRONS, CONIFERS, DECIDUOUS and EVERGREEN TREES and SHRUBS, FOREST TREES, CLIMBERS, &c., free on application.
H. LANE AND SON, Nurseries, Berkhamsted, Herts.

500 IRIS "Ochroleuca," true, strong roots, 6s. per dozen, 30s. per 100; to clear ground; free on rail; sample 1s. by post.—W. J. WATSON, Seedsman, Town Hall Buildings, Newcastle-on-Tyne.

FOR SALE, ROYAL GEORGE PEACH TREE, fan-trained, 16 feet wide, 12 feet high; was moved two years ago. Also VIOLETTE HATIVE NECTARINE, on 4½ feet stem, 16 feet wide, 8 feet high; was moved last season. Call and see, or write to—W. H. DIVERS, Ketton Hall Gardens, Stamford.

In Chancery.

FRUIT TREES.—80,000 very choicest kinds. Apples, Pears, Cherries, Peaches, Filberts, and Plums; 20,000 noble, tall, standard Victoria Plums and Damsons, 4 and 5-yr. old; and 2000 Rhododendrons and pretty Shrubs, Roses, and Hardy Flowers. In small or large quantities, Purchasers' selection. See CATALOGUES.—LAND STEWARD, Hon. GERTRUDE JONES, Churchfield, Cradley, near Malvern.

Many Acres of Lilies of the Valley!

T. JANNNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year-old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
T. JANNNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

BARR'S BULBS, WINTER and SPRING.

The following Catalogues free on application:—Catalogue of beautiful flowering Bulbs for all seasons. Catalogue of all the best and most beautiful Daffodils (Narcissi). Catalogue of all the best and most beautiful Hardy Perennials. List of rare and beautiful Croci and Meadow Saffrons. COLLECTIONS of BULBS, 10s. 6d., 21s., 42s., 63s., & upwards. COLLECTIONS of DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s. Hyacinths, Tulips, Crocus, Daffodils, Iris, Peonies, Lilies, &c. BARR & SON, 12, King Street, Covent Garden, London, W.C.

J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 10, Victoria Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

SALES BY AUCTION.

Choice Bulbs from Holland.

MR. J. C. STEVENS will **SELL** by AUCTION, every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice **BULBS** arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Wednesday Next.

Choice named **DWARF ROSES** from an English Grower, small collection of **LAURELS**, **ACUBAS**, **PRIVET**, and other **ORNAMENTAL SHRUBS**; **CARNATIONS**, **PINKS**, **PICOTEEES**, and other **BORDER PLANTS**; **LILIUms** from Japan, 15,000 **LILY OF THE VALLEY CROWNS** and **CLUMPS**; **NARCISUS** and **DAFFODILS**, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 16.

On view morning of Sale, and Catalogues had.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY, at 12 o'clock, large consignments of first-class

HYACINTHS, **TULIPS**, **CROCUS**, **NARCISUS**, and other **BULBS** from Holland. Lotted to suit the Trade and Private Buyers. 12 tons are sold every week.

On view morning of Sale, and Catalogues had.

Monday Next.

500 **AZALEA INDICA**.

200 **DWARF ROSES**, to name.

A CONSIGNMENT of about 300 **BULBS** of **PANCRATIUM SPECIES**, from the West Indies; **SPIRÆA JAPONICA**, choice named **NARCISSUS**, **HARDY BORDER PLANTS** and **BULBS**, English-grown **LILIES**, **GREENHOUSE** and **STOVE FERNS**, from an English Nursery; **ORNAMENTAL PLANTS**, **LILIUm HARRISI**, 100 **CRINUm ORNATUM**, **DAFFODILS**, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, November 14, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Tuesday Next.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on TUESDAY NEXT, November 15, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., a small COLLECTION of **ESTABLISHED ORCHIDS**, amongst them some grand specimens and rare varieties, such as—

<i>Lælia</i> Digbyana, with forty bulbs	<i>Lælia</i> anceps Schoderiana
<i>Cœlia</i> bella	<i>Sobralia</i> macrautha nana, fine specimen
<i>Cattleya</i> Gaskelliana albena	<i>Coleogyne</i> speciosa Rollissoni, large specimen
<i>Lælia</i> anceps Percivaliana	<i>Cypripedium</i> grande, fine specimen
<i>Trichopilia</i> suavis alba	<i>Anæcchilus</i> versicolor, specimen
<i>Lælia</i> purpurata alba, grand specimen	<i>Saccolabium</i> bellinum, in bud
<i>Dendrobium</i> crepiditulum album	
<i>Cymbidium</i> giganteum, extra grand specimen, very dark variety, in flower	

Large plants of *Masdevallias* of the choicest sorts, and other valuable **ORCHIDS**.

On view morning of Sale, and Catalogues had.

Barnham Nurseries, near Bognor.

TWO DAYS SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, as above, by order of Mr. S. S. Marshall, on TUESDAY and WEDNESDAY NEXT, November 15 and 16, at 12 o'clock each day, a portion of the **GENERAL NURSERY STOCK**, comprising 6000 **Conifers**, **Evergreens**, and **Deciduous Shrubs**, 12,000 splendidly-grown **Fruit Trees** of the best varieties, including **Maiden**, two-year, **Standard** and **Fruiting Pyramid Apples**, **Pears**, **Plums**, **Cherries**, and several hundreds of extra size trained **Pears**, **Apples**, and **Plums**; 25,000 **Crab Stocks**; 1000 **Specimen Border Shrubs**, 2 to 8 feet; 1000 **Lilacs**, 3 to 7 feet; 1500 **Box**, 1 to 2 feet; 2000 **Standard and Dwarf Roses**, of the best varieties; 10,000 **Manetti Stocks**; **Ornamental Trees** for Avenue planting, consisting of **Sycamore**, **Horse Chestnuts**, **Limes**, &c., and other **Stock**.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Thursday Next.

325 AZALEA INDICA	36 ASPIDISTRAS
100 " MOLLIS	26 RHODODENDRONs
50 DEUTSCHE PERLE AZALEAS	24 Fine selected plants of AZALEA Flag of True
24 DRACÆNA INDIVISA	250 SPIRÆA JAPONICA

An importation of **Bulbs** of **EUPHARIS AMAZONICA**, choice-named **NARCISSUS**, **CARNATIONS**, and **PICOTEEES**, **hardy BORDER PLANTS** and **BULBS**, English-grown **LILIES**, **GREENHOUSE** and **STOVE FERNS**, **DAFFODILS**, **ORNAMENTAL PLANTS**, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, November 17, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Thursday Next.

13,000 **NARCISSUS**, Paper White grandiflora (large-flowered).
16,000 **DOUBLE ROMAN HYACINTHS**.
5,000 **DOUBLE AFRICAN TUBEROSES**.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE, on THURSDAY NEXT, November 17. The whole of the **Bulbs** will be included in this Sale.

Thursday Next.

GREAT SALE OF PALM and other SEEDS.

90,000 **ARAUCARIA EXCELSA**
(These have been specially collected, and packed in damp-proof sand, and are expected to arrive in fine condition.)

21,000 **KENTIA BELMOREANA**
17,500 " **FORSTERIANA**
1,250 " **CANTERBURYANA**
1,800 **CASTANOSPERMUM AUSTRALIS**
(The most beautiful of Australian Evergreen Trees)
114,000 **CORYPHA AUSTRALIS**
8,000 **MACROZAMIA SPIRALIS**
15,000 **PHENIX RECLINATA**
10 lb. **EUCALYPTUS GLOBULUS**

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on THURSDAY NEXT, November 17.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 18, at half-past 12 o'clock, **ESTABLISHED ORCHIDS** from various sources.

On view morning of Sale, and Catalogues had.

Great Northern Railway.

WITHOUT THE LEAST RESERVE, GREAT TRADE SALE OF ORCHIDS.

Owing to the Great Northern Railway Company requiring a portion of the Nursery and Orchid-houses for the erection of a Railway Station on the Establishment,

MESSRS. PROTHEROE AND MORRIS have been instructed by Messrs. F. Sander & Co., St. Albans, to **SELL** by AUCTION, on TUESDAY, November 22, about 10,000 **ORCHIDS**, to make the necessary room. This will include thousands of **ODONTOGLOSSUM ALEXANDRE**, of our famed type, absolutely unflowered; large quantities of **Market CATTLEYAS** and **LELIAS**, &c. The bulk of the **Orchids** offered in this Sale will be specially suitable for cut-flower purposes and growing for Market.

The plants will be removed, for convenience sake, to Messrs. Protheroe & Morris' Rooms, 67 and 68, Cheapside, London, E.C.

Cliffe, near Rochester.

SECOND PORTION of Mr. Horne's Immense STOCK. IMPORTANT TO FRUIT GROWERS, MARKET GARDENERS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions to hold a **Great FRUIT TREE SALE**, on the Premises, Perry Hill, Cliffe, near Rochester, on WEDNESDAY, November 30, comprising:—

2,500 of the New Dessert **APPLE Beauty of Bath**.
500 one and two-year **Bismark's (New) APPLE**.
20,000 **Standard**, Half-standard, and **Maiden APPLES**.
25,000 **Bob and Lad GOOSEBERRIES**.
25,000 **Baldwin BLACK CURRANTS**.
2,400 **John Ruskin STRAWBERRIES**, for forcing.
75,000 **Paxton**, **Noble**, and **John Ruskin STRAWBERRIES**, from open ground.
25,000 three-year **Connover's Colossal ASPARAGUS**, &c.

May be viewed. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Preliminary Notice.

EXPIRATION OF LEASE.

THIRD CLEARANCE SALE OF CHOICE ORCHIDS. (Unreserved Sale.)

By order of Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, Yorkshire, and Clapham, S.W., comprising—

CATTLEYA LABIATA, in Sheath
LELIA PURPURATA
GRANDIS TENEBROSA, the true variety
ODONTOGLOSSUM ALEXANDRE, Pachy type
PESCATOREI
VARIETIES
ONCIDIUMS, **MASDEVALLIAS**, and **CYPRIPEDIUMS**, in variety, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, December 2.

WANTED, TO RENT, a small NURSERY, about ½-acre, 200 or 300 feet of Glass, suitable for **Cucumbers**. Small cottage. Apply, S. C. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, within 15 miles of London, about TWO ACRES of GROUND, suitable for Market Gardening and erection of Glasshouses.—G. W. B., 11, Victoria Street, Paddington, W.

WANTED, a small compact GLASS NURSERY, for Fruit Growing, with good Dwelling-house.—**HORTUS**, Cambridge Lodge, Fenwick Road, East Dulwich, S.E.

To Growers for Market.

FOR SALE, the LEASE of a ¼ of an Acre of GARDEN, 3 GREENHOUSES, making 150 feet long by 12 wide, well heated, 15 miles from London, 15 minutes from Rail. Rent £12; small Cottage adjoining, held on agreement at 4s. per week.—For particulars, apply W. K. T., *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

To Florists and Nurserymen, &c.

FOR IMMEDIATE DISPOSAL, the valuable LEASEHOLD NURSERY, containing five large Greenhouses (well heated), two Frames, Bedding-out Ground and small cottage and tool sheds adjoining.—Particulars of R. PECKITT & CO., House Agents & Valuers, 1, Wellington St., Woolwich.

FOR SALE.—A small genuine NURSERY FLORIST and JOBBING BUSINESS, doing an increasing Trade.—Full particulars of S. C. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO be LET or SOLD (Freehold), with Immediate possession, an **Outdoor ROSE NURSERY**, planted with all the Leading Market sorts, consisting of 5 acres, with two Dwelling-houses, Sheds, Stabling, &c., situate on the high road, within easy driving distance of London Markets. Apply, J. CROUCH, Houndsfield, Lower Edmonton.

Warwickshire.—Erdington Hall Estate.

TO BE LET, an excellent **FARM**, situate within 3 miles of Stephenson Place, Birmingham. There is a large House and extensive Buildings, and the Land is well adapted for Market Gardening, being close to the City. It consists of Arable and Pasture Land, and is about 173 Acres. For Rent and Particulars, apply to Messrs. J. C. FOWKE AND SON, Solicitors, 120, Colmore Row, Birmingham.

ORCHIDS.—New and rare species, a special feature. Catalogue forwarded post-free on application. SEEGER AND TROPP, Ltd., Orchid Nursery, East Dulwich, London, S.E.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

CARNATION Mrs. Reynolds Hole, the popular terra cotta, strong rooted layers, 20s. per 100; £9 per 1000. Cash. CRANE AND CLARKE, Hillside Nursery, March, Cambs.

GOLDEN EUONYMUS, good bushy stuff, for Potting. Splendid Colour, H. H. MOORE, Chichester.

GARDENIAS.—About 150 good strong healthy plants in 6, 8, and 10-inch pots, well set with Bud. Would Exchange with hardy CLIMBING ROSES, or Foliage Stove Plants. J. PREATER, The Gardens, Rocksidge, Okehampton, Devon.

RASPBERRY CANES.—Norwich Wonder and Fastolf, 4s. 6d. per 100, 35s. per 1000. DUTCH RED CURRANT TREES (strong, 3-yr. old), 2s. 6d. per dozen, 10s. per 100. All Carriage paid. Postal order with Order. R. H. BATH, Osborne Farm, Wisbech.

BERLIN LILY OF THE VALLEY for Forcing, quality unsurpassed in the Trade, 35s. per 1000, 4s. per 100. LILIUm AURATUM, direct importation from Japan, 30s. per 100; 5s. per dozen. WALSHAW AND SON, Scarborough.

To the Trade.

SEAKALE, extra strong for Forcing.—Prices and Samples on application. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton.

DOUBLE NEAPOLITAN VIOLETS.—Magnificent Clumps crowded with Buds. Will Flower all Winter and Spring. First size, 12s. per dozen; second, 6s. per dozen. Large Czar, do., do., half above prices.—FOREMAN, Stanmore Park Gardens, Middlesex.

FOR SALE, cheap, TUBEROUS BEGONIA.—600 Finest 2 and 3-year old Tubers, magnificent strain; large flowers; mixed colours. 20s. per 100. WILLIAM DAY, South View, Sandgate, Sheff.-ld.

Palms, Palms, to offer.

KENTIAS, ARECAS, CUCOS, LATANIAS, CORYPHAS, and other varieties, in splendid condition for Table and Conservatory Decoration. Price per dozen, 24s. to 30s., in 45s and 32s; cheaper by the 100. 10,000 small Palms to offer. Price on application to W. CROSSLEY, Nurseryman and Seedsman, 13, Vicar Lane, Leeds.

30,000 ROSES.—Guaranteed best sorts grown, and true to name. These will thrive and bloom satisfactorily, when those tried on the Manetti Stock cease to exist.

12 good Hybrid Perpetual Roses on Seedling Briar, my selection, 5s. 6d.; 24, 10s. 6d.; 100, 37s. 6d.; 12 Teas, 9s.; extra good Marchal Niels, 1s. 6d.; 6 for 7s. Carriage free for cash with Order. Catalogues on application to R. W. PROCTOR, Rose Grower & Nurseryman, Chesterfield.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD AND NURSERIES, GARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS, FERNS, &c., &c.

CATALOGUES, with full particulars, post free on application.

Special Quotations to the Trade.

EXHIBITIONS.

WAVERLEY MARKET, EDINBURGH.—
GRAND CHRYSANTHEMUM EXHIBITION,
November 17, 18, and 19. City of Edinburgh CUP, value £20,
for 48 Blooms (Japanese), not less than 36 varieties, and many
other VALUABLE PRIZES.—Schedules on application to the
Secretary, ROBERT LAIRD, 17, Frederick Street.

**HEREFORDSHIRE FRUIT AND CHRYS-
ANTHEMUM SHOW.**

The FIRST ANNUAL SHOW will be held in the SHIRE
HALL, HEREFORD, on WEDNESDAY and THURSDAY,
November 23 and 24, 1892, when the following Prizes, amongst
others, will be offered in the Open Classes:—

COLLECTION OF APPLES, Culinary and Dessert, 100
dishes, First Prize, 100s.; or Cup; Second, 40s.; Third, 20s.

COLLECTION OF PEARS, 21 dishes, First Prize, 50s.;
Second, 20s.; Third, 10s.

GROUP OF CHRYSANTHEMUMS, in pots, space not to
exceed 12 by 7 feet, First Prize, 10s.; or Cup; Second, 40s.;
Third, 20s.

Schedule of Prizes, and particulars, on application to—
7, Clifford Street, Hereford. Mr. JOHN OUGH, Hon. Sec.

City and County of Newcastle-upon-Tyne.

TO NURSEYMEN, &c.

TENDERS are required for Supplying,
Planting, and Maintaining TREES and SHRUBS on
the Town Moor on the West side of the North Road. Specifi-
cation, form of Tender, and all other information can now be
obtained at the City Engineer's Office, Town Hall, Newcastle.
Sealed Tenders, addressed to the City Engineer, and endorsed
"Tender for Tree Planting," to be left at his offices on or
before FRIDAY, November 18. The lowest or any Tender not
necessarily accepted.

CARNATIONS, Old Crimson Clove (best
variety), splendid, well-rooted plants, 13s. per 100,
F. NORMAN, Bengie Hill, Evesham.

AUSTRIAN PINES, 4, 5, 6, and 7 feet high,
extra fine. Cheap, to clear, for Cash.
W. TROUGHTON, Nurseryman, Preston.

PEACHES and NECTARINES.—Fine
Standard-trained Trees; well-ripened fruiting-wood;
fibrous roots.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

10,000 DWARF ROSES, strong plants,
in 60 sorts, 25s. per 100; £12 10s. per 1000.
Apply— GRAY AND SONS, Brox Nursery, Chertsey.

EARLY CHRYSANTHEMUM CUTTINGS
—Madame Desgranges, light and dark bronze, and good
yellow, in large or small quantities. Also Giant Market
MIGNONETTE, in 60s., for Pott'ng-on.
J. CHIPPERFIELD, Thames Valley Nursery, Hampton Hill.

D A F F O D I L
COUNTESS OF ANNESLEY.

Splendid large cultivated Bulbs, to produce two and three
flowers each, free by post, at 6s. 8d. per dozen.
Also LIST of SURPLUS STOCK of NEW and RARE
SHRUBS, 20 per Cent. under Catalogue price, on application
to— Mr. RYAN, Castlewellan, co. Down.

P E A C H T R E E S.—
Extra large and good Trees, subject to not being sold
on receipt of order.

Royal George	Barrington	Early York
Hale's Early	Dr. Hogg	Nectarine Peach
Princess of Wales	Royal Charlotte	Early Alexandra
Waterloo	Alexandra Noblesse	

The above were lifted last season.
W. E. MARSHALL, Abbeywood, Kent.

GOOSEBERRIES.—Cheap, in 25 or more
varieties. Good trees, and large berrying kinds,
20s. per 100.

MULBERRIES, Black, good stems and heads, 5s. and 7s. 6d.
each. Cash with order. Usual price to Trade. Catalogues
post free on application.

HENRY CORDER, The Nurseries, Bridgwater.

40,000 BULBS very cheap, to clear, for
cash with order, at per 1000:—Single
Daffodils, 8s. and 5s.; Double Snowdrops, 15s. and 10s.;
Single, 14s. and 9s.; Star of Bethlehem and Pheasant Eye, 8s.;
Bittern; Twin Narciss, extra fine, 10s.; Double White Narciss,
14s. and 10s. Ceteris, Grove Red, 2s 6d.; Pink, 3s.; Giant
White, 4s. per lb. Cucumbers Telegraph and Clumber Seed-
ling, 15s. per oz., 2s. per 100.

G. YORKE, Bulbist and Seedsman, Retford.

FERNS! FERNS!!—Trade.—Greenhouse and
Stove, 25 saleable sorts, in 2½-in. pots, 12s. per 100; 10
best market sorts, in 4½s, 6s. per doz.; good stores, 6s. per 100.
Large Adiantum cuneatum, value in fronds, 8s. per dozen.
Cyperus, Aralias, Solanums and Primulas, in 4½s, good value,
6s. per doz. Palms, Ficus, Erica hyemalis and Dracaenas, in 4½s,
1s. each. Selected P. tremula and A. cuneatum, for making
large plants quickly, 16s. and 20s. per 100, well packed, put
on rail free for cash with order.—J. SMITH, London Fern
Nurseries, Loughboro' Junction, London, S.W.

HARTLAND'S DAFFODILS!!!

DAFFODILS!—"Original Little Book" for the million.
BULBS!—"Little Book." A Cheap Edition. The most unique
and select for Amateurs.

FLORAL ALBUM! of Conference Daffodils, illustrated by
GERTRUDE HARTLAND. Copyright edition. Engraved by
WELCH, of London, the price of which is 2s. 6d., but is
presented gratis with Bulb orders value 40s.

The Daffodil Bulbs are magnificent.

WM. BAYLOR HARTLAND, Seedsman, 24, Patrick St., Cork.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to SANDER'S, St. Albans. The finest
stock of Orchids in the World.—30 minutes from St. Pancras.

ORCHIDS.—We have PURCHASED the
fine COLLECTION formed by H. COLEMAN, Esq.,
The Cedars, Banbury. Inspection invited. Please write
for LIST.

W. L. LEWIS AND CO., Chase Side, Southgate, London, N.

LONDON PLANES.—Large Stock, very fine
trees, good stems, splendid roots, all sizes from 8 to 18 feet
high, and all other leading kinds of Standard Trees suitable for
roadside or park planting.

IRISH IVIES in pots, 3 feet to 12 feet.

SHRUBS, TREES, ROSES, FRUIT TREES, CLIMBERS
&c., in endless variety. Specially low prices for quantities.
Descriptive Priced LISTS free, also of BULBS, SEEDS,
PLANTS, TOOLS, and REQUISITES.

W. FROMOW AND SONS, Sutton Court Nurseries, Chis-
wick, W. Branch Nurseries: Hounslow and Acton Green.
Established 1829.

CHRYSANTHEMUMS.

We are indeed delighted, and it must be a surprise to all to
see, year after year, and this season more than ever, how con-
spicuous are the varieties introduced by us, not only at Exhibi-
tions, but in Private Collections, and at every Market they are
the theme of conversation and admiration. Our "Colonel
Smith" of last year adds another memento to our reputation.

Come and See.

Our proper method of preparing stools and cuttings for propa-
gation has proved to be of the greatest advantage; the
cuttings and plants supplied by us are of the greatest value in
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JOURNAL OF HORTICULTURE, July 21, 1892,

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GARDENERS' CHRONICLE, November 5, 1892.

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MAPLES, SYCAMORES, BEECH, Black NORWEGIAN BIRCH, CHESTNUTS, ELMS, LIMES, PURPLE-LEAVED PLUM, WEEPING TREES, &c.

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Rose Growers by Appointment to Her Majesty the Queen,

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ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
" WIERO LACINIATUM, 10 to 14 feet, girth 3 to 5 inches.
" NEGUNDO VARIEGATUM, Standards, 8 to 10 feet.
" REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.
" SCHWEDLERI, 12 to 18 feet, girth 4 to 8 inches.
" WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.

BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.

CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
" Double White, 14 to 16 feet, girth 6 to 8 inches.
" Scarlet, 12 to 18 feet, girth 4 to 10 inches.

" Spanish, 12 to 14 feet, girth 4 to 5 inches.
ELMS, English, 10 to 12 feet, girth 3 to 8 inches.
" Guernsey, 16 to 18 feet, girth 7 to 9 inches.

LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
" EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.

" Silver-leaved (Tilia argentea), 12 to 14 feet, girth 5 to 6 inches.

LIQUIDAMBAR, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 12 to 14 feet, girth 4 to 5 inches.

" Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
PLANES (English-grown), 12 to 16 feet, girth 4 to 8 inches.
POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.

SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
" Purple, 14 to 16 feet, girth 6 to 7 inches.

THORNS, Double Pink, 8 to 10 feet.

" Scarlet, 8 to 10 feet.

" White, 8 to 10 feet.

TULIP TREES, 8 to 10 feet.

WALNUT, Common, 10 to 12 feet.

WEeping TREES.

BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
" Weeping, Purple, Pyramids and Standards, 7 to 12 feet.

BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.

" Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.

ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.

LARCH, Weeping, Pyramids, 8 to 10 feet.

POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.

KNAP HILL NURSERY, WOKING, SURREY.



THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 12, 1892.

INGESTRE HALL.

THE old hall at Ingestre, built in 1331, and which was burnt down in 1882, was always allowed to be by capable judges one of the best surviving instances of Elizabethan domestic architecture. All the windows on the first and second floors were mullioned, and at each extremity of the south front, the principal façade, semicircular bay windows, continued up to the carved balustrade of the roof, stood out boldly, and in the centre was the usual projecting porch. There was an absence of gables, but this was atoned for by some fine Oriel windows. When the house was rebuilt after the fire, the architect tried to follow, as much as was possible, the original plan, and since a great quantity of the old bricks were used again, it will soon lose its present modern appearance.

Ingestre Manor was included in the earldom of Stafford in Domesday Book; in the reign of Cœur de Lion it became by marriage the property of the Chetwynds, who were not originally a Staffordshire family. There was an unbroken succession till 1784, when the property again passed in the same way to Lord Talbot, who took the name of Chetwynd-Talbot. The most celebrated of the Chetwynds of Ingestre, was the antiquary, Walter Chetwynd, who was the Mæcenas of Plot, the author of the *Natural History of Staffordshire*, a very fantastic and antique tome. In 1860, after a long law suit, the House of Lords decided that the will of the seventeenth Earl of Shrewsbury in favour of the infant son of the Duke of Norfolk, was invalid so far as the entailed property was concerned. The successful claimant was Earl Talbot of Ingestre, who took the title of Earl Shrewsbury and Talbot, and thus became in addition the owner of Alton Towers, the most magnificent seat, not only in Staffordshire, but probably in England also.

The pretty church, built by "the antiquary," and surrounded by old tree-like Yews, is within a hundred yards of the south front. By ascending the tower, a bird's-eye view of the country can be obtained. To the south a turf-road stretches away to Cannock Chase, to the west are the thickly timbered woods of Chartley Park, where there is a herd of the wild cattle, while immediately below is the home park. This park presents a very pretty landscape, owing to glimpses of the Trent winding through it, and the gentle slope up to a ridge of trees. This line of big trees prevents the deer park, 400 acres in all, from being part of the view. On the east side a curving lawn has a background of shrubbery and coniferous trees, extending back a goodly distance. The walk thither passes the oft-written-about Irish Yews. There are four of them, forming a solid square, with a side of 24 feet

PLANTING SEASON.

HARDILY-GROWN

FOREST, FRUIT,

& ALL OTHER

TREES & PLANTS, EVERGREENS, ROSES, &c.

NURSERIES 400 ACRES:

VERY EXTENSIVE STOCK. Inspection Invited.
Priced Catalogues Gratis & Post Free.

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(LIMITED)

CHESTER.

VICTOR POTATOS

(SHARPE'S).

This favourite first early Potato, suitable for any Garden, indispensable for Forcing and Early Borders, and likely to take the first rank amongst first earlies for market use. Quality and yield all that could be desired. One well-known market grower has this year had a yield of 15 tons per acre on a large acreage. London and Manchester salesmen speak highly of their quality, and report that Victors will keep their bloom and have a fresh appearance after being in the market some days, when other early Potatoes have become discoloured and unsaleable.

The stock we offer is the true yellow-fleshed variety and not the white variety, which is often substituted.

Price per cwt. and ton. State requirements to

W. W. JOHNSON & SON,
Seed Growers and Merchants, Boston, Lincolnshire.

SPECIAL TRADE OFFER,

at reduced prices, as follows, all fine healthy trees:—

500,000 RHODODENDRONS, from 2 to 4 feet.

ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 9 to 10 feet.

" Mountain, 3 to 4 feet, 6 to 7 feet, 9 to 10 feet, 10 to 12 feet.

BEECH, Common, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 10 to 12 feet.

BIRCH, 9 to 10 feet, and 10 to 12 feet, fine.

CHESTNUTS, Horse, 3 to 4 feet, 5 to 6 ft., 8 to 9 ft., 9 to 10 ft.

ELM, 3 to 4 feet, 6 to 8 feet, 9 to 10 feet, stout.

LIMES, red twigged, 6 to 7 feet, 8 to 9 feet, 9 to 10 feet.

PINES, Weymouth, from 2 to 6 feet, various sizes.

POPLARS, 3 to 4 feet, intermediate sizes up to 10 feet.

PRIVET, oval-leaf, 2 and 3 feet; evergreen, 3 to 4 feet.

THORN QUICK, many hundred thousand, from 4 to 6 years old, very strong; SYCAMORE, 6 to 10 feet; LILACS,

PINES, Austrian, from 3 to 6 feet, fine trees; AUCUBAS,

LAURELS; HOLLIES, various; BERBERIS AQUIFOLIA, 1½ to 2½ feet; BOX, YEWs; ELDER, golden;

IVIES, and General NURSERY STOCK.

For prices, &c., apply to ISAAC MATTHEWS and SON, The Nurseries, Milton, Stoke-on-Trent.

N.B.—Rhododendrons, early-flowering varieties, from 15 in. to 2½ feet, full of buds, at special low prices, for forcing. Over 500,000 to select from. Inspection invited.

and so high that a lofty arch has been cut through them. Individually or collectively these trees are, perhaps, unsurpassed, either for size or symmetry. Mr. Gilman, the head gardener, told me that when Dr. Moore first saw them, he retired to a moderate distance, and was lost for a while in wonderment, and with difficulty was induced to proceed. He afterwards wrote a description of them. On the north side is the formal flower garden, the only thing that intervenes between the house and the park.

The gayest and brightest part of the grounds is the terrace walk, which, starting some distance above the kitchen garden, runs the whole length of it. It is called the terrace walk because it is in three stages. At regular intervals, such as the end of each stage, there are arches of clipped Yew, with pillars of the same on either side. These Yew arches are said to be very old, but they show no signs of age. On both sides is an herbaceous border, with shrubs at the back. The brilliant glow of colour from this long extent of straight border was very striking, and there was no deterioration in brightness in any part, except about half way down, where a long conservatory was faced by a roserie with a Yew hedge behind it; a lawn, at the angles of which were two Golden Yews, surrounded the roserie. Under the hedge was a rockwork of Ferns and an unhealthy Araucaria, with only a few branches, which had been utilised as a support for some Honeysuckles, thus changing an unsightly object into a pretty one.

The conservatory can be best described as a Palm-house. Tall Dracænas and Latania, Pandanus, Seafortia, Cycas, Alsophila, and Cyathea occupied the centre space. The back wall was covered by Begonias and Ferns fixed in the usual way. Mr. Gilman has ransacked the nurseries to procure all the free-flowering herbaceous flowers, but still has to fall back on the old favourites—Asters, Phloxes, Sunflowers, Delphiniums, and Tritomas. Very conspicuous among the shrubs at the back were the parti-coloured Japanese Maples, and some large specimens of Polygonum cuspidatum. The latter has jointed branches like a Bamboo, big cordate leaves, and large umbels of white flowers. Mr. Gilman's house, at the entrance to the kitchen-garden, is reached by turning to the left down a short walk lined with bedding-out flowers. As this border is continued into the kitchen-garden and there planted with Carnations, which were also in flower, his house is in the midst of the flowers he loves and cherishes.

Heavy crops of nearly all the culinary vegetables could be seen. Rousham Park and Veitch's Main Crop are the two Onions depended upon, and they never fail either in size or quantity, nor does the Lyon Leek. There was a large piece of Veitch's Autumn Giant Cauliflower, an invaluable kind. Apples were a fair crop, Small's Admirable being the most prolific, perhaps, although Worcester Pearmain came very close in this respect. A great number of Siberian Crabs are planted by the side of the walks; the tiny, ruddy fruits looked very enticing. Pear trees on a west wall were plentifully hung with fruit, and the sorts that hardly ever fail were bearing as standards. The vineries show evidences of good culture, and what is aimed at being an average number of bunches of good finish and flavour, which will not exhaust the Vines. This rule seemed to be broken, however, in a house of Lady Downes. White Tokay and Trebbiano still keep their place, the first rightly. In the Peach-houses only late varieties were in fruit. Two houses

are devoted to Melons, the varieties grown being Ingestre Hybrid and The Countess. Orchids are largely grown, and the range of houses containing them has on some occasions been worthy of a visit from the ubiquitous photographer. *Vagabond.*

NEW OR NOTEWORTHY PLANTS.

LYCOPodium MOOREANUM, *Hort., Sander.**

THIS is a very distinct new species of Club-moss, which has been imported by Messrs. F. Sander & Co. from the north of Brazil, and sent out under the above name. For the specimen from which my description has been made, I am indebted to Mr. F. W. Moore, of Glasnevin, in compliment to whom it was named. Its nearest ally is *L. reflexum*, of Lamark, var. *L. intermedium*, Spring.

Stem about a foot long, erect, laxly dichotomously forked from low down, moderately stout, including the leaves, one-third of an inch in diameter. Leaves crowded, lanceolate acuminate, one-eighth of an inch long, pale shining green, very concave at the base, pubescent on the face and edge, the upper not at all dwarfed. Sporangia placed in the axils of the leaves all down the stem. *J. G. Baker, Herbarium, Kew.*

ONCIDIUM SAINTLEGERIANUM, *Rolfe, n. sp.†*

THIS is a very distinct and striking species of *Oncidium*, introduced from South Brazil by M. St. Leger, and it has just flowered with Messrs. F. Sander & Co., of St. Albans, who exhibited it at a meeting of the Royal Horticultural Society on November 1. It belongs to Lindley's group *Tetrapetala micropetala*, and is allied to *O. bifolium*, Sims (*Botanical Magazine*, t. 1491), which, however, has a far smaller yellow crest, more yellow segments, shorter pseudobulbs and leaves, and other details. The crest of *O. Saintlegerianum* is very large, being a quarter of an inch across and nearly as high, and of a clear light maroon-purple shade, which makes a striking contrast with the clear bright yellow of the rest of the lip, and renders it more handsome than most of its allies. It cannot possibly be confused with any other species of this large and difficult genus. *R. A. Rolfe, Herbarium, Kew.*

ORCHID NOTES AND GLEANINGS.

FERNSIDE, BICKLEY.

IN Mr. H. M. Pollett's Orchid-houses, there is usually to be found a good show of flowers in some or other of the plants he so well cultivates. In one of the houses a fine lot of different varieties of *Cattleya labiata vera*, or autumn-flowering, was in flower, some of the specimens being far superior to that originally in cultivation under that name, and one of which is now in bloom at Fernside. It is evident that this variety of *Cattleya* is a great acquisition. The effect of the different varieties in Mr. Pollett's house, arranged with *Oncidium varicosum* Rogersii, *Dendrobium Phalaenopsis Schroderianum*,

* *Lycopodium Mooreanum*, Hort. Sander. — Caulo erecto modice crasso e basi laxè dichotomiter furcato, foliis confertis lanceolatis acuminatis firmis pallide viridibus facie et margine pubescentibus, supremis nullo modo reductis, sporangiis ad foliorum omnium axillas impositis.

† *Oncidium Saintlegerianum*, n. sp. — Pseudobulbs oblong, 2 inches long, somewhat narrowed above. Leaves linear-lanceolate, acute, 6 to 8 inches long, 5 to 10 lines broad. Scape 18 to 20 inches long, raceme (at present) nine-flowered. Bracts lanceolate, acute, 3 lines long. Sepals unguiculate, light brown, the dorsal one lanceolate-elliptical, concave, 5 lines long, the laterals united at base, then spreading, 6 lines long. Petals elliptical-ovate, subfalcate, undulate, otherwise like dorsal sepal. Lip pandurate, three-lobed, 1 inch long; front lobe broadly subcordate-orbicular, apex bilobed, 1½ inches broad, undulate, clear bright yellow; side lobes minute, linear-oblong, obtuse, 1 line long, clear yellow; crest very large and prominent, clear light majestica-purple, 3 lines across by 2½ lines high, consisting of a central and two lateral rows of obtuse fleshy tubercles. Column wings broadly cuneate, obtuse, dull yellow, with some suffused reddish brown spots on basal half.

Lælia autumnalis alba, *L. anceps* varieties, *L. præstans*, &c., was very fine.

In the cool-house there is a fine show of *Odontoglossum grande*; a fine variety of *O. Uro-Skinnerii*, and some other species; and here was noted to be doing well a small plant of the richly-spotted *Odontoglossum crispum leopardinum*. *Cattleya Warscewiczii* (gigas) in its varieties is remarkably well-grown at Fernside in the shelter of a rockery planted with Ferns and foliage plants, and the gardener (Mr. Paterson) there says that they cannot be so well grown in any other house as in this situation. Of *Cypripediums* a large collection are grown, and a reason for their being in favour is that flowers are to be found on some of the species all the year round if a judicious selection of them be made.

CATASETUM LONGIFOLIUM.

These plants are very easily grown into good specimens, usually thriving best in small hanging-baskets, but this species (*Catasetum longifolium*) does best upon a block of wood, which enables its long leaves to hang down in a natural position, and the flower-spike being pendent, it is also seen to the best advantage when grown in this manner; but for the other species, if the baskets are well drained, they may be planted in good brown peat-fibre and chopped sphagnum moss in about equal proportions. They will do well in the growing season in the East Indian-house, as they require a great amount of heat, and also a fair share of water to their roots, and moisture in the atmosphere. The species are all deciduous, and after the bulbs are nicely finished off, the leaves will fall away, when water should be entirely withheld, and the temperature reduced, the cool end of the *Cattleya*-house being amply hot enough, and here the bulbs are not likely to suffer from drought. After re-potting in spring, the young growths first begin to start, and this is the only time one requires to be careful in watering, in order to avoid the water remaining in the young and tender shoots, which is apt to rot them; and as the spike mostly appears with the young growth, or when that is about half-made, the flowers get affected in a like manner. *Orchid Album*, vol. x., pt. 114.

CYPRIPEDIUM PITCHERIANUM ×.

A fine hybrid, raised in the Victoria Nursery by Mr. Williams, between *C. Harrisianum* var. *superbum* and *C. Spicerianum*. *Orchid Album*, t. 453.

DENDROBIUM CILIATUM.

A Burmese species, with relatively small white flowers, and a triangular, yellow, ciliated front lobe to the lip. *Orchid Album*, t. 454.

CYPRIPEDIUM ORPHANUM ×.

A hybrid, supposed to be between *Druryi* and *C. barbatum*, raised by Mr. Seden in the Veitchian Nurseries. *Orchid Album*, t. 455.

CATASETUM LONGIFOLIUM.

A handsome species, with flowers of a greenish-yellow, tipped with crimson. *Orchid Album*, t. 456.

LIST OF GARDEN ORCHIDS.

(Continued from vol. ix., p. 870.)

TRIBE VANDEÆ.—Anther operculate, cells mostly confluent. Pollen masses waxy, with a distinct stipes and gland, together forming a compound organ called the pollinarium.—A very large tribe, widely diffused in tropical and subtropical regions.

SUB-TRIBE EULOPHIÆ.—Terrestrial or more rarely epiphytic herbs, with underground tubers or aerial pseudobulbs, plicate-veined leaves, and simple or branched racemes of flowers. Lip variously gibbous, saccate, or spurred, attached at the base of the footless column.—Three genera, and over 180 species, common in the tropics and subtropics of Africa and Asia, rare in America and Australia.

89. EULOPHIA, R. Br., in *Bot. Reg.*, viii. (1822), t. 686; Benth. et Hook. f., *Gen. Plant.*, iii., p. 535. *Eulophus*, R. Br., in *Bot. Reg.*, vii. (1821), sub t. 573 (not of Nutt.).—Sepals and

petals similar, or the latter rarely broader. Lip variously gibbous, saccate, or spurred. Species probably over 100, with the distribution of the subtribe. The genus is scarcely distinct from *Lissochilus*, into which it seems to pass almost imperceptibly. The majority of the species, however, are very easily distinguished. *Cyrtopera* only differs in possessing a distinct foot to the column.

(1.) *E. BELLA*, N. E. Br., in *Gard. Chron.*, 1889, pt. II., p. 210.—*E. Trop. Africa*. Introduced by Mr. James O'Brien from the Zambesi district, and flowered in the collection of W. E. Gumbleton, Esq., of Cork, in 1889. According to dried specimens, collected by Dr. Meller, it is a native of the Manganja Hills.

(2.) *E. CAFFRA*, Rehb. f., in *Flora*, xlviii. (1865), p. 186.—Zululand. Flowered in the collection of R. Warner, Esq., of Chelmsford, about the year 1865.

(3.) *E. CALLICHROMA*, Rehb. f., *Otia Bot. Hamb.*, p. 116.; N. E. Br., in *Gard. Chron.*, 1889, pt. II., p. 298.—*E. Trop. Africa*. Introduced from the Zambesi district by Mr. James O'Brien, with whom it flowered in August, 1889. It was originally collected on the Manganja Hills by Dr. Meller.

E. carinata, Lindl. = *E. VIRENS*.

(4.) *E. ENSATA*, Lindl., *Bot. Reg.*, xiv. (1828), t. 1147.—*S. E. Africa*. Introduced from South Africa, and flowered with Mr. Tate, of the Sloane Street Nursery, in July, 1827. Lindley remarks that he believes it was sent by G. Don from Sierra Leone to the Horticultural Society in 1822, but this evidently refers to some other species.

(5.) *E. EUGLOSSA*, Rehb. f., ex Batem., in *Bot. Mag.*, xcii. (1866), t. 5561. *Galeandra euglossa*, Rehb. f., in *Bot. Zeit.*, x. (1852), p. 935.—Sierra Leone. Introduced and cultivated by Messrs. Loddiges, of Hackney, though the precise date is not recorded. It flowered on the continent in 1852, and at Kew, from plants sent by Gustav Mann from the Old Calabar River, in 1866.

(6.) *E. GRACILIS*, Lindl., *Bot. Reg.*, ix. (1823), t. 742; Lodd., *Bot. Cab.*, xii., t. 1178. *Galeandra gracilis*, Lindl., *Gen. and Sp. Orch.*, p. 187; *id.*, in *Journ. Linn. Soc.*, vi., p. 133. *Galeandra extinctoria*, Lindl., *Gen. and Sp. Orch.*, p. 187.—Sierra Leone. Sent by G. Don, a collector in the service of the Horticultural Society of London, early in 1822, and flowered in their garden at Chiswick "almost throughout the summer" of that year.

(7.) *E. GUINEENSIS*, Lindl., *Bot. Reg.*, viii. (1822), t. 686; Lodd., *Bot. Cab.*, ix., t. 818; *Bot. Mag.*, t. 2467; Warn. and Will. *Orch. Album*, ii., t. 89.—Sierra Leone. Sent by G. Don to the Horticultural Society of London in 1822, and flowered for the first time in Europe shortly afterwards.

E. Helleborina, Hook. = *HABENARIA HELLEBORINA*.

(8.) *E. LATIFOLIA*, Rolfe, in *Bolet. Soc. Broter*, (ined.).—*W. Trop. Africa*. Introduced from the small island of St. Thomas, and flowered in October, 1889, in the Jardin Botanique, Coimbra, whence it was sent to Kew by Professor Henriques. The leaves are small, elliptical-ovate, light shining green, with irregular transverse darker veins, and the flowers white, with purple lines on the lip.

(8.) *E. LEDIENII*, Stein, in *Verh. Schles. Ges. Nat. Kult.*, 1886, ex Stein, in *Gartenflora*, xxxvii., p. 609; N. E. Br., in *Kew Bullet.*, 1889, p. 90. *E. maculata*, Stein, in *Gartenflora*, xxxvii. (1888), p. 609, t. 1285 (not of Rehb. f.).—*W. Trop. Africa*. Introduced from the Congo in 1885 by Von Ledien, and flowered in the Breslau Botanic Garden in the spring of 1887. Very closely allied to *E. maculata*, Rehb. f., but differing in its whitish-grey leaves, on which the spots are arranged in irregular transverse bands; also in certain floral details. The species appears to have been in cultivation in 1861, for there is a note from Van Houtte in Lindley's *Herbarium*, relating to a species like *E. maculata*, from the island of St. Thomas, W. Africa, whence I have seen *E. Ledienii*, received by Professor Henriques of Coimbra.

(9.) *E. LURIDA*, Lindl., *Gen. & Sp. Orch.* (1833), p. 182; *id.* *Bot. Reg.*, xxi., t. 1821; *Limodorum luridum*, Azeil, in Pers., *Synops.*, ii. (1807), p. 521.—Sierra Leone. Introduced by G. Don in 1822, and flowered in cultivation soon afterwards. It is said to be extremely common on the trunks of trees in some parts of the colony. Lindley's figure was made from a plant which flowered with Messrs. Loddiges of Hackney in January, 1836.

E. Mackaiana, Lindl. = *ZYGOPETALUM INTER-MEDIUM*.

(10.) *E. MACKENII*, Rolfe, *n. sp.*—In habit and general character closely resembling *E. maculata*, Rehb. f., but the leaves are shorter, relatively broader, and less acute, and the dark green spots are arranged somewhat transversely in irregular bands on a lighter grey ground. The segments are also shorter, the lobes of the lip broader, the front lobe sessile, instead of being separated from the side-lobes by a broad claw, and the spur shorter and stouter.—Natal. Collected by Mr. McKen, near Verulam, and again at Cudmore; also by Mr. Sanderson. Flowered at Kew in July, 1891, from specimens sent from Natal by Mr. Staden in the preceding year. It is named after Mr. McKen.

(11.) *E. MACROSTACHYA*, Lindl., *Gen. & Sp. Orch.* (1833), p. 183; *Bot. Reg.*, xxiii., t. 1972; *Bot. Mag.*, t. 6246.—Ceylon and S. India. Sent to the Horticultural Society of London by Mr. Watson, Superintendent of the Botanic Garden at Peradeniya, some years prior to 1837.

(12.) *E. MACULATA*, Rehb. f., in Walp. *Ann.*, vi., p. 647. *Angracum maculatum*, Lindl., *Coll. Bot.* (1821), t. 15; *id.*, *Bot. Reg.*, viii., t. 618. *Ecceoclades maculata*, Lindl., *Gen. & Sp. Orch.*, p. 237 (excl. syn. A. Rich.). *Aërobon maculatum*, Spreng., *Syst. Veg.*, iii., p. 718. *Geodorum pictum*, Link et Otto, *Jc. Pl. Sel. Berol.*, p. 35, t. 14.—Brazil and Paraguay. Introduced by Messrs. Loddiges, of Hackney, who flowered it in December, 1820. This species has three very near allies, namely, *E. Ledienii*, Stein, from West Africa; *E. Mackenii*, Rolfe, from Natal; and *E. monophylla*, S. Moore, from Mauritius. Thus the distribution of the group is very interesting. All have coriaceous, more or less variegated leaves.

E. maculata, Stein. = *E. LEDIENII*.

(13.) *E. MEGISTOPHYLLA*, Rehb. f., in *Flora*, lxviii. (1885), p. 379; *id.*, *Gard. Chron.* (1885), pt. ii., p. 787; Carr., in *Revue Hort.* (1887), p. 87, fig. 21.—Comoro Islands. Introduced by M. Leon Humbolt in 1885, and flowered in the Jardin des Plantes, Paris, in 1887, under the charge of M. Lowry.

(14.) *E. MONOPHYLLA*, S. Moore, in Baker *Fl. Maurit. & Seych.*, p. 360. *Angracum monophyllum*, A. Rich., *Orch. Maurit.*, p. 66, t. 9; Bojer, *Hort. Maurit.*, p. 315.—Mauritius. Flowered in the Kew Collection in July, 1891, from plants sent home by C. W. Bewsher, Esq., of the Oriental Bank, Mauritius, in the preceding year. Very near *E. maculata*, Rehb. f., but the leaves are of a peculiar grey, suffused with a coppery tint, and with few olive-green spots arranged somewhat in irregular transverse bands.

(15.) *E. PULCHRA*, Lindl., *Gen. & Sp. Orch.* (1833), p. 182; Rehb. f., in *Gard. Chron.*, 1882, pt. i., p. 732; *id.*, 1884, pt. ii., p. 102 (var. *divergens*, Rehb. f.); *Limodorum pulchrum*, Thouars, *Orch. Iles Afr.*, tt. 43, 44; *Eulophia striata*, Rolfe, in *Journ. Linn. Soc.*, cxix., p. 53.—Bourbon, Madagascar, and Comoro Islands. Introduced from the latter by Hildebrandt, and flowered with Herr Kittel, of Eckersdorf, near Berlin, in 1882. The variety *divergens* flowered with W. Vanner, Esq., of Chislehurst, in 1884. When I described *E. striata*, I quite overlooked *E. pulchra*, Lindl., there being then no specimen either in Lindley's or the General Herbarium at Kew.

(16.) *E. SAUNDERSIANA*, Rehb. f., in *Bot. Zeit.*, xxiv. (1866), p. 378; *id.*, *Xen. Orch.*, ii., p. 174, t. 173.—*W. Trop. Africa*. Introduced by Gustav Mann, and flowered in the collection of Wilson Saunders, Esq., of Hillfield House, Reigate, in 1866.

(17.) *E. SCRIPTA*, Lindl., *Gen. & Sp. Orch.* (1833), p. 182; Rehb. f., in *Gard. Chron.*, 1872, p. 1003; *id.*, 1878, pt. 2, p. 332. *Limodorum scriptum*, Thouars, *Orch. Iles Afr.* (1822), tt. 46, 47.—Bourbon and Madagascar. First flowered in the collection of M. Pescatore, of St. Cloud, near Paris (date unrecorded); then with Wilson Saunders, Esq., of Reigate, in 1872.

E. squalida, Lindl. = *CYRTOPERA SQUALIDA*.

E. streptopetalus, Lindl. = *LISSOCHILUS STREPTOPETALUS*.

E. striata, Rolfe = *E. PULCHRA*.

(18.) *E. VIRENS*, Lindl., *Gen. & Sp. Orch.* (1833), p. 182; *Bot. Mag.*, t. 5579. *Limodorum virens*, Roxb., *Pl. Corom.*, i. (1795), p. 32, t. 38. *Eulophus virens*, R. Br. in *Bot. Reg.*, vii. (1821), sub t. 573. *Eulophia carinata*, Lindl., *Gen. & Sp. Orch.*, p. 183.—Ceylon and South India. Sent by Dr. Thwaites, from the former locality, to Kew, where it flowered in January, 1866. R. A. Rolfe.

(To be continued.)

AGRICULTURAL GRASSES.

EVERY thoughtful farmer and grazier realises the importance of the production on his land of a good supply of grass for pasturage and hay. He who can produce the greatest yield on a given number of acres will be the most successful man.

In the United States they have many climates, many geological formations, many degrees of aridity and moisture; it must be apparent, therefore, that one species of grass cannot be equally well adapted for growing in all parts of this extensive territory, yet it may be said that hardly a dozen species of grasses have been successfully introduced into their agriculture. True it is that this number answers with a tolerable degree of satisfaction the wants of an extensive portion of the United States, chiefly the northern and cooler regions. But it is well known that in other localities the same kinds of grasses do not succeed equally well, and one of the most important questions for those regions is to obtain such kinds as shall be thoroughly adapted to the peculiarities of climate and soil. The grasses of cultivation were once wild grasses, and are still such in their native homes. The question naturally has arisen whether a selection from some of the wild or native species could not be made which will be adapted to cultivation in those portions of the country which are not provided with suitable kinds.

Many observations and some experiments in this direction have already been made, and the thanks of the farmers of our own country are largely due to Messrs. Sutton of Reading, and those of the United States are due to Dr. Geo. Vasey, the botanist of the Washington Department of Agriculture, and to Mr. Clifford Richardson, the assistant chemist of the same department, for their special report on the grasses of that country, which are either native or naturalised, and which have more or less an agricultural value.

For a long time the botanists of the United States have felt the want of a general work on the grasses of that country; and Dr. G. Vasey has now issued an exceedingly useful monograph of the grasses of the United States and British America.

The present issue now before us is but the first portion of the work, the remaining part is expected to follow within the next few months. J. J. Willis, Harpenden.

FLORISTS' FLOWERS.

THE AURICULA.

WE have now passed into winter, and for two months at least Auriculas may be said to be quite dormant; and yet it is not prudent to neglect them. The large outer leaves now rapidly decay, and this is accelerated by frosts; and when the plants are

frozen, it is best not to disturb them at all. The plants become very dry at the roots if afforded no water, but I am careful to afford them enough to prevent shrivelling of any part. When the outer leaves are quite decayed, these should be cleared away; but I fancy it is not wise to pull off half-decayed leaves, the stems getting thereby injured. The lights are tilted whenever the weather is favourable; on fine days drawn off altogether, and in cold foggy weather and during severe frosts they remain closed, but no mats are used before Christmas. The plants seem all the better for a sharp touch of frost that freezes the soil in the pots, and when this occurs for some weeks, the *Auricula aphis* (*Trama Auriculæ*) suffers considerably, and does not recover sufficiently to do harm till after flowering. Drip is bad for Auriculas, if it fall in the centre of a plant, and, perhaps, may cause rot. See therefore that the glass is sound. The tiny seedlings which have been appearing above ground ever since July should not be checked by allowing frost to reach them, but they should be kept steadily growing, the flower pots or pans containing the plants being placed near the greenhouse or pit roof, where they may remain until January, when they should be pricked out as soon as the true leaves are formed. Plants will continue to vegetate during February and the following months. The alpine Auriculas out of doors now look well, and tree leaves that gather around the plants should be cleared away, as they harbour slugs. The decayed leaves of the Auriculas, which appear later, must also be removed from the plants.

CARNATIONS AND PICOTEES.

The plants in small pots are now well established, and in these they will pass through the winter. Some growers arrange their plants on stages in the wintering frames, in order that the water with which they are supplied may rapidly drain away, and when thus treated, the plants remain healthy, and suffer but little, even from the severest frost. Others plunge the pots up to the rims in some Cocoa-fibre refuse, for instance; still I do not think the plants do so well when the pots are plunged. Mine stand on damp fibre or spent tan, but they are not plunged; and they do very well so, and one severe winter, when many Carnations in frames were lost, I did not lose a single plant from frost. The plants are never allowed to get quite dry, and when water is required, it is afforded in the morning of a fine day, when air can be plentifully given. The plants should not be crowded together closely, or the leaves will decay. I never expose the plants to heavy rain, although a shower, if the weather is not very cold at the time, would not be likely to do much harm. Some of my Carnation frames face the south, and some the north, and they do well in both. Cleanliness, plenty of ventilation as soon as the plants are established, and the avoidance of drip, are the essentials to success, either for exhibitors or others.

Out-of-doors, the plants are looking very well, especially the seedlings. The appearance of the foliage from the different crosses is quite a study, and affords much interest to the cultivator. The named varieties and selected seedlings have not been long planted, but they are already well-established, as only those were planted that were well-rooted. This year they were planted out three weeks earlier than in 1891. The plants of the Malmaison type are usually layered earlier than others, and the plants potted up one month earlier, but by far the best plants, both as regards flowering and appearance, are those propagated from cuttings in the spring and early summer. The plants are wintered in a house which can be heated, in preference to keeping them in cold frames, for the reason that the plants are required to be in flower before the ordinary stock of Carnations. I had a fine display last June from plants like these which were not really forced, they having had no heat except that afforded by the hot-water pipes, when these were employed to keep out frost.

The tree or perpetual-flowering Carnations are now coming nicely into bloom, and are quite a feature in the house where the zonal Pelargoniums are placed

for the winter. The house has about 50° to 55° as a minimum temperature, with plenty of light and sufficient ventilation. Thrips have been rather troublesome, and a number of the best blooms are badly marked, Winter Cheer being the worst of any. The blooms of coloured Carnations are always much injured by thrips, if these insects take to them, leaving white blotches on the blooms, and when very numerous, the edges of the petals shrivel and curl up. The lively little insect did the mischief when the plants were out-of-doors, but they were soon settled by fumigation with Tobacco when they were placed inside.

THE DAHLIA.

Some few years ago I used to admire, in a well-kept villa garden, the Dahlias and Chrysanthemums flowering together up to the third week in November. I cut on October 21 last a nice bunch of coloured Primroses in our garden in the open air; also Roses and Chrysanthemums. There were also plenty of Dahlia blooms. When frost has blackened the leaves, the plants may be cut over about 1 foot from the earth, and the tubers dug up on a dry day. When dug up stand them out in the sun with the stem turned downwards, afterwards placing them in a vinery or room where they may get dried. When the tubers are well dried, store them for the winter in a frost-proof shed or cellar. If Dahlia seed was gathered, the pods may be laid out upon paper in an airy room until dry, when the seed may be cleaned from the husks.

THE GLADIOLUS.

Some of the plants will begin to decay, whilst others are quite fresh, but all may be taken up; and as they are taken out of the ground cut off the stems close to the bulbs or "corms," remove some of the soil from the fibrous roots, but be careful to save the bulblets which cluster about the base of the old corms. Spread the latter on a shelf in a vinery or airy room; and when dry cut the old corms cleanly away from the base of the new ones, removing at the same time the roots. The dried corms may be placed in bags or flower-pots, and kept in a dry place. They need not be stored in dry sand, or anything else. The bulblets of various sizes may be dried, and put into packets with a little dried sand.

Assuming that seedlings have been raised, and the leaves have died down, corms will be of various sizes, but all of them will be small, if of the present year's raising; and these may be preserved in the same manner as the above, and kept like those in some place away from frost. *J. Douglas.*

CHRYSANTHEMUMS IN GROUPS AT EXHIBITIONS.

There are undoubtedly more displays of bad taste to be seen in the arrangement of groups of this popular flower than at all the other shows throughout the season from spring to autumn put together. Some may try to explain away this defect by stating that the plants are of a more uniform character, thus making it more difficult to group a collection of Chrysanthemums than when dealing with a mixed assortment of plants. To some extent, as far as variety goes, this may be true, but it does not otherwise hold good, as may be seen when groups are compared one with the other. The fact is, that too much reliance is placed upon large blooms, irrespective of other good qualities. Cut-down plants enter largely into the composition of groups at some exhibitions. These, in combination with taller ones for the background, go a long way towards making an effective display. I have seen excellent groups thus far carried out very well, but utterly failing in the finish around the margin. In some cases the front plants are stuck upon pots, neither one or the other being hidden. In others there is a failing in the foliage, some of the front ones being destitute of leaves at the base. Some growers show plants in dirty pots; others use white sticks, when only green-painted ones should be tolerated. The sticks also in some cases are far

too stiff at the top, thus carrying the flowers in too erect a manner through their rigidity. In most groups there a deficiency of dwarf plants with which to finish off what in many a case would be a praiseworthy arrangement. Dwarf plants of about 1 foot in height are easily raised from cuttings late in the spring, and nothing adds more than these to the finish of a group. By the use of green moss, wherewith to hide the pots and the soil in the front row of plants, the effect is still further enhanced. Failing this useful material, small shoots of evergreens or anything else, so that the pots are not seen, should be brought into requisition. If it be permissible to use other kinds of plants (Ferns are sometimes specified for the purpose), by all means use them. For this purpose small examples of *Cyperus alternifolius* and its variegated form, small plants of *Carex* in var., dwarf Crotons and *Dracænas* (neither being chosen with too brilliant colours), the bronzy rich-looking, but not gaudy, varieties of the *Acalypha*, the light *Eulalia japonica variegata*, or *Panicum variegatum*, all add to the effect, and might reasonably be admitted as a finish to groups. They are used (or at least, some of these named) in home decoration—why not, then, in an exhibition? Another failing, one of which there will, no doubt, be a good few examples during the next few weeks, is that of too much mixing up of the colours. Perhaps three or more of one variety, and that a good and distinctive-looking one, may be used. Instead of separating these, the effect in very many instances would be far better by grouping them together. Take Sunflower or *Avalanche* as two examples of the Japanese section. Again, too many colours often enter into the composition of some groups, whilst in others the aim appears to be to select the very largest flowers. The former is a great mistake; it is better to have a few duplicates of the best and most distinctive kinds than to aim at variety to an excessive degree. The large flowers, it is true, go to make a show, but there is equal charm and value, with quite as much cultural skill, in those of medium size—Pompons and singles, with *Anemone*-flowered varieties included. Too formal an arrangement is a frequent error. In this respect, the groups usually staged at Hull and Brighton are notable examples of better taste. These are more broken up in their arrangement, tall plants being surrounded with dwarf ones, and colours grouped together with excellent finish at the front, in both places. Another common error is overcrowding; it is a stupid mistake to make, and one which seems to require a deal of unlearning on the part of the exhibitors. In many instances, the back part of a group is not sufficiently high to admit of the best display being made. If the centre be kept well up, it affords more space by a considerable extent, and is the best remedy against overcrowding. The arrangement of a group for exhibition requires some thinking out. Old hands know somewhat how to proceed, but those who are new to the work will do well to arrange their plants at home first, on the prescribed space allowed. By doing this, they will find out what to take, and what to leave at home; also what accessories are needed for the arrangement. *H.*

(To be continued.)

COMMON GARDEN INSECTS.

I. ENEMIES OF THE ROSE.—Complete success in the rearing and preservation of plants necessitates some practical acquaintance with the natural history of the commoner species of garden insects. The florist who indiscriminately destroys every form of animal life seen to invade the precincts of his garden or hothouse, is probably equally liable to suffer losses through insect ravages as his brother who entirely ignores their existence, and takes no means of protecting his plants. Many species of insects, as well as of birds, confer incalculable benefit upon the gardener. Some insects act as natural scavengers, chasing away noxious refuse; as, for example, many

of the "Necrophaga" order of beetles. Some prey upon other insects that are known to be really injurious. An example of the latter is the numerous kinds of Lady-birds and other species of insects, which in their larval condition live upon that curse of vegetation, namely, aphides, or plant-lice. Then, again, the fertilisation of some flowers is effected through the agency of bees. The common earth-worm is one of the most useful of insignificant creatures, since it is the means of aerating and fertilising the soil.

Further, the gardener who is not cognisant of some of the teachings of entomology may take tedious and ineffectual means of destroying insects, when easier and surer methods of cure or prevention are at hand. Or, again, he may go to considerable trouble and cost in destroying insects that have already laid their eggs, and have ceased to be harmful. Damage to flowers by insect-jaws is often set down to creatures which cannot eat; whilst tiny flies or moths, considered too minute or too scarce to effect appreciable injury to the most tender plant, are yet capable of destroying the hardiest tree in the country. Some innocent-looking flies are provided with veritable machine saws, with which they cut up buds and leaves, and deposit in the crevice formed thousands of tiny eggs. These quickly hatch into as many grubs possessing voracious appetites. Other flies, again, equally common-place in appearance, are the sworn enemies not of flowers, but of flower-destroyers. They alight upon the back of a destructive caterpillar, bore a hole in the body thereof, and insert one egg or more, which develop into grubs that eat up that caterpillar.

These few isolated instances are perhaps sufficient to indicate that the study of garden life is by no means unimportant to the florist from a business point of view.

We shall now endeavour (fig. 88) to illustrate a few aspects of insect history, confining our attention in the present article to some of the frequent visitors to the queen of all flowers—the Rose. We will begin with

THE LACKEY MOTH,

which we have represented at fig. 1. In some seasons the caterpillar of this insect proves most destructive to Apple tree and other foliage, the Rose also being a victim of its ravages. The moth deposits its eggs generally on twig stems, neatly arranged in rows, as shown at the right-hand of our woodcut (fig. 1e). These are firmly glued together, and to the branch or leaf, by means of a natural cement applied by the mother. They are usually laid in the autumn, and the adhesive secretion forms so protective a covering for them that a certain proportion of these pretty egg-clusters withstand the frost and blasts of winter. In the following May, the first day or two of sunshine causes a change. They are seen to darken in colour; and some bright day, a few degrees warmer perhaps than the preceding one, from each a minute caterpillar breaks through its shell, like a chicken hatched in an incubator. Presently by an "unerring instinct," they club together in companies, varying from twenty to two or three hundred, and weave a common web of silk for mutual shelter and protection, under which hidden from sight, they proceed with the work of destruction. They eat, and eat, and grow; finally, attaining sometimes a length of 2 inches, but generally $1\frac{1}{2}$ inch, see fig. 1c. The full-grown caterpillar is covered with long hairs; it is of bluish-grey colour, striped with blue, black, and red. When disturbed it lets itself fall earthwards by means of a silken thread, sometimes remaining suspended mid-air until confidence is restored. When the alarm is past, it climbs up by the same thread. The simplest way, therefore, to abolish these pests, is to shake the branches, and having previously spread a sheet on the ground, brush the insects into them as they fall. It is often preferable, however, to look for the webs, and gently cut them off with knife or scissors.

THE GREEN ROSE-CHAFER.

In our woodcut at fig. 2 is seen a large beetle scam-

bling on to a leaf—this is the Green Rose-Chafer (*Cetonia aurata*), a large and pretty insect, but which happens to be very destructive to Roses, Strawberries, Turnips, White Thorns, Lilacs, Elder, Mountain Ash, and some other plants. The eggs are deposited in the ground, and turn into little grubs that feed upon plant roots for no less a period than from two to three years—growing to a length of $1\frac{1}{2}$ inch (fig. 2g). They then burrow further into the soil and form themselves an earthen case, covered with little pellets of earth; and, thus enveloped, they pass the pupal state (fig. 2p).

The beetle itself may be caught as it flies about in the evening; or, as it rests amongst the flowers

often so liberally distributed upon leaves, grasses, and twigs. As is generally known, each of these collections of foam hides from view a little green insect, very unhappy-looking, and sluggish when uncovered. This is the larva of the frog-hopper (*Cercopis spumaria*), which latter is represented in our woodcut at fig. 5. The perfect insect, which we have drawn as in the act of flying, is just as lively as the grub is inactive. Its little green body looks quiet enough when resting or eating, but just touch it, and it gives a sudden spring or hop into the air quicker than thought. I once took the trouble to measure the spring of a frog-hopper, and compared with its weight. I forget the exact figures, but certainly they even surprised me.

The secretion of the frog-hopper is not its only objectionable feature—in fact, this only serves as signal or sign of greater mischief, namely the hungry jaws beneath, which generally select the tender shoots, especially the axil, of Pinks, Carnations, Roses, &c.

Fortunately the larva is almost helpless when its frothy covering is knocked away—totally so, if it be exposed to the warm rays of the sun—and quickly dies. This fact should be borne in mind in combating its ravages. We have found an excellent cure is that of carbolic acid. A few teaspoonfuls of the common liquid acid in a gallon of hot-water, and when cold, the plants watered therewith, immediately kills cuckoo-spit larvæ, also blight, and many other minute pests. We have found this treatment to be quite innocuous to the flowers, and have saved scores of Rose trees by its means. We needly hardly warn our readers that this acid is a deadly poison, except in excessively dilute solutions, and requires the utmost care in its employment.

THE MALE OF A DESTRUCTIVE INSECT, THE WINTER MOTH,

is shown at fig. 3, just beneath the branch. Its caterpillar is of bright green colour, and always closely resembles in tint the leaves which it eats. It is of the "looper" kind, and walks by arching its body, and bringing the rear part up to the fore part. When disturbed it lets itself down by a thread. The female winter moth is devoid of flying wings, possessing only an apology therefore in the shape of a diminutive pair of useless undeveloped wings. It has, however, long and agile legs. When it emerges from the pupa condition, which is passed in the ground, it nimbly climbs the trunk or stem, and amongst the foliage deposits its eggs. Hence, this is the point at which its progress must be stopped. This is easily done by applying with a brush round the trunk a band of some sticky composition, such as cart-grease or tar. This should be done in April and May, and again in October and November. The moth, if no such preventive is adopted, on reaching the branches, lays her eggs during the night-time on almost any part of the plant—fruit, leaves, buds, or bark. They are of microscopic size, green in colour, and difficult to detect, and are firmly secured by means of natural gum. In spring, the grubs are hatched, and at once attack the young buds, calyces, &c. They become mature about November, or a little earlier, and let themselves down to the ground, and, burrowing some little depth, become chrysalides, turning into moths before spring arrives.

It may not be out of place here to remind fruit-gardeners that many species of injurious insects choose the ground at the foot of trees wherein to undergo the transformation from larva to pupa. During the winter, we frequently dig up scores of pupæ from the foot of a single tree, and so save the deposition of thousands of ova in the spring time.

THE MOTTLED UMBER MOTH

is represented in our woodcut at fig. 4, which is also a winter flyer, as indicated by its scientific name, *Hybernia defoliaria*. Its habit and metamorphoses closely resemble those of the last-mentioned moth, and a like remedy is to be adopted for its eradication. The female is entirely destitute of even the rudiments of wings, and few people not entomo-



FIG. 88.—COMMON GARDEN INSECTS.

during the afternoon. It generally selects the petals and stamina of flowers to eat.

We regret that we can give but a slight idea of the appearance of this beautiful beetle by our non-coloured drawings. It is of a brilliant green, and in common with the majority of beetles, has a metallic lustre, frequently exhibiting a golden or coppery hue; the elytra or wing-cases also are spotted irregularly with white. The eyes are rather large, and project; the head is thickly punctured; the horns are short, ten-jointed, and clubbed at extremity; and on each side of the insect is a prominent sharp spine.

"CUCKOO-SPIT," AND WHAT PRODUCES IT.

Few products of insect-life are more unsightly than those little masses of white frothy matter, known as "cuckoo-spit," or "frog-spit," which are

logically informed would suspect the relationship between it and the winged sex.

A famous naturalist once asserted that fully 200 distinct species of insects preyed upon the Oak. I would not venture to guess how many attacked the Rose, but it would be easy to demonstrate that there are sufficient to render it desirable to afford the plant every protection possible against its natural foes. *Frank Young.*

(To be continued.)

FORESTRY.

THE COMMON HORSE-CHESTNUT, *ÆSCULUS HIPPOCASTANUM* (L.).

THIS fine ornamental tree is thought to be indigenous to the Levant and other places, and is supposed to have been introduced into this country about the middle of the sixteenth century. It is thoroughly hardy in Great Britain and Ireland, and when fully established its contour is that of a large round-headed tree of great substance, and when loaded with its large and beautiful flowers in early summer, it has no rival in this respect as a first-class specimen tree for embellishment. Soil and climate, however, seem to exert a marked influence on its growth and appearance, as we sometimes find the trunk to exhibit a spiral or twisted appearance, while the foliage presents different tints of colour in autumn.

At Churchill, co. Armagh, Ireland, there is a medium-sized tree growing on the edge of a peat bog, whose foliage at the top gradually exhibits a reddish colour about the month of July, and by autumn the leaves at the very top are of a deep scarlet colour, which makes a fine contrast with other trees in its vicinity. The site of this tree is only about 80 feet above sea level, and it produces great abundance of fruit every year. But the tree is by no means confined to low-lying situations, as it attains a large size in the highlands of Scotland at an elevation of 1110 feet above sea level. At Invercauld House, Braemar, Aberdeenshire, there is a tree of this species upwards of 110 feet high, and contains upwards of 100 cubic feet of timber. It produces great wealth of flowers every year, but I have never known it to mature fruit at this elevation. At Abergeldie Castle, in the same shire as the above, there is a nice round-headed specimen of the Horse-Chestnut; it stands on the lawn right in front of the Castle, at an elevation of about 800 feet—the soil is gravelly loam. These examples show that the tree is thoroughly hardy, and well adapted for the climate of this country. But the Horse-Chestnut often exhibits great variety in shape. Sometimes we find the contour of the tree to be tall and conical, while others form a globular head as exact in form as if cast in a mould; others, again, form enormous spreading heads with the larger branches, or rather limbs, resting upon the ground, which prevents them from being torn off the trunk by their immense weight. Many years ago, when assisting to overhaul and renovate the grounds at Skene House, one of the seats of the Duke of Fife, in Aberdeenshire, we came in contact with a large spreading tree of this type, and as some of the large rambling limbs interfered with the carrying out of other improvements in their vicinity, they had to be cut back, but the space still occupied by the branches was 90 feet by about 70 feet. Some twelve of the larger size of limbs rest upon the ground, and afford ample space and accommodation for a large number of people to assemble around its trunk and below its canopy of verdant foliage. The height of this tree is about 58 feet; the elevation of site above sea-level, is 350 feet; soil gravelly loam, resting upon gravelly clay. When the leaves of the Horse-Chestnut begin to expand in early summer, the growth of young wood at the terminal points of the branches and twigs start to grow at the same time, and is generally perfected for the season in about a month's time, and that peculiarity of growth gives it time to ripen and mature its young wood by winter, which, in a great measure, accounts for the

hardiness of the tree. When the wood is cut up for use, it is found to be of a light, soft texture, on which account it cannot be recommended as a timber tree for general utility, yet when the wood is seasoned, it is capable of being used by the turner and cabinet-maker for a great variety of purposes in connection with his craft. The tree is generally propagated from its nuts, which ripen in autumn and fall to the ground, and are then apt to be eaten by sheep and deer. The nuts may either be sown at once, or at any time during favourable weather in winter, either in drills or broadcast on seed-beds 4 feet wide; one bushel of nuts should be allowed for 20 lineal yards of a bed the above width. Press the nuts down on the surface with the back of a spade or roller, and finish by covering them to the depth of 1½ inch of fine soil. When gathering the nuts for this purpose, the largest sizes should be selected, as they produce by far the best plants. The seedlings will grow in any ordinary soil, but a deep loamy one, rich in organic matter, produces by far the best and largest plants.

There are several varieties of this tree in cultivation, one of the best of which is *Æ. rubicunda*, which is of a lesser size than the species, and makes a nice specimen tree for a small lawn. The flowers are of a red colour, and produced year after year in the beginning of June in great abundance. Another peculiarity of this variety is, that it commences to produce flowers during the early stages of its growth. I have had trees loaded with flowers when only 10 feet high. The fibrous roots of this tribe of trees render them suitable for transplanting with safety after they have attained a pretty large size, which is also a recommendation in their favour; and amateurs and others, when planting their grounds at suburban villas and elsewhere, should keep this in view. The Pavia or Indian Chestnut tribe of small trees, of which there are several varieties, are also well adapted for this kind of planting. The Pavia flava is a yellow variety from California, and is a charming small tree for a lawn; in autumn the foliage exhibits a richness of colours which is not surpassed, if even equalled, by any other tree at that season. *J. B. Webster.*

CHRYSANTHEMUM JOTTINGS.

(Continued from p. 555.)

ROYAL EXOTIC NURSERY, CHELSEA.—The firm of J. Veitch & Sons is famous for so many things that we may be sure the finest of autumnal flowers finds a place in the floral display at head-quarters. A good-sized span-roofed house contains the pick of the collection, which consists of about 1000 plants in the most select variety.

We may say that only the best are represented, and these show this year better culture than we remember to have observed on former occasions—blooms larger generally, foliage finer and stouter, and growth sturdier. Amongst novelties, mention should be made of the following:—Mr. H. Ballantine, a yellow, hairy, incurved Japanese; Bouquet des Dames, white, of the same class as the preceding; Florence Davis, greenish-white; W. K. Woodcock, a flower coppery-brown, of good substance, a very enduring flower, either on the plant, or when removed from it; Mrs. Robinson King, canary-yellow, incurved Japanese, with broad florets; Colonel B. Smith, twisted, recurring florets, bronzy-coloured, the florets tipped with yellow; W. Tricker, an introduction of last year; Gloire du Rocher, same year; H. A. Neve, a nice reflexed light pink Japanese; Mdlle. Marie Hoste, a Japanese, with broad florets of flesh colour, changing to white with age; Miss Anna Hartshorn, the best white Japanese variety; Mdlle. Lacroix, a thread-petalled Japanese, yellow, of the shade of the older variety of that name; W. A. Manda, E. Beckett, a rich yellow flower, that is usually excellent; Miss Judge Benedict, the finest Anemone-flowered variety extant, yellow disk, and pink or white guard florets.

Besides the Chrysanthemum plants in the span-house are others of fine quality in the long Camellia-

house that forms the nursery entrance from the Fulham Road.

MR. DAVIS'S NURSERY AT CAMBERWELL.

Mr. Norman Davis has long been known as a Chrysanthemum grower, and a successful one. A visitor to the nursery in Lilford Road will see many new and good varieties, and some good blooms of older kinds. Like most other growers, Mr. Davis complained that his plants are rather later this year than usual, but they all look healthy, and promise a rich display. Pouring with rain as it was when we were at Camberwell, the scene in the house where those in bloom were grouped, offered a pleasing contrast to the dreary appearance outside. The first variety to attract attention was Florence Davis, which was raised here about two years ago. Some fine blooms as seen here, created a more favourable impression than had this variety hitherto. It is so perfectly distinct, and presents such a pleasing appearance just when passing from green to white. Miss Watson is a new Japanese of pleasing lemon-yellow, and a few yards away are some good blooms of Felix Cassagneux, a variety very like Bismarck, brought out some two years or so ago. Madame Ed. Rey, a Japanese raised by Calvert in France, has large heavy blooms, and is a good thing. The top of the bloom is a pretty cream-colour, and the lower petals are of rose. The lovely-coloured Wm. Tricker is again in evidence, and some good blooms of Geo. Savage, the new Japanese incurred, much after the style of Anna Hartshorn. Another very pretty creamy-white Japanese, called Diane, was in nice bloom, and a good stock of Colonel W. B. Smith, promise some good blooms. A large number of plants of Vivand Morel and W. H. Lincoln are grown in 48's for grouping; they bear one bloom on a plant, and are well clothed with foliage down to the pots.

AUTUMN-SOWN PEAS.

SINCE the extensive use of glass in gardens, many gardeners have ceased to sow peas in the autumn, and sow the earliest crop in small pots, on pieces of turf, or in wooden troughs, placing these in a cool house in January. The plants are grown on under glass, with plenty of air until favourable weather occurs in March for planting them in the open quarters, and good crops are to be obtained in this way if care be taken to protect the plants from severe frost and cutting winds when they are first put out. But I consider it much easier to sow Peas outside in November on the old-fashioned plan, and take care of them during the winter. If they do not come up well, or any misfortune occurs to them, there is then still the opportunity to make good any loss by sowing seed under glass. This is the method that I always adopt, and invariably get good crops. The ground is got ready a month before sowing time, choosing a warm piece of land open to the south, and, as far as possible, sheltered on other sides. This receives a good dressing of farmyard manure, which is dug in deeply, and the soil left to settle, and on a dry day, about November 5, or soon after, the seed is sown, thicker than is usual for spring sowing, and covered in level with the surface. On the top of the soil we put about 1 inch of sifted coal-ash, covering the soil about 9 inches in width, which prevents frost penetrating the ground so deeply as it otherwise would, and also checks the ravages of slugs, &c., after the Peas come up. Mice seldom give us any trouble, but we keep a good watch for them, as they soon do a lot of mischief. A good cat or two constantly about the garden is the best remedy, and next to this is trapping with Colin Pullinger's perpetual traps, or the old-fashioned figure 4 trap. After the Peas get through, it is a good plan to scatter a few fresh ashes along the rows as the first lot will have got somewhat solid; and if there is any danger of frost or cold winds, branches of evergreens are placed along the side that is most exposed at a short distance from the young plants, and in very cold springs we replace these for a time after the Peas are stalked; but before the latter

operation takes place, we remove as much of the coal-ash as can conveniently be done with a shovel, and with a rake, draw some soil up to the plants to take its place, as I find the coal-ashes are apt to set together in a hard mass, preventing the rain from penetrating to the roots.

After trying all the so-called earliest varieties, I now rely upon Laxton's Earliest of All for the first few dishes, following it with Laxton's Standard, a variety that has almost gone out of cultivation. Standard is a heavy cropper, of better quality than the ordinary early round varieties of Peas, and stands the winter here better than any. After this comes Ne Plus Ultra, which is the favourite Pea for the best table; but many gardeners consider this variety of no use for autumn-sowing; but, as a rule, I find it does well, if treated as I have described. Last winter we had the thermometer at zero-point twice, still, the Pea crop was a heavy one. It is very

ZONAL PELARGONIUM, MR. GORDON.

For summer, and especially for winter blooming, no plant has surpassed the Pelargonium in producing a floral display, at once acceptable to the florist and to the ordinary lover of flowers, innocent of any of the florists' arbitrary methods of looking at things. The subject of our sketch (fig. 89), is the variety Mr. Gordon, and it is due to the kindness of Mr. Comfort, gr. to G. A. Everitt, Esq., Knowle Hall, near Birmingham, that we are enabled to reproduce it. The plant was photographed in August, and at that time measured 4 feet in diameter, and bore 165 trusses of bloom. P. Mr. Gordon is a beautiful rich crimson, with a pure white eye, and, when grown to perfection, forms a very lovely object indeed. The culture of this plant is simple, and is understood by most gardeners, but it is only by thorough attention to the details concerning same that the highest success can be obtained. On Tuesday next, at the meeting of the

man, who is now the champion Tea Rose grower, that in the days of his "babyhood" he went to see the garden at Canton Manor, which the present Dean of Rochester (then Canon Hole) had made famous; he came away with the conviction, which he formed at the time, that all his Tea Roses were dead, and so to his unpractical eye they appeared. But their owner afterwards assured him that they were all very much alive. Again, I recollect asking one of our most successful rosarians in Cheshire why he did not grow Teas out-of-doors (he had a grand lot under glass)? "Oh! impossible in this climate," I, however, persuaded him to try; and the last time I saw his garden, he pointed with some satisfaction to a bed of vigorous Tea Roses, which he called my bed. I have had Teas, too, from Messrs. Cocker & Son, at Aberdeen, which were as vigorous as any grown in the south; and it is a "far cry to Aberdeen." I am therefore strongly of opinion



FIG. 89.—ZONAL PELARGONIUM, MR. GORDON: CRIMSON, WITH A WHITE EYE.

necessary, however, to get new and well-ripened seed of this variety, or it will refuse to germinate so late as November, and for this reason I always save seed for this sowing whenever it is possible. This season we gathered the first dishes of the above kinds as follows:—Laxton's Earliest of All, June 4; Standard, June 15; Ne Plus Ultra, June 22; these were sown November 14. We were not able to sow in the spring until March 21, and the first dishes of this sowing were ready as follows:—Duke of Albany, June 26; Criterion, June 29; Ne Plus Ultra, July 18; Success, July 23; Veitch's Perfection, August 5; of these, Criterion is not good enough in quality, although a good cropper, and I shall not grow it again; Veitch's Perfection is too long before it comes into use, and although of good quality, is not now required; Success I like very much, it is a distinct Pea, crops well, and is excellent when cooked. *W. H. Divers, Ketton Hall Gardens, Stamford.*

Royal Horticultural Society at the Drill Hall, Westminster, Mr. Pearson, of Chilwell, Nottingham, is to give a lecture on the "Culture of the Pelargonium for Autumn Flowering," and we will not anticipate this lecture by going into the details of management now.

THE ROSERY.

THE ROSE-GARDEN IN OCTOBER.

TEAS AND NOISETTES.—Although the treatment of these beautiful classes in autumn is in some respects similar to that for hybrid perpetuals, there are some differences; at least, it must be so in some parts of the country. There is a common belief that Tea Roses are less hardy than hybrids. This may have been the case formerly when they were grown on standards, half-standards, and Manetti. I do not think it is so now, when they are grown as dwarfs, budded on the seedling Briar. It is related of a gentle-

that they may be grown almost anywhere where hybrids succeed. Of course, there are some delicate growers amongst them, but so there are amongst hybrids. Some few people can grow Horace Vernet or Xavier Olibo for example a second season, and some of the hybrid Teas such as Lady Mary Fitzwilliam are most difficult to keep.

In preparing Teas for the winter, I do not thin out the old flowering brood as I do the hybrids; in fact, they are such late bloomers, that it would be a pity to do so. I have to-day (October 24) gathered even from my small collection, quite a handful of beautiful blooms; moreover, as I generally cut them nearly as hard as H.P.'s in the spring, it is hardly necessary; and what the grower expects is, that strong shoots will spring from the base of the bush, and grow rapidly, producing a large quantity of flowers. If the weather is severe, the frost will act as a pruning-knife, and under the circumstances, I leave the Teas very much as they are at the present time.

I think that they do not require so strong a soil as the hybrids, and where new beds have to be prepared, I would trench the beds in the same way; and where the soil is heavy, and the situation damp, I would raise the beds a few inches above the level, as recommended by Mr. Geo. Paul in the *Rosarian's Year-Book*, much in the same way as the "lazy beds" of the Irish peasant are prepared for Potatoes; this allows superfluous water to drain off.

There will be vacancies to be filled up in beds which have been previously planted, and the question is, what to plant. Were I writing for exhibitors, I would say plant half-standards, for it is almost universally stated that on these the best blooms for exhibition purposes are produced; but as I am rather writing for the general lover of Roses, I would not recommend them, but to obtain dwarfs on either the seedling Briars or Briar cuttings. You must protect half-standards, and if the winter be a severe one, you must expect many to be killed, whereas there is always a fair chance of your dwarfs surviving the severest winter. In the same way, with regard to the varieties to be used, either to replace those, the same considerations must guide one in those which I recommend. It is of little use, I think, recommending flowers which, although very beautiful when you get them, are so apt to be spoiled by wet that the chance is a rare one. Take such a flower as Jean Ducher, or in a less degree, that most lovely flower, *Souvenir d'Elise Vardon*—when the weather is wet, the blooms are glued together, and never open, so that not only is there disappointment but an ugly appearance in the garden. There are a few which are difficult to grow, and one or two of these are so lovely, that notwithstanding their delicacy of constitution, they must be included. For instance, there is that most lovely, as I think, of all Teas, *Comtesse de Nadaillac*; it is delicate, but then its colour is so exquisite and form so perfect, that one cannot exclude her. There are, again, others which are not show Roses, but which are delightful for the garden; such a Rose is *Homère*, strong and vigorous, with flowers exquisitely bordered with pink, but small, and not of first-rate form. In *Ma Capucine*, one of the most exquisitely-coloured Roses we have in the bud, we have a flower so very thin that it soon opens. In the following there are those, I think, which may be safely relied upon as good flowerers and vigorous growers:—

Alba Rosea, as *Madame Bravy*, white, with flesh-coloured centre, very free-flowering.

Catherine Mermet, flesh colour, beautiful form, and very free.

Anna Olivier, rosy-flesh, base of petals deeper sometimes in some localities, assuming an orange tint, which is very attractive.

Caroline Kuster, bright lemon-yellow, very free, and at times most beautiful.

Comtesse de Nadaillac, the most beautiful, I think, of all Teas; the colour an enduring mixture of apricot-yellow, flesh colour, rose, and copper. Not a vigorous grower, but one that cannot easily be dispensed with, even with that drawback.

Hon. Ethel Brownlow, salmony-pink, with copper shading—a very beautiful rose; something in colour like *Madame Lambard*, but much better in form, and brighter in colour.

Francisca Kruger, coppery-yellow, shaded with peach. Large, and very free-flowering.

Homère, one of the hardest of Tea Roses. Colour, rose, with salmon centre; edges of petals marked with pink. A very attractive garden Rose.

Hon. Edith Gifford, light flesh, very slightly tinged with salmon.

Innocente Pirola, creamy-white, sometimes slightly tinged with flesh. A most free-flowering hardy Rose.

Ma Capucine, small and thin, but very lovely in the bud.

Madame Charles, deep apricot yellow.

Madame Chedame Guinoisseau, a small button-hole Rose; pale canary-yellow.

Madame Cusin, rose, with lighter centre. A very good and free-flowering Rose.

Madame de Watteville, a very beautiful, but somewhat delicate Rose. Salmony-white centre, the petals are bordered with light pink. Very attractive.

Madame Faloot, a brilliant deep yellow Rose, with too great a scarcity of petals to make it an exhibition Rose, but an abundant bloomer, and a capital garden Rose.

Madame Lambard, a very hardy, vigorous, and free-flowering Rose, varying much in colour, from yellow to red, and very often on the same bush will be found blooms as different as possible. Becomes much deeper in autumn.

Perle des Jardins, vigorous, free-flowering, with beautiful foliage, but the buds are very apt to come quartered.

Souvenir d'Elise Vardon.—Perhaps this Rose has taken more medals than any other Tea, yet, withal, I do not advise the amateur to have much to do with it, as it is so very full that in wet weather it all clings together, and does not open. In a fine hot and dry summer it is a grand Rose.

Souvenir de Paul Neyron, creamy white, with delicate tint of flesh in the centre. A very attractive flower.

The Bride, almost white. An American sport from Catherine Mermet, and a most beautiful flower.

Souvenir de S. A. Prince, a white sport from *Souvenir d'un Ami*, and equally desirable. There are some who do not care for these round Teas, but prefer those with pointed buds.

I have omitted from this list high-coloured flowers, because I do not personally care for such flowers as *Souvenir de Thérèse Levet*, *Princesse de Sagan*, and *Marquise de Vivens*, they take away the delicacy of colouring which I think is one of the chief charms of the Teas. Nor have I included the newer Teas; but those who wish to grow such will find in *Madame Hoste*, *Ernest Metz*, *Cleopatra*, *Sappho*, and *Waban*, valuable additions to their beds.

Although I have called these notes "The Rose-Garden in October," the weather has been so wet that I fear very little can be done this month. Nurserymen do not care to execute their orders, and while the ground is in the state it is, it will be much better to defer planting, hoping for a more favourable time. When the beds are planted, then the winter protection must be prepared. The best plan is to throw up some of the soil from the beds around the collar of the plant, and then place all over the beds a coating of 3 or 4 inches of stable-yard manure, not hot, nor too much rotted; this to remain all the winter, until all its best properties are washed down into the soil. Where Tea Roses are much exposed, a few Bracken fronds will keep off the more severe weather; but I never think of doing anything of this kind, and growers must be governed by the special circumstances of their situations. *Wild Rose*. [Our correspondent sent his notes to us in October, but the pressure of other matter prevented their publication. Ed.]

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. A. BURBERRY, *Orchid Grower, Highbury, Birmingham.*

THE COOL-HOUSE.—Of Orchids of recent introduction, *Cochlioda Noetzeliana* is, perhaps, the most fascinating. We have now seen the flowers produced from fairly strong pseudobulbs, and there no longer remains a doubt of their beauty and usefulness. It is satisfaction to know that the glowing descriptions respecting the merits of this pretty little Orchid have not been exaggerated. I think the spikes and flowers will never attain to the size of *Odontoglossum Pescatorei*, yet when new pseudobulbs have been made equal in size to those naturally grown, no doubt the spikes will be much more branching, and the flowers proportionately larger. The colour, which is a lovely shade of scarlet, considerably adds to the attractiveness of this species. Although rather slow to establish itself, it is generally pretty sure to grow, as very few of the newly imported pieces actually fail to start, and each year the new pseudobulbs get larger and larger; this fact, together with the hard, healthy appearance of the same, suggesting easy culture when really established. As this is a small-growing Orchid, I would recommend that it be not over-potted, rather using

small earthenware pans or Teak-wood baskets, and suspending them near the roof-glass. In the same manner, should the pretty little *Oncidium Phalænopsis* be grown: it is an easy matter to get too much compost round the roots of these small-growing species, which, when watered, remains soddened for a much longer time than it should. Any of the *Oncidiums* or *Odontoglossums* that are sufficiently advanced in growth to produce spikes, should be elevated on stands, where they can be watched, otherwise the chances are that a slug will be the first to find out the young tender flower-spikes. *O. Phalænopsis* during winter requires the warmth of the intermediate-house.

DENDROBIUMS.—For the welfare of the plants, I have advised that they should have a long rest, and not be hurried into flower; if, however, a few are required for Christmas blooming, such as *D. Wardianum*, *D. nobile*, and *D. Ainsworthii*, the earliest should be selected now, and placed in the intermediate-house, where the gentle warmth and moist atmosphere will be all that is necessary at the commencement. It should be borne in mind, that if *Dendrobiums* be subjected suddenly to strong heat or too much water at the roots, the flower-buds will either drop or turn to growths. As regards top-dressing or re-potting *Dendrobiums*, it generally happens that the plants after flowering are more or less in active growth; and at that time also other work is pressing, making it almost impossible to give the *Dendrobiums* such careful handling as they should have, so that everything that can possibly be done now to forward this work should be done. It is a wise plan before starting *Dendrobiums* with a view to flowering them, to trim off aged and withered pseudobulbs, to well clean those remaining, neatly re-tying them to new sticks, and to top-dress or repot, as the case may demand, using good sphagnum moss entirely, rather than peat of any but the best quality. This will save much time at a later date, and the plants receive no further check to their growth.

THE FLOWER GARDEN.

By H. W. WARD, *Gardener, Longford Castle, Salisbury.*

BANKSIAN ROSES.—These popular climbing Roses should be given a warm situation, and allowed plenty of room to develop, that they may show off to the best advantage their small globular white and yellow flowers. The varieties are:—*R. Fortunei*, white, large-sized flowers; *Jaune Serin*, very rich yellow, with fine foliage; *alba*, or white (the old variety), small white flowers; *lutea*, or yellow (the old variety), fine yellow flowers, small and full.

MINIATURE, OR FAIRY ROSES.—These diminutive Roses are well adapted for pot-culture, or as edgings for Rose-beds, and for planting in small groups of from five to nine plants in herbaceous borders. In a cut state, the clusters of tiny blooms are very useful for vases, and for bouquets. The best varieties are:—*Anne-Marie de Montravail*, flowers very small, of the purest white, a perfect "Fairy Rose," and deliciously scented; *Lawrenciana rubra*, the old double red fairy, free-flowering, and very pretty; *Mignonette*, soft rose, changing into white, very beautiful; *Paquerette*, pure white, very continuous and pretty; *Perle d'Or*, yellow, with orange centre, flowering in large clusters, novel and distinct, and very pretty in the bud-state; *The Pet*, double white, profuse bloomer, and one of the prettiest little Roses in cultivation.

CLIMBING EVERGREEN ROSES.—To be correct, the so-called evergreen Roses, which have originated from *Rosa sempervirens*, are only sub-evergreen, retaining their leaves till the approach of spring. They are well adapted for covering pillars, arches, and banks, being vigorous growers and free bloomers. The shoots should be well thinned in pruning, and left nearly their full length, merely cutting off the weak points of the reserved growths. The varieties here recommended are:—*Adelaide d'Orléans*, white; *Banksiaeflora*, white, centre pale yellow, small flowers; *Dona Maria*, pure white, small; *Félicité Perpétue*, creamy-white, flowers small, full and beautiful; *Leopoldine d'Orléans*, white, shaded with rose; *Princess Mary*, reddish-pink; *Princess Louise*, blush; *spectabilis*, rosy-lilac, large and double.

PLANTING TREES AND SHRUBS.—Where the making of beds and borders of ornamental trees and shrubs is contemplated, the work should be pushed forward quickly, with a view to getting the planting done before frost sets in. The borders, if new, should be slightly or boldly irregular in outline, according to the size of them, and the beds should

be of simple shape, irregularly but gracefully curved. The land should be trenched or dug two spits deep, and if the under-soil be of good quality, it may be brought to the top; but where the soil is shallow and poor, leaf-mould, road-scrappings, and such like should be added after it is dug, mixing these materials with the staple when planting. In the case of the natural soil being stiff and heavy, wood and coal-ashes may be applied in addition to the other substances, which render it more congenial to the requirements of trees and shrubs generally. I may here remark that Rhododendrons and Azaleas will do fairly well in soil of the latter description, and still better if a few shovelfuls of peaty soil be placed about their roots. If leaf-mould be plentiful and peat less so, it may be used instead.

GENERAL WORK.—This will consist in daily sweeping and removing the fallen leaves from walks, lawns, and pleasure-grounds, so as to preserve good order in every section of this department.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

TOMATOS.—If the plants are grown in numbers to afford a constant supply of fruits during the winter, the blossoms should have been fertilised in September and October, these not setting well at a later period. Assuming that the number of fruit secured is sufficient for all demands, there is less difficulty in getting the fruits to ripen if the house is a suitable one for Tomatos. Free ventilation should be afforded in fine weather, and a small amount of air by the upper ventilators during the night; the temperature may now reach during the day 60° to 65°, and at night 50° to 55°. The plants should have every ray of light, and be supplied with some kind of stimulus to growth. The house should be freed of undue moisture before nightfall, and root-watering sparingly done. With an increase of temperature, insect foes will increase also, and these must be kept under by means of a light fumigation once a week, which will be sufficient to prevent the white-fly increasing in numbers. Spring fruiters should be kept gently on the move, and near the glass, so as to ensure a sturdy growth. The temperature for these plants may be 55°. Keep the unnecessary shoots of these later fruiters stopped, and allow them ample room to extend.

FRENCH BEANS.—If these were raised in frames early in the autumn, and are now showing pods; the plants will need a greater degree of warmth, and if the pots are full of roots, tepid, weak liquid-manure may be afforded the fruiting plants. Beans do well on stages or shelves near the roof—in such positions the blooms set better. A sowing of French Beans may now take place if proper forcing-pits exist, which will afford a few dishes if the weather be favourable. Failing the proper appliances, sowing had better be deferred to the beginning of January.

MUSHROOMS.—The early-made beds should now afford a supply, and the temperature of the house not exceed 55°, or the life of the beds will be short. The covering of litter should be removed when the Mushrooms begin to appear, and when the soil of the beds becomes dry, water it with tepid water. Fresh material may be prepared, and new beds made, spawning them when the heat in the bed declines below 90°, and covering them with loamy soil warmed to 90°, making this covering firm, but not, as is often done, so that the Mushrooms cannot emerge.

SALADS.—Plants of Endive should be lifted when dry, and blanched in some dark place. Chicory roots should be similarly treated, but affording these a little warmth—say 55° to 60°. Mustard and Cress, if required daily, should be sown at fortnightly intervals, using shallow boxes and light soil. Sow the seed on the surface, and gently press it into the surface, covering with a slate till the seed sprouts. No water will be required if the soil be moist.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

VINES.—During the next eight weeks an examination of all bunches must be made every few days for bad berries, cutting out any that show the smallest signs of decay; especially, should the centres of the bunches be well examined, the inner berries usually being affected before those on the outsides. All leaves which readily fall at the hand's touch should be removed at the same time. Maintain a temperature in theinery in which Grapes are hanging of 45° or 50°, and always keep the hotwater-pipes or flues

slightly warm. At this season much judgment must be exercised in affording air, as it sometimes happens that the weather is mild, and the atmosphere charged with moisture. On days of this kind the ventilators should be kept closed, the artificial heat very slight. In bright dry weather, however, air may be admitted to the houses by opening only the top ventilators. The dry atmosphere, so essential to the proper keeping of Grapes, soon deprives the border of moisture, and renders frequent waterings necessary to keep the berries plump, and this although heavy mulching may have been afforded to reduce evaporation as much as possible. To avoid loading the air of theinery with moisture, a sunny day with a dry wind should be taken advantage of, to afford the borders a good watering, and at the same time keeping a brisk heat in the heating-apparatus, and the ventilators open, to carry off the moisture as much as possible before nightfall, and afford as much ventilation as is prudent during the following days.

POT VINES to be early forced, should now be got in readiness for starting them. If they were cut back to the required length advised in a former Calendar, no more pruning will be necessary; but in cases where this has been omitted, a shortening of the canes should be made at once, or what is known as bleeding may occur when the Vines are placed in heat shortly after the pruning. Although the canes may be regarded as clean and free from injurious insects, it is better to err on the side of extra precaution by cleansing them with a soft brush and Fir-tree oil. Remove as much of the surface soil in the pots as can safely be done; and the best tool for the purpose is a piece of sharp-pointed iron rod, half an inch in diameter. Having removed the upper crust of soil, afford a surfacing of loam, horse-droppings, finely-broken old mortar, and some of Thomson's Vine Manure, all well mixed together, and make this compost quite firm by ramming it with a blunt rammer. The plants may then be stood in a cool-house until put into the forcing-pit. I have never found it necessary in keeping up a supply of Grapes all the year round, to commence forcing before the beginning of the month of December, but where it is intended to make an earlier start, a hot-bed should be got together, for the purpose of supplying bottom-heat and moisture, if the structure favours such means being adopted. In this bed plunge the pots to their rims, and incline the ends of the canes downwards to check the flow of sap, thus fostering an even break. Failing a hotbed, stand the pots on or over hotwater-pipes, with a tray to hold water beneath them, but in which the pots should not be placed. Keep the canes moist, and give them a minimum temperature of 50° to start with.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

CYCLAMENS.—The earliest of these should be in bloom about this date, and the plants, if carrying good heads of flowers, will be the better for an occasional application of weak manure-water. A low structure, where the plants can be stood well up to the glass, is best for Cyclamens, the night temperature being kept not lower than 50°, with a rise of 5° to 10° by day, according to the amount of sunshine. Give heed that damp does not injuriously affect the flowers, and to avoid risks, admit a good volume of fresh air when the outside temperature is favourable for so doing. Thrips do much harm, but occasional fumigation with tobacco in some of its forms, before the blooms expand, will greatly lessen the number of these insects. Seedlings strong enough to be potted off singly into thumbs or small 60's, should have attention, employing a potting soil consisting of two parts rich loam, and one each of leaf-soil and peat, with a little rotted and dry cow-dung, which has been reduced to powder, and sufficient sharp sand to keep the soil porous. Grow the plants steadily on, never allowing them to feel drought at the roots, or they will be checked seriously, an error to be carefully avoided by the would-be-grower of fine plants.

THE WARM CONSERVATORY.—It is during the short gloomy days that the conservatory is most valued; and where the heating apparatus of the house is sufficient to enable flowering plants to be placed therein, it is doubly so. But without sufficient heat, it would not be prudent to place in it forced plants, i.e., when the temperature falls below 50°. The conservatory should be the pink of cleanliness in every part, the pots, tubs, paths, glass everywhere; and decayed leaves and flowers past their best should be removed daily, and the plants grown for their

foliage should be frequently cleaned with a sponge and clean water, and insects hunted out and destroyed. Any walls which are masked with Ferns, Begonias, Selaginellas, *Panicum variegatum*, *Tradescantia*, &c., should be inspected occasionally; and at this season of the year water should be sparingly afforded or the plants may suffer, and decayed fronds, leaves, &c., removed, so that this portion of the structure may look pleasing to the eye.

The following subjects will be found useful to intermix amongst those which are either planted out in the borders and beds, or growing in pots, viz., *Plumbago rosea*, *P. coccinea*, the winter-blooming *Begonias*—mostly fibrous rooted, such as *B. nitida*, *B. John Mease*, and *B. insignis*, &c.; *Linum trigynum*, a pretty plant at this season, either in pots or planted out, the latter being, in my opinion, the better method of growing it, as red-spider is then less troublesome. Flowering plants of *Calanthe vestita rubra* and *C. Veitchii* may also be brought to the conservatory, and intermingled with Ferns and other foliage plants. The soil in which the *Calanthes* are growing must not be allowed to become very moist, or the plants will suffer. *Gesneras* are telling plants at this season, also *Eranthem pulchellum*, *Cypripedium insignis* and its varieties; and *Scutellaria Mocciniana*; these, with plants of *Euphorbia Jacquinæiflora*, *Eucharis amazonica*, *Lily of the Valley*, *Poinsettias*, and *Primulas*, will make a fine display.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

PLUMS.—The finest varieties are produced by wall trees, and when these are well cultivated, there is no more valuable fruit than the Plum. Only varieties should be planted which are the best of their various classes; and any fairly good soil will grow them well, provided some small amount of lime is afforded from time to time. The wall-tree borders should be well made and drained if the land is retentive, and they should be made, if of good soil, of not less depth than 2 feet; on light gravelly soil, 3 feet will not be too deep. West and north aspects suit them admirably, and by planting on both sides, the season is greatly prolonged. In selecting dwarf-trained trees, the stems should be from 12 to 18 inches high, the same as for Peaches, Apricots, Cherries—indeed, for all trees which will be trained in the fan form. Plum trees should be planted 15 feet apart, and as these grow rapidly, supernumerary trees need not be planted between them. Of varieties to plant we may mention the following:—August: Early Orleans, Rivers' Prolific, Oullin's Gage, Golden Gage, Belgian Purple, Denniston's Superb, and Sultan. September: Denyer's Victoria, Pond's Seedling, Green Gage, Jefferson, Prince Englebert, Kirk's Blue Gage, Washington, Guthrie's Green Gage, Reine Claude de Bavay, one of the best dessert varieties grown; Automne Compote, Coe's Golden Drop, Goliath, and Washington. Plant the trees firmly, keep the base of the stem 6 inches distant from the wall, and spread the roots at various depths. If the roots when the trees reach their destination are dry, lay them in water for a few hours. Many failures are traceable to planting trees that have become unduly dry at the roots in transit. Correctly label each tree; and afford a mulch of straw stable manure. Newly-planted trees will require no further attention till spring, when (before finally nailing them to the walls), the mulching should be removed and the soil again trampled and smoothed over, leaving all tidy and neat.

SWEET CHERRIES.—These kinds may now be planted, and if they are to be grown on walls, the borders should be put in good order, by incorporating with the staple some moderately heavy fibrous loam, burnt earth, and old plaster or lime-rubbish, and if the staple is of poor quality, a little well-decayed manure will be of advantage. One great point is to keep the foliage clean and free from insects in the summer, and the planter should be careful that the shoots experience no rough usage, as this may subsequently lead to gumming and loss thereby of the main branches. Peaches, Nectarines, Plums, Apricots, and Cherries are all more or less liable to gumming. The following varieties of Cherries will be found to give satisfaction, viz., Belle de Orleans, River's Early, a fine black variety of good all-round properties; Frogmore Bigarreau, Governor Wood, Kentish Bigarreau, Napoleon Bigarreau, Elton, Black Eagle, Black Tartarian, Florence and Emperor Francis.

EDITORIAL NOTICES.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, Nov. 15 { Royal Horticultural Society, at Drill Hall, James Street, Westminster, lecture at 3 P.M., on "Pelargoniums for Autumn Flowering," by Mr. Pearson, of Chilwell, Nottingham.

SHOWS.

TUESDAY, Nov. 15 { Royal Horticultural Society, at Drill Hall, James Street, Westminster.
Chrysanthemums at Plymouth (two days), Liverpool (two days), Reading, and Wimbledon (two days).

WEDNESDAY, Nov. 16 { Chrysanthemums at Hull, Rugby, and Sleaford (all two days); also at York (three days).

THURSDAY, Nov. 17 { Edinburgh Chrysanthemum (three days); Norwich Chrysanthemum.

FRIDAY, Nov. 18 { Stockport and District Chrysanthemum, and Chorley Chrysanthemum (two days).

SALES.

MONDAY, Nov. 14 { Bulbs and Plants at Protheroe & Morris' Rooms.
Dutch Bulbs, at Stevens' Rooms.

TUESDAY, Nov. 15 { Orchids and Bulbs, at Protheroe & Morris' Rooms.
Sale of Nursery Stock at Barnham Nurseries, near Bognor, by Protheroe & Morris (two days).

WEDNESDAY, Nov. 16 { Bulb Sale, at Protheroe & Morris' Rooms.
Dutch Bulbs and Lilliums, at Stevens' Rooms.

THURSDAY, Nov. 17 { Plants from Belgium, Seeds, Bulbs, &c., at Protheroe & Morris' Rooms.
Dutch Bulbs and Lilliums, at Stevens' Rooms.

FRIDAY, Nov. 18 { Orchids and Bulbs, at Protheroe & Morris' Rooms.

SATURDAY, Nov. 19 { Bulb Sale at Protheroe & Morris' Rooms.
Dutch Bulbs and Lilliums, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—42° F.

The Chrysanthemum. The development of the Chrysanthemum within the last few years, though not to be compared in scientific interest with the production of the tuberous Begonia, is, in any case, very remarkable. The whole history of the plant, with illustrations of the wild species, has been repeatedly given in our columns, so that we need hardly enter into those particulars again, especially as such details are only likely to interest a few among the huge army of Chrysanthemum devotees. But even if we take the Chrysanthemum from the point of view of the ordinary lover of flowers, how great has been the progress since ROBERT FORTUNE first sent home the Japanese varieties, and what a welcome change has been arrived at from the stiff formality of the incurved varieties! Now, at least, all parties can be satisfied! Those of us who like the perfect symmetry of the large-flowered incurved forms can still indulge their proclivities; whilst others, who see their ideal of beauty in reflexed varieties, in the Anemone-flowered section, or in the Pompons, can each and all find what they want. This is

an immense advance upon the cruel despotism of the old florists. Some day—oh, may it be soon!—we may be similarly relieved in the case of the Show Dahlia. The formality of that flower, so much admired of some, is to others frightful. All can admire the colour; all can wonder at the plasticity of Nature, and the patient perseverance of the gardener, but it is only the few that can appreciate such a form. Now that the public has seen what can be done in the case of the Chrysanthemum, they will never remain contented with one single type of beauty when so many are open to them. The single Dahlias, the Cactus Dahlias, the Juarezi set, are all steps in the right direction, and, as we hope, indicators of future progress. But to revert to the Chrysanthemum. It is obvious that they are no longer to be judged by one inelastic standard, but that a special standard must be—indeed, is—applied to each section. The great defect of the old florists' standard was its purely arbitrary character. Its points and pronouncements were often unobjectionable, or even praiseworthy in themselves, but they had little or no reference to the flower itself. They would have applied equally well to something cut by a mechanic out of paper or velvet. The whole history and significance of plant construction, and the distribution of its colour; its marvellous life-history were entirely ignored, and rules were laid down as if we were dealing with pieces of tin instead of with living beings, with requirements and feelings, not so very different fundamentally from those possessed by ourselves. Yet, will those who think this an exaggerated statement tell us how and where they are going to draw the line between plants and animals, how they are going to distinguish between the sensibility to external impressions shown by the plant protoplasm, and the corresponding phenomena witnessed in the nerve tissue of the animal?

Depend upon it, the more fully we recognise the fact that plants are living beings—like ourselves—the better we shall grow them, and the purer our standard of taste will become.

The section of Chrysanthemums which is the nearest to Nature, and the one, therefore, that should be taken as the standard, is, of course, the Anemone-flowered group. There the ray florets and the disc florets are present as Nature makes them in the wild plant; and all we have to do is to follow her indications and emphasise those portions she makes prominent, and subordinate those which are of less importance in the economy of the plant. The construction of the natural flower is clearly adapted to the requirements of the flower as regards insects. The ray florets are the advertisement boards and signs to attract the notice of the passing insect. By developing the colour of these florets, then, we are following the natural indications.

But, it may be said, this standard is all right enough for the wild plant, but as gardeners, our requirements are quite different. We do not grow the flowers for the seed, except in some cases. We can propagate the plant by cuttings or layers, and are not solely dependent on the flowers, and therefore we can afford to dispense with the flower, as, indeed, we do practically, for many or most of our most admired "flowers" are partly or absolutely sterile.

The gardener must, it is true, cater for the whims and fancies of the hour. But he can gradually and indirectly improve the public taste by demonstrating that natural—shall we say, reasonable—forms and arrangements are necessarily the most beautiful of all; whilst the

monstrosities, cripples, and deformities which constitute the bulk of our fancy flowers, however remarkable as physiological illustrations, are not consistent with any great appreciation of floral anatomy, or with a high ideal of beauty. We have all of us along way to go before we arrive at such a degree of perfection, but it is, at least, incumbent upon us to be always on the right road.

WASHINGTONIA FILIFERA.—We give an illustration this week (p. 591) of *Washingtonia filifera*, the magnificent Palm of South California and Arizona, from a specimen growing in the open air in the gardens of the late Dr. T. G. RICHARDSON of New Orleans. Both Dr. RICHARDSON and his amiable wife had for many years been very successful in introducing and cultivating what are regarded as hardy and half-hardy Palms, and their collection formed one of the most interesting and extensive in the Southern United States. They possessed numerous species of Phoenix, Sabal, Chamaerops, Serronoias, Livistonas, and Rhaps growing in the open air. These plants were able to undergo a considerable degree of cold during some winters, the thermometer falling in extreme cases as low as 20° Fahr. The only protection the more tender plants received, was an occasional covering of dry hay-bands placed round their stems and leaves. The subject of the present notice is a striking plant, and as it is comparatively new in collections in this country, a few words respecting it may be of interest. Mr. W. WATSON in the *Kew Bulletin*, 1892, p. 296, speaks of it "as one of the glories of the Riviera gardens." It was first brought to notice by Dr. C. C. PARRY, who discovered it in California in 1849 or 1850. It was first named *Brahea dulcis*. WENDLAND afterwards placed it as *Pritchardia*, and finally, the same author founded upon it the genus *Washingtonia*. Apparently, according to Mr. WATSON, it was not introduced into European gardens until 1875. Notwithstanding this, there are some large specimens of it on the Riviera. At Villa Valetta, on a sloping lawn in front of the house, is a grove of about sixty of this magnificent Palm. The rate of growth, under suitable circumstances, appears to be so rapid that the plant has evidently a great future before it in sub-tropical countries.

We are indebted to the kindness of Mr. HARRY PAPWORTH, Mrs. RICHARDSON's gardener, for this and other photographs of fine palms growing in her garden, and which we may at some future time publish in these pages.

ROYAL HORTICULTURAL SOCIETY.—The Council of the Royal Horticultural Society, sympathising with the efforts of various County Councils, technical institutes, schools, gardeners' mutual improvement societies, and other bodies to promote instruction in practical horticulture by means of lectures, demonstrations, &c., and in the hope of rendering such teaching more definite and effective, have consented to hold an examination in horticulture in the first week of May, 1893. The following is an outline syllabus, showing the nature of the subjects to which it is considered desirable that the attention of students should be drawn, but it is not expected that the whole should be dealt with in one short series of lectures and demonstrations; selection should, therefore, be made according to local circumstances, but a sufficient knowledge of the elementary principles will, in all cases, be required.

Examination in Horticulture.—The examination will be held simultaneously in as many different centres in England and Wales as circumstances may demand. The examination will be based on the outline syllabus of "Elementary Principles and Horticultural Operation and Practice" to be found below, but arrangements will be made so far as possible to frame the questions so as to cover the ground of any syllabus sent up for that purpose to the society before the first day of March. It will, however, in all cases, be absolutely essential for students to exhibit a sufficient knowledge of the "Elementary Principles" named in the syllabus.

Two sets of questions will be set: one of an elementary character, called the Lower Grade, and one more advanced called the Higher Grade, and those who intend to sit for examination must decide beforehand under which grade they will be examined, in order that a sufficient number of papers in each grade may be sent. In each grade 300 marks will be given as a maximum. Candidates gaining 200 marks and over will be placed in the first class. Those gaining 150 to 200 will be placed in the second class. Candidates failing to obtain half-marks (150) will not be classed. The Royal Horticultural Society will award a Silver-gilt Medal to the candidate gaining the highest number of marks in the first class in the Higher Grade, and a Silver Medal to the highest in the First-class in the Lower Grade, and will, if the

also send in the full name and address (with designation or occupation) of one responsible person for each proposed centre, who will undertake to supervise the examination in accordance with the society's rules. The duties of the supervisor will be as follows:—

- a. To satisfy himself that the room proposed for the examination is a suitable one for the purpose, and to see that a sufficient quantity of foolscap paper, all of one size, is provided for the use of the candidates.
- b. To satisfy himself that all candidates belonging to his centre have been duly acquainted with the place, day, and hour of examination. This may be done by communicating with the lecturer or with the secretary of the County Council, &c.

inform students distinctly of the exact hour at which all papers must be handed in.

g. To see that the following rules are strictly observed:—

1. Two and a half hours are allowed for the papers.
2. Students are not allowed to bring any books, paper, notes, &c., into the examination-room, nor to ask any questions whatever, save of the supervisor, who must exercise his judgment as to whether such question is one he should answer or not.
3. Students are not allowed to leave the examination-room on any pretext whatsoever after the papers have been distributed. In case of unavoidable illness, the student must be content either to hand in what he has already done, or to wait till another examination takes place.
4. Any student leaving the room before the full time allowed has expired, must first give up to the supervisor his written papers, together with the printed examination paper, which must in all cases be returned with the answers.
5. The papers of any students breaking these rules or found copying should at once be destroyed.
- h. The allotted time having expired, the supervisor will call on the students to fold up and hand in their papers, which should then be at once (before leaving the room), tied together securely with string. They should be posted to the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster, S.W., by the earliest possible post.
- i. The supervisor will, of course, not himself leave the room during the time of examination.
- k. The supervisor is requested to sign the printed paper sent with examination papers, and return it with them. This paper is to the effect that the rules of the Society have to the best of his knowledge been strictly observed.

If there should be more than 25 candidates at any one centre, an assistant supervisor will be required, and one additional supervisor for every additional twenty-five candidates. The Council reserves to itself the right to modify the application of these regulations as they may consider necessary, and all disputed questions of interpretation and procedure must be referred to them for final decision.

Elementary Principles, on which horticultural practice is based:—Soils, good and bad: their nature and composition; weeds and their indications. Requirements of Growth: water, heat, air. Seeds: nature of, duration of vitality in, and modes of germination. Roots: nature and functions of; fibrils and root-hairs, what they do, and how they do it; what helps and what hinders them. Stems and Branches: their nature, work, and uses; helps and hindrances to their work. Leaves: what they are, what they do; helps and hindrances to their work. Tubers and bulbs, leaf-buds, and flower-buds. Growth and Development: increase in size and changes of composition and structure; formation and storage of food materials. Flowers: their component parts, what they do; artificial fertilisation. Fruit: changes and development during ripening; forms and varieties, as, e.g., Apple, Strawberry, Plum, &c. Seed: formation of. Variation and selection. Names and orders of common garden plants, trees, &c.

Horticultural Operations and Practice.—Surveying and landscape gardening, elements of. Choice of site for a garden. Description and use of implements under each head. Operations connected with the cultivation of the land, with explanations and illustrations of good and bad methods: digging and trenching; draining, hoeing, stirring the soil, and weeding; watering, preparation of seed beds; rolling and raking; sowing, transplanting, and thinning, potting, planting; aspects, positions, and shelter



FIG. 90.—WASHINGTONIA FILIFERA, IN MRS. RICHARDSON'S VILLA GARDEN, NEW ORLEANS. (SEE P. 590.)

County Council or other body promoting the lectures wish it, deliver to their candidates certificates of the class in which they shall have passed. County Councils, lecturers, &c., wishing students to sit for examination must send in to the Society, not later than the first week in April, the total approximate number of students they will present in each grade; the actual number at each proposed centre will be required ten days before the examination takes place. Gardeners and students wishing to sit for the examination, but who have not attended any particular series of lectures, must send in their name and address to the Secretary, R.H.S., 117, Victoria Street, Westminster, not later than the first week in April, when they will be informed of the nearest centre at which an examination will be held. A small capitation fee will be charged for every student in order to partially defray the expenses of the examination. County Councils, lecturers, &c., must

c. To receive the sealed parcel of papers which will be posted to him from London two clear days before the examination. N.B.—If the papers do not arrive by the first post on the day of examination, he should immediately telegraph to the secretary of the society, 117, Victoria Street, S.W.

d. To preserve the seals of the parcel, unbroken, until he opens it in the presence of the candidates at the hour fixed for the examination to commence.

e. To distribute one copy of the examination paper to each candidate according to grade. It is better that the candidates should be seated Higher and Lower Grade alternately, and not too closely together.

f. The supervisor will then immediately read aloud the directions printed at the head of the papers, make a note of the exact time, and

staking, earthing, and blanching, &c. Propagation—Elementary principles: cuttings; budding and grafting, stocks used; layering, division, branch-pruning, root-pruning—old and young trees and bushes; training. Fruit culture: open air and under glass; small fruits, Apples and Pears, stone fruits, gathering and storing, packing and marketing; general knowledge of fruits, and selection of varieties. Vegetable culture: Tubers and roots, green vegetables, fruits and seeds, rotation of crops, and selection of varieties. Flower culture: outside and under glass. Manures and their application. Improvement of plants by cross-breeding, hybridisation, and selection. Arboriculture: trees and shrubs, and their culture. Insect and fungus pests, prevention and treatment.

Books.—*Primer of Botany* (MacMillan & Co.), Sir J. D. Hooker, K.C.S.I. *Botany for Beginners* (Bradbury, Agnew & Co.), M. T. Masters, M.D., F.R.S. *Plant Life* (Bradbury, Agnew & Co.), M. T. Masters, M.D., F.R.S. *Popular Gardening*, 4 vols. (Cassell & Co.), edited by D. T. Fish. *Epitome of Gardening* (Adam, Black & Co.), T. Moore and M. T. Masters. *Agriculture*, part i. and ii. (John Murray), W. Fream, LL.D.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the above will be held on Tuesday next, November 15. At 3 P.M. a lecture on "Zonal Pelargoniums for Autumn Flowering," will be given by Mr. C. PEARSON.

LINNEAN SOCIETY.—This Society met on Thursday, November 3, Professor STEWART, President, in the chair. Mr. W. B. BOTTOMLEY was elected. The Rev. Professor HENSLOW exhibited an instrument used in Egypt for removing the end of the Sycamore Fig, and gave some account of the mode of cultivation. The Rev. E. S. MARSHALL exhibited some hybrid Willows from Central Scotland, believed to be rare or new to Britain. Mr. C. T. DREYER exhibited some new examples of apospory in Ferns, namely, a specimen of *Athyrium filix-femina* var. *Clarissima*, with pinnæ showing development of prothalli by asexual apospory, and a seedling, *Lastræa pseudo-mas cristata*, showing in prothalli developed asexually over the general surface of the frond (pan-apospory). Mr. J. E. HURTING exhibited some live specimens of the short-tailed field vole, *Arvicola agrestis*, and gave an account from personal inspection of the serious damage done by this little rodent upon the sheep-pastures in the lowlands of Scotland. Mr. A. B. RENDLE exhibited some seedling plants of the Sugar-cane, which had been raised in this country by Mr. VEITCH. The discussion on several of these exhibitions having continued until a late hour, a paper by Professor HENSLOW, "On a Theoretical Origin of Endogens through an Aquatic Habit," was by consent adjourned to the next meeting of the Society, which will be held on Thursday, November 17, in the evening, at 8 P.M., when the following papers will be read:—"A Theoretical Origin of Endogens through an aquatic habit," by Rev. Prof. HENSLOW, F.L.S., &c., and "On the Buprestids of Japan, and their Coloration," by G. LEWIS F.L.S.

HISTORY OF ENGLISH GARDENING.—The Hon. ALICIA M. T. AMHERST and Mr. PERCY E. NEWBERRY have in preparation a work on the *History of English Gardening*. The first part of the book—that dealing with the period extending from the Roman Conquest to the end of the sixteenth century—will be a republication [by permission] in chapter form, and with considerable additions, of the articles by Mr. NEWBERRY, which appeared in our columns in 1888, 1889, and 1890. The work will be elaborately illustrated, and will be published by Mr. QUARITCH early in 1893.

NATIONAL CHRYSANTHEMUM SOCIETY'S SUPPLEMENTARY CATALOGUE.—Those of our readers who are interested in Chrysanthemum culture will be glad to learn that the above has now been issued,

and may be obtained from E. W. ALLEN, 4, Ave Maria Lane, E.C., and R. DEAN, Ranelagh Road, Ealing, W. This list, which is complementary to that issued by the Society two years ago, will be found to contain all that is of merit amongst novel varieties from the older sources, but excluding for the present those which have been raised in Italy. The list is a sufficiently long one without these, containing, as it does, so many early large flowered novelties from French raisers, who are devoting much attention to this section. We learn from the preface that although the majority of new varieties are of foreign origin, home raisers have contributed not a few of the finest show flowers, and that their efforts in this direction are not likely to be relaxed. The collaborators of the new list are Messrs. E. C. JUKES, G. GORDON, H. SHOESMITH, A. TAYLOR, and C. HARMAN PAYNE.

OPEN SPACES.—At the monthly meeting of the Metropolitan Public Gardens Association, the Earl of MEATH presiding, progress was reported with regard to the laying-out of the Duncan Terrace Enclosure, N., and Goldsmith Square, E. The usual arrangements being made regarding future maintenance, it was decided to undertake the laying-out of St. Mary's Churchyard, Woolwich, St. Thomas' Square, Hackney, and a playground at Kentish Town, at a total cost of about £1500, if sufficient funds could be secured for the purpose. Letters were read from the Kensington Vestry consenting to plant trees in Queen's Gate and Exhibition Road, S.W., adjoining the Natural History Museum; and from the Vestry of St. Botolph's, Bishopsgate, providing a sum of money for the improvement of the parish churchyard. Amongst other schemes under consideration were the acquisition of the "Copperas," Bromley-by-Bow; Buffalo Bill's site, Earl's Court, S.W.; the Eton and Middlesex Cricket Ground, N.W.; the Cross Bones Burial Ground, Union Street, S.E., and a playground in St. Matthew's Parish, Westminster.

THE LORD MAYOR'S SHOW.—To all who have a desire to see Britain grow her own fruits, the Trophy of Fruits, which formed one of the imposing features of the Lord Mayor's Show on Wednesday last, would give especial pleasure. The Worshipful Company of Fruiterers, with Sir JAMES WHITEHEAD, Bart., M.P., at its head, has done much to popularise fruit culture in this country, and the idea of a trophy forming part of the procession was a very happy one. The designing and carrying out of this idea was entrusted to Messrs. GEO. BUNYARD & Co., of Maidstone, and the result was exceedingly satisfactory. It is noteworthy that Mr. GEO. BUNYARD was afforded assistance by his brother Fruiterer, Mr. JOS. CHEAL, of Crawley, and by several other well-known Kent fruit specialists. It was constructed on one of Messrs. PICKFORD'S trolleys, and upon a central stage with sloping sides, handsome fruits of most kinds and all British grown were exhibited. One of the corners was dedicated to each of the counties growing the greatest acreage of fruit, Hereford, Worcester, Devon, and Kent. We have not space to further describe this new feature of an old institution, suffice to add that such a trophy was produced (and without the aid of flowers of any description), that it added materially to the attractiveness of the show, and was worthy of the Fruiterers' Company, and of home fruit-growers generally.

MOOREA IRRORATA.—This handsome Orchid, described by Mr. Rolfe in our columns, and figured in 1892, vol. xi., fig. 73, forms the subject of a coloured plate in the current number of the *Botanical Magazine*, t. 7262. The flowers are brownish-orange, the lobes of the lip straw-coloured, and marked with purple stripes.

CARLUDOVICA MICROCEPHALA is an interesting addition to a very curious and beautiful group, allied to the Palms. It has a short stem (3 to 4 inches only), marked with the rings of fallen leaves, and bearing at the top a few stalked, wedge-shaped,

plicated leaves, deeply dividing into two lanceolate lobes. The spadix is stalked with two spathes at the top, and bears an oblong mass of flowers at the summit. According to Wendland, it is a native of Costa Rica. It flowers at Kew every year, and is figured in the *Botanical Magazine*, t. 7263.

CALOCHORTUS KENNEDYII, Porter.—The petals of this new species are brilliant scarlet, with a dash of yellow in it. Mr. BAKER speaks of it as the most showy of the many new species discovered since he published his monograph in 1875. The figure in the *Botanical Magazine*, t. 7264, is taken from a plant that flowered at Kew.

CHAMÆDorea STOLONIFERA, Wendland.—A dwarf Palm, with stems a yard high, as thick as the little finger, and producing numerous stolons at the base, by means of which the plant is propagated. The leaves are wedge-shaped, deeply divided into two lanceolate lobes. The small globose yellow flowers are sessile, on loosely branched spikes. It is a native of Southern Mexico, and is figured in the *Botanical Magazine*, t. 7265.

RANUNCULUS CARPATICUS.—A large-flowered species, with thick creeping root-stock, and palmately-divided leaves. The blooms are variable in size, but when large, render the plant very showy. Kew. *Botanical Magazine*, t. 2766.

NORTH OF SCOTLAND ROOT, FRUIT, AND VEGETABLE ASSOCIATION.—The annual exhibition of this prosperous association was held in the Drill Hall, Inverurie, N.B., on Saturday, the 5th inst. The entries this year—which may be termed a year of unusual disaster—numbered 609 as against 630 last year, when the Association reached its majority, so that in spite of the adverse climatic influences the entries had not fallen off much. The finances are also in a flourishing condition, there being a substantial balance to the credit of the account.

CORBRIDGE AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—The second monthly meeting of the above, which was formed on September 27 this year, was held in the Town Hall, Corbridge, on Monday evening, October 31. Mr. A. OLIVER, the head gardener at Beaumont Castle, presided, and the attendance of members was good. Mr. BELL, gardener at Bythorn, read an instructive paper on "The Mechanism of Plants," which was followed by an interesting discussion, the chairman also making some appropriate remarks on the subject, and giving some good advice to the younger members. It has long been felt that a society for the improvement of gardeners was wanted in the district, and now that one has been started, and is in fair working order, it is hoped it will go on and prosper.

MESSRS. WM. FELL & CO.—This well-known Hexham firm, we learn, have again been favoured with an order for a large quantity of forest trees of various kinds from Her Majesty's Commissioners of Woods and Forests, to be planted in the Crown lands in the Isle of Man. They have also received a large order for fruit bushes from the Canadian Government for experimental purposes.

STOCK-TAKING: OCTOBER.—Since the last occasion for stock-taking, the Board of Trade has published a mass of figures concerning a year's trade of the country, and compared these with the previous ten years' record. The statistics are truly astounding, and should "give pause" to such as are inclined to "deplore the decadence of British trade," as they are pleased to term a momentary check. We learn that our trade has increased over fifty millions sterling in ten years, i.e., from £694,000,000 in 1881 to £744,000,000 in 1891 (all told). In 1888 our trade with "the States" was £122,000,000; £139,000,000 in 1889; £143,000,000 in 1890; £145,000,000 in 1891. There is no getting away from these facts, any more than there is from this—that, population for population, our trade is enormously in excess of that of the principal "protected" countries, France and the United States. Not a word of comment is

necessary here, and so we proceed to consider the trade of the past month, placing before the reader the usual extracts from the "summary" of the imports for the month of October as prepared by the Board of Trade:—

IMPORTS.	1891.	1892.	Difference.
	£.	£.	£.
Total value for month	£26,873,829	£24,726,858	—2,146,971
§II.—(A.) Articles of food and drink — duty free ...	12,929,033	11,995,301	—933,732
(B.) — do., dutiable	3,323,452	3,165,473	—157,979
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	5,423,318	4,444,693	—978,625
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,038,042	4,272,368	+234,326
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,301,447	1,335,734	+34,287
(B.)—Parcel Post ...	59,452	55,519	—3,933

The decrease of imports amounts to £2,146,971 value; there was one working day less in the month, and this with the great reduction in the price of the Wheat imported, accounts for the apparent decline. The imports of Wheat from Russia are very small; those from America, simply enormous. No wonder agriculture is depressed, when we remember how much there is of placing all the eggs in one basket. In vain, it would seem, is attention called to the enormous ever-increasing imports of eggs, butter, cheese, &c.; useless to keep on saying that it is cheaper to import from Denmark or France, than to try to get in produce other than cereals. Surely, this state of things is a disgrace to all parties. It is our duty only to notice it. When trade between farm and market-place is properly regulated, there will be less cause for grumbling than now exists. The following extracts from the figures relating to imports of fruits and vegetables for the past month have their share of interest for those interested:—

IMPORTS.	1891.	1892.	Difference.
Fruits, raw:—			
Apples ... bush.	593,472	859,658	+266,256
Cherries ... ..	...	...	...
Plums ... ..	...	1,182	+1,182
Pears ... ..	...	72,776	+72,776
Grapes ... ..	...	277,852	+277,852
Unenumerated, ..	706,685	78,671	—628,014
Onions	474,881	563,528	+88,647
Potatoes ... cwt.	44,135	115,857	+71,722
Vegetables, unenumerated, raw, ... value	£66,805	£72,461	+£5,656

We wait with patience for the disappearance of the word "unenumerated" from our little table.

THE EXPORTS

for the month of British and Irish produce foot up a total value of £18,725,460, or a decrease of £2,440,653, as compared with October in 1891. Anything but improvement here, it may be said, but there being five Sundays in October, gives one working day less, and that signifies a great deal; nearly as much may be placed to the account of diminishing invoice prices, or a loss of profit on work done not covered by cheapness of raw material. But we cannot get away from the fact that there is a heavy depression in trade, in textile fabrics and in metallic goods. This year does not stand an isolated instance of depression, we have had them before, and lived to laugh at foreboders of evil days. In Italy the signs are in favour of free-trading. Spain is discovering the error of its ways, and promises amendment in the matter of tariffs, and a great cry has gone up throughout the United

States in favour of true economy. Canada is learning how little she has to gain from her nearest neighbour, compared with what is to be had from England, and begins to incline a more willing ear to the blandishments of Sir JOHN LUBBOCK. The rate of exchange on India is a serious drawback to trade, which can only be counterbalanced to any appreciable extent by a large increase in the output of gold in the near future. "Turns for the better" have before now set in very quietly; it is not at all improbable that they will do so again shortly.

CHRYSANTHEMUM SHOWS.—Several reports of shows have reached us at the moment of going to press, but which we must defer to publish until next week. The Crystal Palace Show, on November 4 and 5, appears to have been productive of fine flowers and keen competition in the more important classes, whilst the specimen plants were, in some instances, insufficiently developed. Stroud, Gloucestershire, held a good representative exhibition on November 3 and 4.

HOME CORRESPONDENCE.

SHOW STANDS FOR JAPANESE CHRYSANTHEMUMS.—In your last issue, E. Molyneux kindly gave dimensions for boards to accommodate the very large blooms now exhibited. I should say exhibitors would do well to adopt them where they can; but instead of making new cases for carrying the blooms, why not use the present boxes and stands for the purpose by placing the large blooms in the centre, and putting the smaller ones, and the incurved, round the outside of the stands? Room, I think, would be found for them all to travel safely. By so doing, only one or two boards would be required for the large Japanese, which, as he says, could be taken loose, the blooms being placed in them at the show. It is not every gardener's lot to have an estate carpenter at his call. Perhaps our friend "E. M." who is always ready to impart practical hints, will say what he thinks of the suggestion. *Jno. Masterson, Weston House Gardens, Shipston-on-Stroud.*

ROOTWORK.—If a number of first-class gardeners, amateur and professional, were asked their opinion of rootwork, the majority would say, "Have nothing to do with it; it harbours fungus and plant vermin, and will give great trouble." Perhaps you will allow me to give my experience. More than fifteen years ago we had a fence in sight of the drawing-room, which it was desirable to hide by a pretty object. I had heard of a rootwork near here, and, on going to see it, was told of a gardener in the neighbourhood who had much experience and good taste in rootwork. I then consulted many friends, amateur and professional. Most advised against. One lady told me her rootwork had to be pulled down on account of a noisome fungus; but two quite first-class authorities (one professional, the other Mr. Berkeley) told me that they had seen quite successful rootwork, so I engaged the gardener, and, finding that he answered to description, gave him a free hand. A number of good-sized Spanish Chestnut and Oak trees had been cut down near us some years ago. We had the roots of these grubbed up, and found that the softer parts had perished, leaving the hard cores. With them the rootwork was built, and with its bark it was about 104 feet long, 23 feet broad in its widest part, 9 feet in its narrowest, and 6 feet high at its highest. The noisome fungus did trouble, but we dug it out carefully, and after a time saw no more of it. Slugs and snails were rather troublesome, but that they sometimes are where there is no rootwork. A good many Laurels had been planted to grow up and hide the fence, and also Euonymus, Box, and small trees. Fat Tommy, a fine cat known in the neighbourhood, and figured in your paper, lived for thirteen years in a tub running up and down, with a ring on a wire, to scare the birds from rare plants. Owing to other more pressing gardening work, the rootwork was neglected, and many Ferns took possession to the injury of other plants. Some of the earlier imported Azalea mollis, Abelia rupestris, Berberis stenophylla, Azalea amona, and other small shrubs, made the rootwork pretty in spite of its being over-grown. Taking the hint from the success of the shrubs, we next made a small rootwork at our cottage-garden near, planting Osmanthus of all sorts, Skimmias,

the more tender Spiræas, Clematis, climbing Roses, &c.; this has a pretty effect, and the shrubs have thriven wonderfully. Our old rootwork here was next taken in hand, and, having a gardener who does not mind the trouble of snail and slug hunting, we grubbed up the laurels, all but a few of the ornamental trees, and all the Ferns, put in fresh soil among the roots, made a large bed of good soil on the level at the top, and planted all manner of alpine and herbaceous plants and small shrubs, our object being to show what a great number of plants can be grown in a small space—an answer to friends who say that their gardens are too small to do much in. So far the remodeled rootwork is a complete success, and much prettier (looking like a wild bank) than any rockwork of the same size that I have seen, the black old roots, most of them still quite sound, setting off the plants. At the bottom of the rootwork there is a bed of good loam full of fine Primroses, and in the bottom bays such plants as Ramondia pyrenaica, Shortia galacifolia, Cyclamens, Colchicum speciosum, Hellebores, Meconopsis Wallichii, Galax apophylla, Pulsatilla, &c. At one end of the rootwork is a bed in which slabs of stone are sunk with plants against and amongst them, and at the east end a quantity of burr-work, so as to try the different shelters close to each other. *George F. Wilson.*

BORAX AS A PREVENTIVE OF MILDEW, ETC.—In your issue of October 22 (p. 497) reference is made to Mons. J. Morel's experiments with borax and boric acid, and their effects on vegetation and fungi, and a hope is held out that they may become useful agents in checking, or completely subduing mildew. As I have had some experience with borax as a mildew annihilator, perhaps a few lines giving the results attendant on its use may interest some readers of the *Gardeners' Chronicle*. About ten years ago, I had to deal with a very bad case of mildew on Vines, and as I was a new-comer at the place, I determined to subdue it, if possible, and having previously used borax with good effect on Roses, I concluded that its application to the Vines was likely to produce the same result. I found, however, that although I could kill all the fungoid growth visible on leaves and stems by syringing them with tepid soft water containing three-quarters of an ounce of borax to the gallon, and washing it off with clean water before it got time to dry, yet in a fortnight the places which were affected before this solution was applied were as bad as ever. This led me to the conclusion that only the mildew on the external portions of the plants were killed, the mildew spores which had pierced the tissues remaining quite healthy. In order to still further test the efficacy of borax as an anti-mildew specific, I again syringed a portion of one of the Vines, and allowed it to remain, but this dose proved worse than the disease, for every leaf thus bedewed was quickly killed. I may add that, by frequent experiments previous to these, I found that a weaker solution of borax than the one given above proved ineffectual, and when used at a greater strength injury was done to the foliage. Nevertheless, in spite of the injurious action of borax on leaves, it might be of service in preventing fungoid growth within the soil, and thereby prove a preventive to the Potato disease. During the last seven years I have been experimenting with sulphate of iron, with a view to ameliorate this evil, if not to entirely overcome it, and so far results have been most encouraging. As this compound is a manure, which sulphate of copper is not, I am inclined to believe it will become more extensively used when its inimical influence on fungi-germs are better known. It is not a manure, however, to apply indiscriminately, as it is powerful, and more harm than good will follow a too free hand in its use. To anyone situated in low-lying districts, I would say—try this chemical on your Potato-land before the haulm shows itself above-ground, and compare the crops obtained from an equal space of "dressed" and undressed ground, noting both the quantities and the effects of disease on each. *R. C. H.*

RIVERS' LATE ORANGE PLUM.—I was much amused on reading the lament of a member of the *Gardeners' Chronicle* staff that he could not find evidences beyond an empty plate of this Plum at the recent meeting at the Drill Hall. It is not fair to the press that good things—especially those which receive Certificates of Merit—should in this way disappear; but in this case only half-a-dozen fruits were shown, and these barely sufficed to allow the members of the Fruit Committee to get a taste. Perhaps it may be as well in the future to

insist upon a sufficient number of fruits for tasting should be furnished. The Plum in question was just about the size and form of an ordinary Green Gage, of a deep yellow colour, but a severe clingstone. The flavour was very much that of Coe's Golden Drop. That it was presented so late naturally led to its receiving a Certificate; still, it would be interesting to learn under what conditions the fruits were produced, and kept so long from harm. *A. D.*

CHRYSANTHEMUMS AND ASPHALTED PATHS.—Respecting the question asked in last week's *Gardeners' Chronicle* about Chrysanthemums being injured by being grown upon asphalted paths, I may mention that we have for years grown our plants upon the sides of walks of this description, and have not seen the least appearance of injury arising therefrom, and anyone seeing our house of Chrysanthemums at the present time would be convinced that they had not suffered from any cause. The walks are composed of tar and ashes, with enough spar to tone the colour, and a slight bed of ashes is placed beneath the pots in order to keep them level. We have also grown Strawberries successfully in a similar manner, but perhaps I ought to say we have not placed plants of any kind upon newly-made paths of this description, and if we had, we might have quite a different tale to tell. Were your correspondent's paths freshly made when the plants were placed upon them? *Thomas Coomber.*

RAINFALL IN NORTH WALES.—It may be of interest to your readers to know what the amount of rainfall here has been for the past month of October, it having been exceptionally large, viz., 44 inches. *J. Barnard, Mostyn Hall Gardens.*

DUPPLIN CASTLE.—I have to thank "Vagabond" very much for his addenda to my notes on a visit on Dupplin. Intelligence so kindly supplemented is very appreciative. When I made my hurried visit to that fine place, I was under pressing circumstances, with something like two hours in which to walk from the railway station (Forteviot), and back. To parade such extensive grounds was impossible. Had I sent to press half the knowledge I carried in my cranium from Dupplin, it would have filled more than a page of the *Gardeners' Chronicle*. I therefore touched on the chief cultural objects—which is always most acceptable to practical men. The historical lore of this place is very varied and ancient; even centuries prior to the stated period when the forebears of the present noble proprietor turned the tide of war with fails, and when the leader was resting he exclaimed, "O'hech hay," and the prompt rejoinder was, "and Hay thou shalt be called." Perthshire is pre-eminently in the van with Scottish seats, rich in landscapes and arboricultural treasures, and I hope to make a second visit to Dupplin and enjoy its park beauties along with friend Browning, as a lover of landscapes ought to. I made the attempt some years ago, but got engrossed so much in the attractions of Invermay (not Inverary, as stated at p. 525), and other fine seats, that after walking from Perth to Forgandenny to ford the river in early morn, I had the disappointment of not getting near Dupplin till late at night, and passed on footsore to my hotel at Perth, which I reached about midnight—vagabond like. I do not stand at trifles when fine gardens and fine landscapes are to be reached. *M. Temple.*

PLATANUS ORIENTALIS.—I lately saw a magnificent specimen of this at Barn Elms, Barnes, Surrey. This tree, which is perhaps one of the finest, if not the finest, in the country, is 100 feet in height, with a girth of 20 feet at 4 feet 6 inches from the ground. Barn Elms is about 100 acres in extent, and is rich in trees and historical interest. *B.*

PEARS.—It is interesting to note the effects of tree-lifting and judicious root-pruning, a practice too often done with undue severity. When the roots of trees are deeply embedded in cold damp ground, they are very liable to crack, and in cold districts they ripen very imperfectly, while the flavour of fruit from such trees is very inferior. Preparation for lifting may be done the previous season by cutting round the roots, which causes an abundant growth of fibre, thus preparing the tree for its removal and replanting, which should be to the level of surrounding soil. Then sun and air can do their beneficial work. Taking note of some Pear

trees on low walls which did not ripen their fruit till we root-pruned them during the growing season in early summer, they have, even in an untoward season like the present, produced fine fruit of good quality. Some Marie Louise are equal to what we often have seen in South and Mid England. We have always observed that when a barrier to the descent of top-roots was made at planting time (by a quantity of brick and lime-rubbish made firm at the bottom), the trees grow clean and healthy, and the fruit is decidedly superior to that where trees root deeply. *M. T.*

NEPENTHES.—In some remarks in the *Gardeners' Chronicle* of last week upon *Nepenthes* (p. 561), exhibited by Messrs. Veitch & Sons, the name *Northisi* is stated to have been applied to a new hybrid *Nepenthes* (*Northiana* × *Curtisi*). Allow me to enter my humble protest against such a name as *N. Northisi* × ever being registered in *Nepenthes* nomenclature; the ending of specific names in "i," "iana," and "æ," have a recognised and well-known botanical meaning, which the above custom would tend to destroy or render nugatory. It is also requested in the remarks that the hybrid × must always be added. This is often also illusory, as in the same article, amongst a list of names, I notice *N. Hookeriana* ×, with the × at the end of its name; now the species recognised in gardens under this name is not a hybrid, nor is it only a variety, as some would have us believe, but a very distinct species, and if it had its proper name, would be called *N. Rafflesiana*, Jack., which name horticulturally it has accidentally been deprived of; this is figured on p. 553 of last week's *Gardeners' Chronicle* as *N. Hookeriana*. The hybrid *N. Hookeræ* × is a different plant, also known as *N. anerleyense* ×, and probably the *N. superba* × (*Fl. Mag.*, t. 434) introduced some years ago by the General Horticultural Company. The first Pitcher-plant with which European botanists became acquainted was a model of nomenclature, alluded to often by the late Sir Wm. Hooker. The "*Planta mirabilis distillatoria*" of Grinnon certainly was a miraculous distilling plant. In 1840, Sir Wm. Hooker says:—"The word distillatoria, it will immediately be perceived, implies the secretion and concentration of the fluid in the pitcher. Thus, we see how admirably are the names of plants calculated in many cases to characterise some property residing in the plant itself, or to impress some portion of its history on our minds." Of course, your readers recognise in this plant the *N. distillatoria* of Ceylon. *W. Etherington Dixon, Assoc. Bot. Soc. Edin.*

THE FROST.—It would be interesting to learn what the temperature was during the past month of October. Evidently it is seldom that such severe frost is experienced so early in the season. We are assured on all hands that (in Scotland at least) we have no record of such low temperature so early in the season. On October 23 our lowest reading was 13° of frost; but I have been told that in other parts of Stirlingshire 18° of frost were registered. *M. T.*

NURSERY NOTES.

MESSRS. E. D. SHUTTLEWORTH AND CO., LIMITED.

This firm, which was formed into a limited liability company some two years ago, is about increasing the house accommodation at the Albert Nurseries, Peckham Rye, London, S.E., and now that the land taken up by the firm at Fleet in Hants has been got well under, and is proving exceedingly suitable for the cultivation of Roses, herbaceous plants, and many kinds of bulbs, it is intended that the London nursery shall be used only for samples of such plants, and that most of the land available for houses shall be devoted to this purpose, where large batches of Cycads, Palms, Ferns, and other plants, principally foliage, can be propagated for wholesale trade.

When visiting Peckham Rye a short time ago, we found the houses very well stocked with thousands of Palms and other things just ready for sale to the trade. These Palms can either be bought just after the first leaves are made, in

bundles before ever being potted, or they can be had in pots in different sizes. All the Palms, young and old, were looking fresh and healthy, and perfectly clean. Of course, as they are intended for the trade, the principal kinds present in any quantity are the different species of *Areca*, *Kentia*, and *Cocos*.

The finest feature of the place is, no doubt, the rare and wonderfully fine collection of Cycads, in two of the houses. These range from small and highly useful plants, in 7-inch pots up to large specimens, and all present the most healthy appearance, and are perfectly clean in every respect.

A large batch of *Dracæna Lindenii* is looking well, but not quite so well-coloured as it may be seen sometimes. *Crotons* are in considerable variety, but it is intended to increase both the stock and the collection as soon as possible; at present there are about fifty varieties catalogued. Some hundreds of young plants of *Gardenia* are looking first-rate, being of a bushy habit, and bearing healthy, deeply-coloured leaves.

Asparagus plumosus is also well represented by a good number of healthy, useful-looking plants, and not far from these are a few hundreds of useful plants of *Grevillea robusta*, in 6-inch pots. *Chrysanthemums* have not been grown to any extent, but it is intended to take up their culture as soon as more accommodation is ready for housing the same. One or two houses are devoted to *Orchids*, and a number of the more popular species are to be seen here. We noticed two or three nice pieces of *Vanda Kimballiana*, and there was a varied and miscellaneous collection of *Cattleyas*, *Cypripediums*, *Dendrobiums*, &c. Other plants such as *Callas*, *Ferns* in different species, *Azaleas*, &c., are being well done, and in more or less quantity are ready for the trade. The stock of herbaceous plants at Fleet is being rapidly increased, with a view to making it as complete as possible, and a good number of the more useful species, as well as many rare varieties, are already catalogued. *Pinks*, *Carnations*, and *Picotees* are said to be doing well, and it is thought that the firm will hereafter be able to make a specialty of them. Most of the houses at Peckham Rye are low span-roofed, something like 100 feet long by 18 feet wide, and the addition of three other such houses will give room for raising a very much larger supply of Palms and other such things than has yet been done.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 3.—Present: Dr. M. T. Masters in the chair, Mr. Morris, Mr. McLachlan, Dr. Russell, Dr. Müller, Rev. W. Wilks, Prof. F. Oliver, Dr. Scott, Prof. Church, Dr. Bonavia, Rev. G. Henslow, Hon. Sec.

Injuries to Plants by Fog.—Dr. Russell observed that, with reference to carrying out any experiments, the subject must be regarded from two points of view; firstly, the object would be to make an exhaustive investigation into the action of fogs upon plants. This, to a considerable extent, the Scientific Committee has already done, as shown in Professor Oliver's published report, and in a second upon which he is now engaged. Secondly, taking a wider aspect of the subject, the points which would have to be considered would be the composition of fogs in general, their origin and extent, their comparative densities, the amount of sulphurous acid, the consequent diminution of light, &c. Such investigations would lead to the more universally important consideration as to the increasing unhealthiness of London in winter. To carry out this extensive programme would necessitate the selecting several stations, involving continuous observations, both during fogs and in clear weather. The whole would require a staff of paid analysts. Dr. Russell then gave some interesting statistics of observations carried out at Manchester by Dr. Bailey, which will in due time be published. One point to which he alluded may be here mentioned—namely, the amount of chlorides contained in "fog collections" washed out of the air. He himself had found a dense precipitate of chlorides even on Dartmoor,

whenever sea breezes blew in that direction. *Apropos* of this, Professor Church remarked that he had on one occasion detected 7 grs. of salt per gallon at Cirencester, which was about 35 miles from the sea. It is evident, then, that the presence of chlorides do not necessarily always indicate the presence of sewage. Professor F. Oliver observed that, regarding the injuries from a horticultural point of view, the question as to the best means of preventing the action of fogs was most important. He described three methods. The first, with which he was very favourably impressed as to its efficiency, although it would probably prove to be the most difficult and expensive, was as follows:—The primary condition for success is that the plant-house must be air-tight. As glasshouses, however, are usually and purposely constructed with air-spaces beneath the overlapping glasses, these would have to be stopped up. In a house properly constructed, like that erected by Mr. Toope, the external air entered below, and was passed through boxes containing charcoal. A draught is created by the heated air of the house, which escapes at the top by means of exhaust caps, which allow of the passage of air from but not into the house. No sulphurous acid whatever then succeeded in passing through the carbon into the house, the filtration appearing to be perfect. A second method suggested was by means of sprays of various kinds, and by sprinkling the floors, &c. This method has its disadvantages, and Professor Oliver did not express a favourable opinion of it. The third plan is simply to spread canvas over the house during the period of the fog to prevent its passing into the cracks and into the house. Of course, the stoppage of light might be, in some circumstances, a serious objection, but not greater than that occasioned by the fog itself. The really injurious element of fogs is undoubtedly the sulphurous acid-gas, and this has to be especially combated. A discussion followed as to what steps should be taken by the Society in the matter. It was generally felt that, as far as the Scientific Committee were concerned, they could not do more than undertake the first object mentioned by Dr. Russell; and this has, in fact, been done. The second and wider object, however, is more or less directly concerned with the former, though it may have a much wider scope. It was proposed, therefore, to make a statement as to what the Royal Horticultural Society has already done in the matter, and to invite the co-operation and assistance of other societies, such as the Meteorological; finally, to appeal to the County Council to take steps towards carrying out a more extensive investigation than the Society alone could possibly accomplish.

Termes lucifugus.—Mr. McLachlan corrected an error in the description of the white ant of La Rochelle, as to the size of the larvæ, in that they are really smaller than stated, being less than a quarter of an inch in length.

Artichoke Gull.—He also exhibited a specimen of this disease on the Oak, alluded to at a previous meeting. It is produced by *Aphilotrix fecundatrix*, of which the agamic generation is known as *Andricus noduli*.

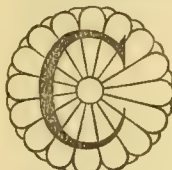
Calanthe Allonga Tubers.—Mr. Morris stated that the tubers exhibited by him at a meeting in June, 1891, and supposed to be of a species of *Kamperferia*, now proved to be derived from the above-named plant, an old Carib food plant. The description and chemical constitution ascertained by Professor Church will be found in the *Journal of the Royal Horticultural Society*, 1891, pp. lix. and cviii.

Conifers.—Dr. Masters exhibited a branch of *Pinus pinaster* with erect cones instead of their being reversed. He mentioned that he had once noticed a similar occurrence in the Scotch Fir at Zermatt, Switzerland. The former had been described as a new species with the name *Lemoniana*; but it merely represented a retention of the youngest condition of the cone. *P. ponderosa*.—He showed cones of this tree, which are peculiar in having the scales deciduous from below upwards, as occurs in *Abies*. *Pinus excelsa*.—He also exhibited a branching cone of this tree.

Pyrus japonica, fruit.—Mr. Read sent Apple-like fruits of this plant, remarkable for their large size, being 7 inches in circumference and $2\frac{1}{2}$ in height, and very symmetrical in form. They were grown against a sunny wall in Ealing.

The "Glassiness" Apple.—A specimen of this translucent Apple was sent from Naples by M. D. Piperno, where it is considered one of the best eating Apples in Italy. Professor Ward examined and described it on a previous occasion. (*Journ. Roy. Hort. Soc.*, vol. xii., 1890, p. clxvi.)

NATIONAL CHRYSANTHEMUM.



CHRYSANTHEMUMS.—This large annual gathering of the south country growers was held, as usual, in the Royal Aquarium, Westminster, on Tuesday, November 8, and two following days. The place was bright with groups and tables filled with Chrysanthemums, which were made the most of that the ill-adapted building would allow. It was generally admitted that the cut blooms, for general excellence, had never been excelled, although there was none extra large, nor any stand of them that could be said to greatly out-rival its fellows, as has occurred in most years. The beautiful Japanese varieties were enhanced by the presence of several fine novelties, and both plants in groups, and as trained specimens, were as good as could be.

THE SOCIETIES' COMPETITION.

This competition being open to all Chrysanthemum or horticultural Societies (affiliated or not), and the 1st prize consisting of a very handsome Trophy and £10, one would naturally expect this to be one of the most popular of the numerous classes offered in the schedule. However, the anxiety of different Societies to secure the award is not very general, or perhaps the growers prefer to exhibit their best specimens independently, and for themselves. The conditions imposed are, that there shall be twenty-four incurved blooms, in not less than eighteen varieties, and twenty-four Japanese, these latter to be distinct, and that all exhibits be the productions of *bona fide* members of the Society under whose auspices they are exhibited.

Although the entries were few, the quality of the 1st prize collection was of the best, and reflected the greatest credit upon the Society and upon its members from whose garden they came. Perhaps the Japanese were the strongest feature, but at the same time the incurved varieties were as good as we have ever seen shown in this class. St. Neot's Amateur and Cottage Horticultural Society, Huntingdonshire, who were placed 1st on Tuesday last, were 2nd in the competition last season, and the Society, which was successful then with a very fine collection indeed, are 2nd this year. The blooms comprising the successful collection on Tuesday were from the gardens of the Earl of Sandwich, and A. J. Thornhill, Esq. Havant Chrysanthemum Society were 2nd, and their display was very creditable.

CUT BLOOMS.

Incurved.—The general average of the incurved blooms was quite equal to that seen on other occasions, though it was feared that the lateness of the season would tell against this section particularly. The principal class was for thirty-six blooms, distinct, and the 1st prize consisted of the Challenge Cup and £10. As last year, Messrs. W. & G. Drover were the most successful, and were placed 1st for a very fine stand of blooms, almost of uniform merit. Perhaps the following were the best:—Jno. Lambert, Lord Alcester, Queen of England, Mr. S. Coleman, Alfred Salter, Jno. Doughty, Jeanne d'Arc, and M. R. Bannant; the 2nd position was secured by Mr. W. G. Ray, nurseryman, Teynham, Kent, amongst whose exhibits was a very pretty specimen of Jeanne d'Arc; Lady Dorothy and Princess of Wales were also very fine. Mr. Chas. Gibson, gr. to J. Wormald, Esq., Mordan Park, Mitcham, Surrey, was 3rd.

In the class for twenty-four incurved blooms, Mr. Shoesmith, with a collection of first-class flowers, secured foremost position, particularly fine were John Lambert, Empress of India, Golden Empress, Madame Darier, Alfred Salter, Mrs. Coleman, Miss M. A. Haggas, Princess of Teck, Lady Dorothy, and Refulgens. The 2nd prize went to Mr. Ritchings, gr. to Dr. Frankland, Reigate Hill, closely following; and the 3rd to Mr. J. Myers, gr. to the Earl of Sandwich, Huntingdon.

For twelve incurved varieties, distinct, Mr. Arthur Ocock, gr. to Mrs. McIntosh, Havering Park, Romford, was 1st, with a creditable collection. The varieties were Lord Alcester, Lord Wolsley, Mr. S. Coleman, White Venus, Golden Empress, Miss Violet Tomlin, Empress of India, Princess of Wales, Golden Queen of England, Jeanne d'Arc, Miss M. A. Haggas, and Golden Eagle. Mr. W. Collins, gr. to J. W. Carlile, Esq., Ponsbourne Park, Hertford, was a good 2nd; and Mr. G. Agate, Chrysanthemum Nursery, Havant, was 3rd. Mr. Jas. Myers, gr. to the Earl of Sand-

wich, Hinchbrook, Huntingdon, staged the best six incurved blooms, one variety only, the kind exhibited being Empress of India; Mr. Jno. Hewett, gr. to H. B. Mackison, Esq., Hillside House, Hythe, was 2nd, with Princess of Wales, and with Jeanne d'Arc, Mr. Jno. McKenzie, gr. to F. S. W. Cornwallis, Esq., Linton Park, Maidstone, was placed 3rd.

Japanese.—The competition in these classes was keener than for those of the incurved varieties, and the quality generally better. Perhaps a better average of Japanese bloom has never been seen at this show. The principal class was for forty-eight blooms, distinct, and the 1st prize consisted of the Holmes Memorial Cup and £10. This was well won by Mr. W. Herbert Fowler, Claremont, Taunton, and the following is a full list of the varieties included in his stand:—Sunflower, Louis Boehmer, Vivand Morel, Lord Brooke, Avalanche, Ruth Cleveland, Puritan, Mr. D. B. Crane, Mrs. Alpheus Hardy, R. Brocklebank, Mons. Bernard, Eynsford White, Baronne de Prailly, Madame Marie Hoste, Mr. E. Beckett, Boule d'Or, Hamlet, Mons. Freeman, W. Tricker, W. H. Lincoln, H. B. Ironside, Col. W. Smith, Mrs. W. H. Fowler, Lady T. Lawrence, Mrs. J. Clarke, Japonais, Aida, W. W. Coles, Glorioso, Mr. R. Williams, Stanstead White, Gloire du Rocher, Lilian B. Bird, Etoile de Lyon, Miss Hartshorn, Madame Baco, Mrs. E. D. Adams, Mrs. Falconer Jameson, Ethel Paule, Edwin Molyneux, Mr. A. H. Neve, Mrs. Jno. Laing, Florence Davis, Mr. G. Bryceson, and Coronet. The 2nd prize went to Mr. J. Myers, gr. to the Earl of Sandwich, Hinchbrook, Hunts, who was a thorough good 2nd, and included fine blooms of E. Molyneux, Florence Davis, and Louis Boehmer. 3rd, Messrs. W. & G. Drover, nurserymen, Fareham; and 4th, Mr. Charles Gibson.

In the class for twenty-four blooms, distinct, Mr. W. Herbert Fowler was again 1st, with blooms of much the same quality as in the larger class, and of the same varieties. Mr. Charles Ritchings, gr. to Dr. Frankland, The Yews, Reigate, was 2nd; and he, too, had very excellent specimens, especially might be mentioned Boule d'Or, Jeanne Delaux, W. Tricker, and Stanstead White; 3rd, Mr. C. Ling, gr. to E. P. Oakshott, Esq., Orchard Dene, Ealing; and 4th, Mr. Robt. Petfield, gr. to A. J. Thornhill, Esq., Diddington, Hunts.

Mr. A. Ocock, gr. to Mrs. McIntosh, Havering Park, Romford, secured 1st place in the class for twelve distinct blooms, with creditable specimens of Vivand Morel, Avalanche, Madame J. Laing, Florence Davis, Stanstead Surprise, Sunflower, Mrs. Falconer Jameson, W. H. Lincoln, Excelsior, Louis Boehmer, Gloire du Rocher, and M. A. Carrière; Mr. Trinder, gr. to Sir H. Mildmay, Dogmersfield Park, with an almost equal collection, was 2nd; and the 3rd place was taken by Mr. M. Harding, gr. to Mrs. Joad Patching, Worthing.

For six white blooms, one variety only, Mr. Jno. Hewett, gr. to H. B. Mackison, Esq., Hillside House, Hythe, with Stanstead Surprise, secured leading place; and Mr. Charles Cox, gr. to Jno. Trotter, Esq., Brickendon Grange, Hertford, was 2nd, with Avalanche; Mr. M. Harding, who also showed Avalanche, was 3rd.

Japanese Incurved.—Mr. Robt. Petfield, as last year, was 1st for these (but instead of for twelve blooms, the class now only requires six). The varieties were Edwin Molyneux, Japonais, Umpire, W. H. Lincoln, Boule d'Or, and Madame C. Audiguer. Mr. Howe, gr. to H. Tate, Esq., Park Hill, Streatham Common, was 2nd; and Mr. Harding 3rd.

Large-flowered Reflexed.—For twelve large reflexed blooms, Mr. Geo. Carpenter, gr. to Major Collis Browne, Broad Oaks, Byfleet, staged well-grown flowers of King of Crimson, Cloth of Gold, Chevalier Damage, Dr. Sharp, Pink Christine, Peach Christine, Cullingfordii, Mr. Forsyth, and Golden Christine; the 2nd position fell to Mr. Jas. Myers, and Mr. Chas. Brown, gr. to R. Henty, Esq., Langley House, Abbots Langley, was 3rd.

Large-flowered Anemones.—The best stand of twenty-four blooms came from Mr. A. Ives, gr. to E. C. Jukes, Esq., Hadley Lodge, Barnet; Mr. Jas. Myers was 2nd, and the 3rd position fell to Mr. R. C. Notcut, Broughton Road Nursery, Ipswich. These were all good.

Large Anemones.—For twelve large Anemone blooms (Japanese excluded), Mr. Ives again took leading honours with Empress, Mrs. Jules, Benedict, Grande Alvéole, Delaware, Gladys Spaulding, Lady Margaret, Marie Laglaiz, Cincinnati, W. G. Drover, Thorpe Junior, Nouvelle Alvéole, and Glück; Mr. R. C. Notcut was 2nd, and Mr. Chas.

White, 6, Garden Terrace, South Vincent Road, Southsea, was 3rd.

Japanese Anemones.—Again Mr. Ives was 1st for twelve distinct blooms in this section, being followed by Mr. R. C. Notcutt.

Anemone Pompons.—There appeared to be no competition in this class, but the exhibit of Mr. Jas. Myers was very meritorious. It included twelve varieties, and three flowers of each variety.

Pompons.—For twelve distinct varieties, three flowers of each to be shown in bunches with foliage, the 1st prize went to Mr. Chas. Brown, gr. to R. Henty, Esq., for very pretty and fresh looking flowers, including Miss Wheeler, Madame Elise Dordau, Madame Martha, Golden Madame Martha, Sunset, Black Douglas, Comte de Morny, and Prince of Orange. Mr. Jas. Myers was 2nd, and Mr. J. Agate, Chrysanthemum Nursery, Havant, 3rd.

Amateur Classes.—The conditions imposed here does not allow of any paid assistance whatever in the culture of the plants. For twenty-four Japanese blooms, Mr. H. G. Featherby, Bleak House, Gillingham, was 1st; Mr. Thos. Lansley, Pinner Road, Watford, 2nd; and Mr. Chas. White, Southsea, 3rd. The whole of these exhibits were highly satisfactory.

Mr. Jno. Horril, West Street, Havant, secured 1st for twelve distinct incurved blooms; Mr. Chas. White took 2nd place; and Mr. Thos. Lansley, 3rd. The competition was very keen between these and other exhibitors. Mr. Jno. Horril was again 1st for six incurved; Mr. George Walker, Wimbledon, 2nd; and Mr. F. Durrant, 4, New Road, Ware, 3rd.

For twelve Japanese blooms there were many entries, and Mr. Thos. Langley, who was 1st, staged a first-rate collection of blooms, including some of the newest varieties, and very well grown; Mr. F. Hicks, Elstree, Herts, was 2nd; and Mr. Chas. White, 3rd. In the class for six Japanese, Mr. F. Durrant was 1st; Mr. Jno. Horril, 2nd; and Mr. F. Hicks, 3rd.

Mr. Agate, Chrysanthemum Nursery, Havant, had the best twelve single-flowered blooms, bright, showy, large; and Mr. Wells, nurseryman, Earlswood, Surrey, had the second best. Good variety of colour and form was noticeable in these last.

AMATEUR AND SINGLE-HANDED GARDENERS' CLASSES.

For twelve incurved blooms, distinct, Mr. James Heath, gr. to M. Gurry, Esq., Abingdon Place, Newmarket, showed well, and secured 1st prize, whilst the 2nd and 3rd prizes went to Mr. Charles White, and to Mr. Charles Hudd, gr. to L. Loeffler, Esq., Kensington, respectively.

Mr. John Little, Hylands, Romford, was 1st for six incurved, followed by Mr. James Heath and Percy Waterer, Esq., The Briars, Longfield, Dartford, Kent.

The twelve Japanese class was an unusually strong one, and, consequently, competition was severe, at least, amongst the best stands. 1st, Mr. J. Heath, gr. to M. Gurry, Esq., Abingdon Place, Newmarket, whose finest blooms were E. Molyneux, Maiden's Blush, Puritan, Stanstead White, Vivian Morel, Sunflower, a very even, fine lot of bloom; Whickham Jones, Esq., Leicester (?) Lodge, South Norwood, was 2nd, with the following extra-fine varieties—Etoile de Lyon, Sunflower, and Puritan; 3rd, Percy Waterer, Esq., The Briars, Lingfield, Dartford, with excellent blooms, but rather small.

In the competition for six Japanese varieties, diverse, 1st, Mr. J. Heath, with flowers, the best of which figured also in the previously-named class; 2nd, E. Mawley, Esq., Rosebank, Great Berkhamsted, Etoile de Lyon, E. Molyneux, Val d'Andorre and Avalanche were very fine varieties; 3rd, Mr. W. Jones, gr. to W. Hooper, Esq., Glens Mount, Sutton, Surrey, with V. Morel, J. Delaux, and A. H. Neve.

METROPOLITAN CLASSES.

For twelve incurves, diverse, 1st, Frank Bingham, Esq., 6, Bethune Road, Stoke Newington, with excellent blooms of M. R. Bahuant, Lord Alcester, C. Flammarion, Lady Hardinge, Empress of India, and Refulgens, a not over large, but an even good stand; 2nd, Mr. F. E. Wright, gr. to G. Troup, Essex Lodge, Upper Clapton; his best were Prince of Wales, Lord Alcester, Lord Wolseley, and Prince Alfred. F. Bingham was the winner of the 1st prize in the next class, that for six incurved blooms, his Queen of England, John Doughty, Lord Alcester, J. Lambert, Empress of India, and A. Salter, were excellent; 2nd, Mr. W. Davey, gr., Cedar House, with fine blooms of Golden Empress, Lord Alcester, Violet Tomlin, &c.; 3rd, Mr. Wright. The last exhibitor was likewise 1st for twelve Japanese varieties, also for six; whilst F. Bingham, Esq., was 2nd.

TABLE DECORATIONS AND BOUQUETS.

These were of the usual kind—some of really good quality and arranged in perfect taste, others not particularly commendable either for tasteful idea or effective execution.

For three vases or epergnes, Mr. Seale, Vine Nursery, Sevenoaks, was 1st, with pretty exhibits. He was followed by Mr. Walter Mole, Hemel Hempstead; and Mr. R. Potter, gr. to Sir M. W. Collett, Bart., St. Clare, Hersing, Sevenoaks.

The principal class, however, in this group was for a table of bouquets, wreaths, &c., illustrating the decorative value of Chrysanthemums, and here a very light and tasteful arrangement secured 1st place for Mr. J. R. Chard, Stoke Newington; Messrs. Perkins & Sons, Coventry, were a very good 2nd; and Mr. H. O. Garford, florist, Stoke Newington, was 3rd.

Mr. R. Potter was 1st for two bouquets of Chrysanthemums; Mr. E. Chadwick, Brighton, 2nd; and Mr. C. Lye, gr. to Sir Spencer Wells, Hampstead, 3rd.

GROUPS (OPEN).

These had to cover, or at least not exceed, a space of 100 square feet, quality and general effect to be the leading features.

Here, Mr. Norman Davis, nurseryman, Camberwell, was placed 1st, and although the greater variety of high-coloured blooms in the next best group pleased the more superficial observers, Mr. Davis' plants were the more nicely-graded down to the floor, more regular as regarded the outline of the group as a whole, and it had few, if any, partially-developed blooms. White, pale pinks, and yellows were the predominating tints. Messrs. Reid & Bornemann, nurserymen, Sydenham, had the second best group, and, as we have said, they failed to secure the first place, for a few obvious reasons; Mr. Stevens, St. John's Nursery, Putney, was 3rd, a good full compact group, principally consisting, as did the others, of Japanese varieties.

Six trained specimens. These were particularly fine plants—large, well grown, full of bloom, yet not too full, and provided with a fair quantity of foliage. Moreover, the training was a little more free than was once the mode, certainly a much-to-be-desired improvement. 1st, Mr. D. Donald, gr., Leyton, with the varieties Christine, Dr. Sharp, Bertha Rendatler, Margot, and Gloire du Rocher, &c.; 2nd, Mr. T. Brook, gr. to W. Reynolds, Esq., The Grove, Highgate, whose specimens of Chinaman, B. Rendatler, Bouquet Fait, and Avalanche were worthy of admiration; 3rd, Mr. Wesker, with good plants and fine bold blooms, a little thinly distributed.

For four trained specimens, 1st, Mr. R. Clarke, gr. to W. Griffiths, 44, Palace Road, Streatham, S.W., his varieties being Source d'Or, Margot, B. Rendatler, Mrs. G. Rundle, the second and third being very fine plants; 2nd, Mr. Gilks, gr. to W. E. Freer, Esq., Elm House, Walthamstow, with well-trained and grown plants of Elsie, Bouquet Fait, W. Robinson, and Dr. Sharp; Mr. W. Davey was 3rd; his specimen of W. Robinson was finely bloomed—a fine coppery-coloured, showy variety.

In the best six standard class, the 1st prize fell to Mr. D. Donald, gr. to J. G. Barclay, Esq., Leyton, Essex, for nice specimens of Anne Cleburn, Cleopatra, Stanstead Surprise, Chinaman, and Bertha Rendatler, all furnished with foliage, and not stifiy tied.

Mr. W. Davey, Cedar House, Stamford Hill, was 1st for four standards of Stanstead Surprise, B. Rendatler, Iles des Plaisirs, and Margot; 3rd, Mr. W. Wesker, gr. to A. Horn, Esq., Tooting Beeches, with densely flowered tall plants.

The six trained Pompon competition, brought neatly-trained, fair-sized specimens of Marie Stewart, Rosinante, Scur Melanie, &c., from Mr. F. Gilks, who was awarded 1st place, the 2nd being taken by Mr. W. Davey, and the 3rd by Mr. Wesker, whose Eynsford Gem and Nellie Rainsford were very commendable varieties and plants.

One specimen Chrysanthemum of any type, 1st, Mr. F. Gilks, with Christine; 2nd, Mr. Davey, with Stanstead Surprise; and 3rd, Mr. Wesker, with Mrs. G. Rundle.

The 1st prize for twelve plants for the dinner-table was taken by Mr. John Macgregor, gr. to Dowager Lady Hay, North House, Putney Hill, whose well-grown little plants, fresh-looking, and in the best condition, consisted of Croton, Prince of Wales, and others, Pandanus Veitchi, Arealias, Palms such as Geonoma, &c.; 2nd, Mr. J. Myers, gr., Hinchinbrook House, Huntingdon.

Mrs. Myers' prizes for three best blooms of a new incurved variety not yet in commerce, 1st, Mr. Robert Owen, Floral Nurseries, Castle Hill, Maidenhead, for Robert Petfield, an English seedling, a fine

compact bloom of good depth, and with a smooth petal of good width. The colour is light purple. This lady gave a prize for the best new Japanese, same conditions. This prize was taken by Mr. W. Seward, The Firs, Hanwell, for a large rich velvety-crimson reflexed variety of the finest proportions and quality.

Messrs. Pitcher and Manda's prizes for the three best new Chrysanthemums (plants) raised from their seed. 1st, Mr. W. Gilbert, gr. to B. Le Mere Foster, Esq., Sennowe Hall, Norfolk. The varieties (Japanese) consisted of likely-looking flowers, of, respectively, a red, mauve, and yellow colour.

MISCELLANEOUS EXHIBITS.

These consisted largely of Chrysanthemums, either as cut blooms or plants, and added much interest to the show, as well as tending to relieve the somewhat shabby appearance of the building.

Messrs. Pitcher and Manda, Hextable, had a group of novelties, including their G. W. Childs, E. Molyneux x Cullingfordi. It is of a deep rich velvety crimson—a fine variety; W. A. Manda, a canary-yellow variety from America; Lord Brooke, certificated in 1891—a seedling of a creamy-white colour; Primrose League, and some of lesser merit. The rest of their exhibit consisted of foreign and home novelties, and a great quantity of cut bloom.

Mr. H. J. Jones, Ryecroft Nursery, Hither Green, S.E., exhibited the novelties, C. E. Shea, a yellow-coloured reflexed Japanese, a flower of much graciousness—the white sport from Louis Bohmer, with its hairs. It is pretty as such flowers go. Mr. E. Rowbottom, another new variety, has volute incurved florets, of a bright yellow. It is a seedling Japanese of 1891. This exhibitor had a tableful of plants, mostly consisting of novel kinds.

In the incurved section was May Tomlin, deep rose; Mr. Robinson King, noticed elsewhere; a white Japanese, named Gaetan Guelfi, globular in shape, with twisted florets; Mr. R. Leadbeater, in the same style, but yellow; Florence Davis, Marie Hoste, Hetty Dean, and others, found a place on his table.

Messrs. E. D. Shuttleworth & Co., 256, Peckham Rye, had a table of plants, consisting of Palms, Dracenas, Cyclamens, grasses, Bambusa, Crotons, Heaths, &c., a capitally grown lot of small stuff.

Messrs. H. Cannell & Sons, Swanley, Kent, had a magnificent tableful of cut zonal Pelargonium blooms, with the finest of trusses and most delicate colours. Their exhibit of Cyclamen in flower was very good for the time of year, and their very extensive one of Chrysanthemum flowers, stuck into dark green moss wide enough apart for each to be seen all round, was a lesson in exhibiting. Among the many single-flowered varieties was one with thread-like rays, yellow, an elegant thing. The rest consisted of the best old and new varieties in most sections of Mump.

Many zonal Pelargoniums were shown by Mr. G. Burnett, gr. to Mrs. Fenton, The Grange, Hillingdon; and fine orchard-house Apples by Messrs. T. Rivers & Sons, Sawbridgeworth. Mr. Wright, gr., Middle Temple, showed some naturally-grown plants of Miss Rose, a single-flowered variety, good as a market flower. The plants had a good deal of merit as decorative objects.

The horticultural trade was well represented, but space forbids us to say anything further.

Messrs. Williams & Son, Upper Holloway, had a group of foliage plants, Orchids, &c. Messrs. Reid & Bornemann, Sydenham, some seedling Chrysanthemums. Mr. W. Seward, The Firs, Hanwell, also seedling Chrysanthemums. Mr. Jas. Dibben, Wickham Park Nursery, Brockley, seedling Chrysanthemums. Also from Messrs. Pearson & Sons, Chilwell, Notts; Mr. Chas. Blick, Warren Garden, Hayes Common; Messrs. Carter & Co., Barnet; and Mr. A. Ives, Hadley Lodge. Good bunches of Gros Maroc Grapes came from Mr. Wm. Allan, Gunton Park Gardens. Tomatos from Mr. Geo. Featherby, The Nurseries, Gillingham. A collection of Apples from Messrs. Cutbush & Son, Highgate; also a collection of Heaths and foliage plants. Collections of Apples from Messrs. John Lsing & Sons, Forest Hill, and from Messrs. J. Cheal & Sons, Crawley; also a number of cider and other Apples from Messrs. Gaymer & Sons, cider makers, Barham, Atnenborough. Mr. W. Brown, florist, Richmond, exhibited tasteful wreaths and crosses. Mr. A. Newell, gr. to Sir Edwin Saunders, Fairlawn, Wimbledon, a table composed of foliage plants and berried plants. Mr. Jas. F. McLeod, gr. to J. Pierpoint Morgan, Esq., Dover House, Roehampton, a group of well-flowered Bouvardias; and Mr. Charles Bruggemann, Ville Franche-sur-Mer, some sprays of Chrysanthemum frutescens.

FRUIT AND VEGETABLES.

The show of fruit was a little more extensive than that of last year, and the quality was good, especially in the Apple classes. Mr. Chas. Ross, gr. to Col. Archer, Eyre, Welford Park, Newbury, was 1st, for six dishes of dessert Apples; and Mr. Thos. Turton, gr. to J. Hargreaves, Esq., Reading, 1st, for six dishes of culinary Apples.

The 1st prize for six dishes of dessert Pears went to Mr. Geo. Goldsmith, gr. to Sir E. Loder Bart., Leonards Lee, Horsham; and the 2nd to Mr. W. Allan, gr. to Lord Suffield, at Gunton Park, Norwich.

Mr. J. H. Ridgewell, Histon Road, Cambridge, took 1st place for six dishes of Potatoes.

Grapes were shown in some quantity, and of good merit. Mr. W. Harman, gr. to the Earl of Denbigh, Neunham Paddock, Luttreth, was 1st for three bunches of white, with Muscat of Alexandria; the 2nd place went to Mr. C. Griffin, gr. to A. Christy, Esq., Coombe Bank, Kingston-on-Thames; and Mr. J. Bury, gr. to C. Bayer, Esq., Forest Hill, was 3rd.

For three bunches of black (other than Gros Colmar), the 1st prize went to Mr. Allan, for very fine and well-coloured bunches of Black Alicante; Mr. A. Ocock, gr. to Mrs. McIntosh, Romford, was 2nd; and Mr. Howe, gr. to Henry Tate, Esq., Park Hill, Streatham Common, 3rd.

For Gros Colmar, the 1st prize was obtained by Mr. J. Edmunds, gr. to the Duke of St. Albans, Bestwood Lodge, Notts; Mr. Geo. Elliott, gr. to P. N. Graham, Esq., Hurst Side, West Molesey, 2nd; and Mr. E. Tautz, 1, Queen's Walk, Ealing, 3rd. Mr. J. H. Ridgewell was 1st for nine dishes of Potatoes, offered by Messrs. Sutton & Sons, Reading; and Mr. T. Haines, gr. to the Hon. D. R. Bouverie, Colehill House, Highworth, 1st for four dishes.

The entries for the prize for a collection of vegetables offered by the same firm were numerous, and the excellence of the exhibits was frequently remarked. Mr. Charles Gibson, The Oaks garden, Carshalton, was 1st; Mr. R. Lye, gr. to W. H. Kingsmill, Esq., Newbury, 2nd; C. T. Waite, gr. to the Hon. W. P. Talbot, Glenhurst, 3rd; and Mr. Charles Brown, gr. to R. Henty, Esq., Abbots Langley, 3rd. Messrs. Webb & Sons, Wordeley, Stourbridge, also offered prizes for collections of six vegetables, and the winners in this class were Mr. C. T. Waite, 1st; Mr. W. Pope, gr. to the Earl of Carnarvon, Newbury, 2nd; and Mr. R. Lye, 3rd.

CERTIFICATES, &c.

The meeting of the Floral Committee took place at 3 o'clock in the Library, Mr. E. C. Jukes, presiding, there being, as is usual at the November meeting, a large number of new varieties. First-class Certificates of Merit were awarded to Messrs. J. R. Pearson & Sons, Chilwell Nurseries, Nottingham, for Japanese Edwin Lonsdale, a large and fine bright pale red Japanese, with a silvery reverse, broad-petalled and full. To Mr. W. Seward, The Firs, Hanwell, for Princess Victoria, a large and full creamy-blush Japanese of great promise; and to Charles Shrimpton, a bright pale red reflexed Japanese, promising to make a fine exhibition variety. To Mr. Charles Blick, The Gardens, The Warren, Hayes Common, Kent, for Charles Blick, a bold and striking yellow Japanese, something of the character of Boule d'Or, but paler in colour; very promising, and La Deul, a very fine large bright rosy-red Japanese Anemone, which will make a good exhibition variety. To Mr. R. Cawte, Brookleigh, Esher, for Brookleigh Gem, a sport from Jeanne d'Arc, of a deep pinkish-rose colour, that promises well for an incurved exhibition variety. To E. C. Shea, Esq., Fooks Cray, Kent, for Miss Dorothea Shea, a large pale red reflexed Japanese, with buff reverse. To Messrs. James Carter & Co., seed merchants, High Holborn, for Rosy Morn, a beautiful soft pink Japanese, reflexed, deep, and full. To Mr. R. Owen, nurseryman, Maidenhead, for Lucy Kendal, a fine purplish-red Japanese, rich in colour, and for incurved Robert Petfield, a very promising variety indeed, in the way of Lady Harding, of good colour, and broad florets. To Mr. J. Agate, nurseryman, Havant, for Princess May, a large white Japanese, with long tubular petals, a little thin as shown, but said to be very fine indeed in quality.

Japanese L'Enfant des Deux Mondes, a white sport, from Louis Boehmer; also Mr. J. Whittle, a deep blush, broad-petalled Japanese, like H. A. Neve; Mermaid, a broad-petalled white incurved Japanese; and Pearl, a fine petalled white incurved, from Messrs. J. R. Pearson & Sons the committee wished to see again. A bronzy sport from the Anemone-flowered Glück, from Mr. W. Kaye, Wor-

cester Park, Surrey, the committee wished to see again; and the same request was made in respect of Duke of York, promising incurved Japanese, deep red, with silvery reverse, of the build of Comte de Germiny, from Mr. J. Dibbens, Breakspear Road, Bickley.

Japanese Miss Maggie Blenkins, a chestnut-red Japanese, with yellow reverse, from C. E. Shea, Esq.; also Japanese Charles Herrin, a large pale incurved variety, cerise-red, with silvery reverse. All these were promising flowers, and will come before the committee again.

The *Gardeners' Magazine* Medal, for exhibits of superior merit, were awarded to Mr. Arthur Ocock, The Gardens, Havering, for his 1st prize twelve blooms of incurved Chrysanthemums in Class 5, and for his 1st prize twelve Japanese in Class 8.

WATFORD CHRYSANTHEMUM SHOW.

NOVEMBER 1, 2.—The seventh annual show of the Watford Chrysanthemum Society took place on the above dates in the Agricultural Hall, Watford.

The show was well attended, and was above the average in merit, the Chrysanthemums being quite up to former years.

In the centre of the hall was a fine feature in the decorations of the exhibition—a varied group sent by the president, the Earl of Clarendon (gr. Mr. Myers). The Earl of Essex, and several other gentlemen, also sent extensive and well-assorted groups.

The prize list shows that Mr. H. Hucks Gibbs, M.P., Aldenham House, Elstree, took the greater part of the prizes, including fourteen 1st, three 2nd, and three 3rd prizes (amongst them being the award given by the National Chrysanthemum Society for the best six Japanese blooms). His chief prizes in division 1 (open to all comers) were for the best miscellaneous group of horticultural plants, twenty-four incurved varieties, twenty-four Japanese varieties, twelve Japanese blooms distinct, and also for the best cut bloom in the show.

Mr. C. R. Humbert (the Hon. Sec.) was successful in gaining the Silver Cup, value £5 5s. given for the best group of Chrysanthemums in the division, open to the United Kingdom, also the Silver Medal awarded for the best exhibit in the show.

In division 1, open to all comers, the 1st prize for six Primulas, in 6-inch pots, went to Mr. S. T. Holland; and the 2nd to Mr. G. Lake. In the same division Mr. T. F. Blackwell won 1st prize for best twelve Japanese blooms, one variety, Stanstead White. This exhibitor also carried off the 1st prize for twelve incurved varieties, and 2nd for six Japanese blooms.

The prize for the best collection of vegetables was secured by Mr. T. F. Halsey, M.P.; the 2nd going to Mr. G. W. Williams. The former also secured 2nd prize for best collection of fruit.

The Piece of Plate, value £3 3s. (offered by Mr. W. Horton), to members, for the best group of Chrysanthemums, was won by Mr. W. B. Hawkins. The other chief prize-winners for groups were the Hon. R. Capell and Mr. C. J. Beer.

Mr. A. Scrivener again this year took the chief prizes for wreaths, crosses, &c.; whilst Mr. R. Henty gained three 1st prizes for cut blooms, for members, and the 1st prize for vegetables.

The other 1st prizes for vegetables were taken by the Rev. H. F. H. Barchell Herne and Mr. James Fox. The value of the prizes amounted to £140.

PORTSMOUTH CHRYSANTHEMUM.

NOVEMBER 1, 2.—A very fine exhibition was held in Portsmouth Drill Hall, notwithstanding that there was a falling off in some of the classes, as we notice in most shows this year, owing to the unfavourable weather at the end of the summer; still, the display on the whole, in the cut-bloom division, was a very fine one, no less than 1200 blooms being staged, exclusive of Pompons, or single-flowered varieties. There was a wonderful display of hardy fruit, Grapes, and vegetables, such as has not before been seen in Portsmouth. Groups of Chrysanthemums were arranged at the sides of the Hall, with good effect. Mr. Hatch, gr. Victoria Park, won the 1st prize with a solid bank of bloom; Mr. Hunt, gr. to Sir W. Pink, Shrover Hall, Cosham, was 2nd.

Prizes were offered for a group of Chrysanthemums arranged with foliage plants—a commendable class. Here J. Burridge, North End Nursery, Portsmouth, won the 1st prize easily.

Plants for table decoration made a fine display. Mr. Amye, gr. to the Hon. Mrs. Elliott Yorke, Hamble Cliff, Netley, was 1st for twelve.

Double Primulas were excellently shown by Mr. Hatch, who was awarded 1st prize in the class for those plants.

Specimen plants do not call for comment, these being poorly represented.

Cut Blooms.—For forty-eight and thirty-six half incurved and half Japanese varieties, Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Fareham, was an easy 1st with solid medium-sized Japanese and well-finished incurved. Two of his varieties, viz., Princess May, a seedling white Japanese, with long narrow drooping florets, and the incurved Mrs. Mitchell, a buff coloured sport from Empress Eugénie, seem to be of great promise. There were five competitors. Mr. Neville, gr. to F. N. Flight, Esq., Twyford, was placed 2nd.

In the class for twenty-four distinct half-incurved and half-Japanese, Mr. Inglefield, gr. to Sir J. Kelk, Bt., Tedworth, Marlborough, was 1st with heavy blooms, and Mr. N. Molyneux, 2nd.

Japanese in twelve varieties were best staged by Mr. Agate, of the Chrysanthemum Nurseries, Havant; Mr. Hawkins, gr. to E. Laphorne, Esq., Gosport, being 2nd. Six competed. Mr. Hawkins was 1st for twelve incurved varieties; Mr. C. Steptoe, gr. to G. A. Gale, Esq., Horndean, was 2nd.

Reflexed varieties where best shown by Mr. H. Adams, gr. to T. S. Edgcombe, Hinton House, Southsea; Mr. Penford, gr. to Sir F. Fitz-Wygram, Bart., M.P., Leigh Park, Havant, being in the 2nd place.

Anemone-flowered varieties were staged best by the last-named exhibitor in the class for twelve, and Mr. Steptoe was 2nd. Mr. Hunt was 1st, for six incurved of any one variety, with neat examples of Princess of Wales; while Mr. N. Molyneux took a similar award for six of any one Japanese variety with solid blooms of Avalanche.

Pompons were a bright display, the best twelve bunches coming from Mr. Hatch; Mr. Agate being 2nd; but who, however, turned the tables on his opponent in the class for the same number of single-flowered varieties. Mr. Wells, Earlsfield Nurseries, Earlswood, Redhill, was 2nd. Mr. Hatch was 1st for fringed varieties in bunches of three. The premier incurved bloom in the show was a full, richly-coloured Golden Empress, shown by Mr. Inglefield; and Mr. Agate, with Stanstead White, won in the Japanese section.

Messrs. Perkins, Coventry, had the best Chrysanthemum bouquet; and Mrs. Conway, Havant, was unapproachable for the best arranged epergne, table decoration, and a vase of foliage and berries.

ASCOT CHRYSANTHEMUM.

NOVEMBER 2, 3.—At this exhibition, the groups of Chrysanthemums have for some years become a notable feature, and this occasion was not an exception, for nowhere else have we seen better groups; and, considering that the season has not been propitious to the grower, the results achieved were the more remarkable. In the class for the largest growers, Mr. Cowie, gr. to Kere L. Oliver, Esq., Whitmore Lodge, was easily 1st, with plants which were about 2 feet high in the front of the group, gradually increasing in height to the back, and the flowers and the arrangement of the plants were very good. Mr. May, gr. to Lady Isabella Krane, Sunningdale, was 2nd. In the smaller class, Mr. H. White, gr. to the Marchioness of Conyngham, Ascot, won the premier award without difficulty.

Groups of miscellaneous plants were largely shown, and tastefully arranged. Mr. Thorne, gr. to Major Joicey, Sunningdale Park, was 1st, with a very prettily-arranged table. Cyclamens, Chinese Primulas, and Solanums were also well shown, especially the first named.

Cut blooms were present in large numbers, and of good average quality. The principal class, that for thirty-six (i.e., eighteen incurved and Japanese varieties), distinct, for which a silver cup was offered; Mr. Page, gr. to H. P. Leschallas, Esq., Bagshot, was rather easily 1st, his blooms being very good. Mr. Sayre, gr. to Miss J. Dunning Smith, Ascot, was 2nd. These same exhibitors occupied similar positions in the class for twenty-four incurved, showing fairly good blooms.

Mr. Popple, gr. to the Hon. Lady Cowell Stepney, Wood End, was 1st for twelve incurved varieties; and Mr. Edge, gr. to Lord Harlech, Tetworth, was 2nd.

Mr. Woodhouse, gr. to Miss H. Belcher, Spring Grove, had the best six distinct varieties. For twelve Japanese, Mr. Cowie was successful, with

even, heavy blooms, well set up; Mr. Popple being 1st for six Japanese.

Reflexed varieties seem to have received a good deal of encouragement here; and for twelve distinct varieties Mr. May was an easy 1st, with richly-coloured flowers of moderate size; and Mr. Cole was 2nd. Mr. Joy, gr. to Mrs. Entwistle, Sunninghill, was the winner for the best six blooms of any one of the Queen section, with full, solid flowers of Empress of India; and Mr. Page was 2nd. The variety Avalanche won 1st and 2nd prizes for six of any one variety of Japanese, Mr. Page and Mr. Thorne being the winning exhibitors.

Mr. Joy was 1st for any Japanese variety, excluding white varieties, with E. Molyneux; and Mr. Page was 2nd, with Viviani Morel.

A class had been provided for twelve blooms to be put up with not less than 9 inches of stem above the board, Mr. Lane here winning easily.

The premier incurved flower in the show was one of Madame Darrier; as was one of Viviani Morel, in the best Japanese.

BOLTON CHRYSANTHEMUM.

NOVEMBER 4, 5.—The sixth annual exhibition in connection with the Bolton Horticultural and Chrysanthemum Society was held in the Town Hall last Friday and Saturday, and was visited by an exceptionally large number of people, over 900 paying for admission between the hours of seven to nine on the closing night. The judges were unanimous in declaring the exhibits, taken altogether, as the best they have seen this year. There were 38 exhibitors, and 157 entries. The 1st prize for group of Chrysanthemum plants, and the Society's Bronze Medal, was awarded to Mrs. J. K. Cross (gr., Walter Wainwright), and the 2nd fell to Mr. J. W. Makant, J.P. (gr., Henry Shone).

In section 1, for a group of miscellaneous plants arranged for effect, the 1st prize fell to Mr. John Heywood, J.P., The Pike (gr., George Pawson); and the 2nd to Mr. Martin Musgrove, J.P. (gr., F. Powell). In other classes, the principal prize-takers were Mrs. Haslam (gr., James Hicks), A. Heine (gr., Jao. Cragg), and Mrs. Shaw (gr., Chas. Jones).

PRESTON AND FULWOOD HORTICULTURAL.

NOVEMBER 5.—What was considered the most successful meeting of the year in connection with this Society was held on Saturday at the Preston Town Hall, and in honour of His Worship the Mayor, who is President of the Society, a specially attractive exhibition of plants and fruits was held in the Guildhall. The contributors included most of the best growers in and around Preston, and the exhibition was worthy of the occasion. The Society offered prizes for special productions, and the following were the principal awards:—First-class Certificate—Wm. Troughton, for varieties of Onions, Apples, and Potatoes; S. H. Scott, The Lindens, for a bowl of hybrid Roses; Lord Latham, for a dish of twelve Potatoes; Miss Ffarington, Tomatoes; W. Troughton, six table plants, distinct; H. E. Page, twelve Japanese Chrysanthemums; and another for two bushes of black Grapes. In the open prizes, Wm. Troughton secured 1st, with Apples; and Lee Campbell (Herefordshire), was awarded 2nd. On Saturday evening a paper was read by Mr. Hathaway, gr. to Lord Latham, he having for his subject, "The Tomato." The Mayor presided.

MARKETS.

COVENT GARDEN, November 10.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.]

MARKET quiet. Prices unaltered. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 0-3 6	Melons, each ... 0 6-1 3
— Nova Scotia, per barrel ... 10 0 17 6	Pine-apples, St. Michael ... 4 0-6 0
Cobs, per 100 lb. ... 100 0	Oranges, Florida, per case ... 16 0-20 0
Grapes, per lb. ... 0 6-1 6	
Lemons, per case ... 15 0-35 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ferns, various, doz. 4 0-9 0
Aspidistra, per doz. 15 0-30 0	— per 100 ... 5 0-8 0
— specimen, each 7 6-21 0	Ficus elastica, each 1 6-7 6
Begonia, per doz. ... 6 0-12 0	Heliotrope, per doz. 3 0-6 0
Chrysanthemums, p. doz. ... 4 0-12 0	Marguerite, per doz. 6 0-12 0
— large plants, ea. 1 6-2 6	Mignonette, doz. pots 6 0-12 0
Cyperus, per dozen 4 0-10 0	Palms, various, each 2 0-10 0
Dracena, each ... 1 0-5 0	— specimens, each 10 6-8 4 0
Erica, various, per dozen ... 9 0-18 0	Pelargoniums, scarlet, p. doz. ... 4 0-6 0
	Solanums, per doz. 9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 3 0-6 0	Odontoglossum, crispum, 12 blms. 2 0-6 0
Asters, p. doz. bun. 6 0-9 0	Mignonette, 12 bun. 3 0-6 0
Bouvardias, per bun. 0 9-1 0	Pelargonium, scarlet, per 12 bun. 5 0-8 0
Carnations, 12 blms. 1 0-3 0	— 12 sprays ... 0 6-1 0
Chrysanthemums, p. doz. blooms 1 6-6 0	Primula, double ... 0 6-0 9
— p. doz. bunches 4 0-10 0	Pyrethrum ... 2 0-4 0
Eucharis, per dozen 4 0-6 0	Roses, Tea, per dozen 1 0-2 0
Gardenia, per dozen 2 0-4 0	— coloured, dozen 1 6-3 0
Heliotrope, per doz. sprays ... 0 6 0 9	— yellow (Maréchal), per doz. 2 0-5 0
Lilac, white French, per bunch 5 0-6 0	— red, per dozen ... 1 0-2 0
Lilium Harrisii, doz. 9 0-12 0	Stephanotis, 12 sprays 4 0-6 0
— various, doz. ... 2 0-4 0	Tuberose, 12 blms. 0 3-0 9
Maiden Hair Fern, 12 bunches ... 4 0-6 0	Violets, Parme French, per bunch 3 6-4 6
Marguerite, per doz. bunches ... 3 0-4 0	— Czar, French, per bunch 2 0-2 6
Mimosa, French, per bunch ... 1 0-2 0	— small French, p. doz. bunches 1 6-2 0
Orchids:— Cattleya, 12 blms. 6 0-12 0	— small English, p. doz. bunches 2 0-3 0

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-
Beans, French, lb. ... 1 0-1 6	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 2 0-3 0	Parsley per bunch ... 0 3-0 6
Carrots, per bunch ... 0 4-0 6	Shallots, per lb. ... 0 6-...
Cauliflowers, each ... 0 3-0 6	Spinach, per bushel 3 6-...
Cucumbers, each ... 0 4-0 8	Tomatoes, per lb. ... 0 6-1 0
Endive, per dozen ... 2 0-3 0	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

Market still continues firm for best samples, 75s. to 85s.; dark soil, 52s. 6d. to 57s. 6d. J. B. Thomas.

SEEDS.

LONDON: Nov. 9.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market somewhat bare of buyers. In American Red Clover Seed, which just now is the favoured article, the recent advance is well sustained. There is no change this week in either Alsike White or Trefoil. Rye-grasses tend upwards. Winter Vetches are in short supply; a spell of fine weather would greatly improve the demand. Königsberg Tares being very cheap and good, attract increased attention. Canary seed is steady. Spot Hemp seed, being remarkably scarce, is advancing in price. Peas and Haricots are firm. Buckwheat, Zari, Millet, and Linseed, show no alteration. The Board of Trade returns give the imports of Clover and grass seeds into the United Kingdom for the last ten months of this year, as cwt. 228,259, value £488,590, as against cwt. 180,873, value £391,453, for the corresponding period of 1891.

FRUITS AND VEGETABLES.

SPITALFIELDS: Nov. 8.—Quotations:—Cauliflowers, 2s. 6d. to 6s.; Savoys, 2s. 6d. to 6s.; Cabbages, 2s. 6d. to 4s. per tally; Brussels Sprouts, 1s. 6d. to 2s. per half-sieve; Spinach, 1s. to 1s. 6d. per bushel; Seakale, 6d. to 9d. per punnet; Greens, 1s. 6d. to 2s.; Turnips, 1s. 8d. to 2s.; Carrots, 1s. 6d. to 2s. 6d.; Parsley, 1s. 6d. to 2s. per dozen bunches; Parsnips, 4d. to 1s. per score; Beetroot, 1s. 6d. to 2s. per half-sieve; Horseradish, 1s. to 1s. 2d.; Celery, 4d. to 1s. per bundle; Cucumbers, frame, 1s. 6d. to 2s.; Leeks, 2s. to 2s. 6d.; Cabbage Lettuce, 6d. to 8d.; Endive, 4d. to 8d. per dozen; Onions, English, 5s. 6d. to 6s. 6d. per cwt.; do., Spanish, 5s. 6d. to 6s. per case; do., Dutch, 4s. 9d. to 5s. 6d.; do., Belgian, 5s. to 5s. 6d. per bag of 110 lb.; Carrots, 25s. to 50s. per ton; Tomatoes, English, 4s. to 5s. per peck; Pears, 2s. 6d. to 3s. 6d. per half-sieve; Apples, English, 2s. 6d. to 5s. 6d. per bushel; do., American, 10s. 6d. to 17s. 6d. per barrel.

STRATFORD, Nov. 8.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 3s. 6d. to 4s. 6d. per tally; Savoys, 3s. 6d. to 5s. do.; Greens, 1s. to 2s. 6d. per dozen; Cauliflowers, 1s. to 1s. 6d. do.; do., 4s. to 7s. per tally; Turnips, 1s. 6d. to 2s. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 40s. to 50s. do.; do., cattle-feeding, 35s. to 40s. do.; Parsnips, 60s. to 70s. do.; Mangolds, 16s. to 20s. do.; Swedes, 20s. to 25s. do.; Onions, English, 6s. to 6s. 6d. per bag; do., Dutch, 4s. to 5s. do.; Apples, English, 2s. 6d. to 5s. per bushel; do., American, 12s. to 13s. per barrel.

BOROUGH: Nov. 8.—Quotations:—Cabbages, 3s. to 4s. 6d. per tally; Cauliflowers, 1s. to 1s. 9d. per dozen; Brussels Sprouts, 1s. 3d. to 2s. per half-sieve; Lettuces, 6d. to 1s. per score; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 1s. 6d. per dozen bunches; Onions, English, 6s. 6d.; do., Dutch,

5s. per cwt.; Horseradish, 2s. to 2s. 3d.; do., foreign, 1s. 6d. per bundle; Apples, English, 2s. 6d. to 10s. per bushel.

FARRINGTON: Nov. 10.—Quotations:—Tomatoes, 3d. per lb.; Apples, American, 12s. to 15s. per barrel; King Pippins, 4s. 6d. per bushel; Wellingtons, 4s. do.; Walnuts, 4s. per peck; Grapes, 12s. to 15s. per box; Turnips, 2s. 6d. per bag; Onions, 5s. 6d. per cwt.; do., Spanish, 6s. per case; Cabbage, 5s. per tally; Cauliflowers, 3s. 6d. to 4s. do.; Carrots, 50s. per ton.

POTATOS.

SPITALFIELDS: Nov. 8.—Quotations:—Bruce Magnums, 60s. to 65s.; Snowdrops, 60s. to 70s.; Reading Wonder, 50s. to 60s.; Hebrons, 50s. to 55s.; Imperators, 50s. to 60s.; Magnums, 50s. to 65s. per ton.

BOROUGH: Nov. 8.—Quotations:—English Magnums, 55s. to 65s.; Hebrons, 60s. to 65s.; Snowdrops, 60s. to 70s. per ton.

STRATFORD: Nov. 8.—Quotations:—Dark land, 50s. to 55s.; light land, 60s. to 65s.; Bruce Magnums, 70s. per ton.

FARRINGTON: Nov. 10.—Quotations:—Magnums, 60s. to 65s.; Snowdrops 70s.; Imperators, 65s. to 65s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (bushel) for the week ending November 5, and for the corresponding period last year:—1892: Wheat, 28s. 9d.; Barley, 27s. 7d.; Oats, 17s. 9d. 1891: Wheat, 36s. 7d.; Barley, 30s. 11d.; Oats, 20s. 6d.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80s. to 115s.; do., inferior, 46s. to 75s.; Hay, best, 80s. to 112s.; do., inferior, 26s. to 50s.; and Straw, 26s. to 44s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.				No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 3, 1892.
	Above (+) or below (—) the Mean for the week ending November 5.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.				
0	1 +	26	8	— 143 + 257	2	217	41.6	13
1	0 aver	31	17	— 337 + 293	3	173	25.1	33
2	1 —	32	15	— 225 + 227	3	169	23.5	41
3	1 +	37	5	— 193 + 216	9	159	24.8	30
4	1 —	40	20	— 173 + 291	1	151	21.2	34
5	1 +	41	0	— 164 + 146	8	136	20.9	18
6	1 +	31	7	— 246 + 238	2	172	39.4	38
7	0 aver	35	10	— 171 + 186	2	174	32.5	40
8	0 aver	40	3	— 148 + 135	1	160	26.2	40
9	1 +	36	7	— 191 + 149	1	191	32.2	58
10	0 aver	43	6	— 133 + 162	1	164	32.2	63
* 1	+	67	0	— 4 + 42	4	160	25.2	22

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending November 5, is furnished from the Meteorological Office:—

"The weather varied considerably in different parts of the Kingdom. Over Ireland there were

several very fine, bright days; although during the latter part of the time there was frequent rain. Over the greater part of Scotland the conditions were generally cloudy or dull, with slight rain almost daily; while over England the weather was very rainy at first, then fine and dry, with local fogs, and finally rainy again.

"The temperature differed very little from the mean in any district. The highest of the maxima were recorded either on November 3 or 4, and ranged from 59° in 'England, S.,' 'Ireland, S.,' and the 'Channel Islands,' to 55° in 'England, N.E.' The lowest of the minima were registered either on the 1st or 2nd, when they ranged from 24° in 'England, N.E.,' the 'Midland Counties,' and 'England, S.W.,' to 31° in 'Scotland, N.,' and to 38° in the 'Channel Islands.'

"The rainfall greatly exceeded the mean in 'England, E. and S.,' and slightly in the 'Midland Counties,' 'England, S.W.,' the 'Channel Islands,' and over Ireland. In Scotland and the northern parts of England the fall was less than the normal.

"The bright sunshine was less than the mean in 'Scotland, N.,' 'England, S.,' and the 'Channel Islands,' but exceeded it in all other parts of the kingdom. In Ireland the excess was very large. The percentage of the possible duration which was actually registered ranged from 63 in 'Ireland, S.,' and 58 in 'Ireland, N.,' to 41 in 'England, N.E.,' to between 37 and 39 over the west of Great Britain, and to only 22 in the 'Channel Islands,' 18 in 'England, S.,' and 13 in 'Scotland, N.'"

NOTICES TO CORRESPONDENTS.

*. PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of our readers.

ARBOR VITE AND YEW: *J. W.* We do not remember any case in which stock has suffered from eating the former, although if eaten in large quantities it might have injurious effects. Deer will eat the shoots in hard weather without being injured by it. Yew, on the contrary, acts sometimes as a poison if eaten greedily by stock that have not got accustomed to it by moderately partaking of it. The wilted shoots are more dangerous than the fresh. Have you Meadow Saffron, *Colchicum autumnale*, growing in the pastures in quantity? This plant is frequently a cause of the loss of horses, cows, &c.

CATERPILLAR ON LIME TREES: *An Old Subscriber.* Before we answer you, we should like to inspect the caterpillar next year. It might be that of the goat moth or the buff-tip moth. The chrysalids winter in the soil under the trees, and might be forked out and collected at a little cost.

CHINESE SACRED LILY: *J. T. F.* Strictly speaking, not a "Lily," but *Narcissus tazetta*. A bowl filled with the bulbs in flower was figured in the *Gardeners' Chronicle*, April 13, 1889.

CHRYSANTHEMUMS DAMPING OFF: *C. T. C.* Keep the air of the house slightly warm, say 45°–50° by means of fireheat, and afford ventilation in considerable amount by opening the upper lights or ventilators, and afford a little at night. Be careful not to stop water about, and mop up that which runs from the pots when affording water. Let the plants stand quite two feet apart, and as near the glass as is convenient.

COCOS WEDDELIANA: *F. C.* When the plants reach mature age they will flower. It is not a rare occurrence.

CORRECTION: *Chrysanthemums* Charles Bonstedt and Vesuvius, reported on p. 565 to have come from Mr. H. J. Jones, were exhibited by Mr. Robert Owen, Castle Hill, Maidenhead.

IRIS GERMANICA: *J. A. Climpson.* There is no trace of fungi in the Iris, but plenty of maggots still in the rhizomes "all alive," and we think these sufficient to account for everything.

NAMES OF FRUITS: *E. B. G.* 1, Blenheim Orange; 2, Brownlee's Russet; 3, not recognised; 4, Warner's King; 5, Hollandbury; 6, King of the Pippins; 7, not recognised; 8 and 10, Beauty of Kent; 9, Damelow's Seedling; 12, Hambleton Deux-ans; 13, Hanwell Souring; 14, Ducksbill; 15, Ringer; 16, Reinette de Caux; 17, Mabbott's Pearmain.—Pears: 1, Beurré Superfin; 2, Beurré Clairgeau; 3, Verulam; 4, Beurré Bachelier; 5, too much decayed.—*M. Brodie.* 1, Pitmaston Duchess; 2, Van Mons Leon le Clerc; 3, Knight's Monarch; 4, Beurré Diel; 5, Duchesse d'Angoulême; Apples: 8, Hanwell Souring; 9, Brabant Bellefleur; 10, Minchall Crab; 11, Gravenstein; 12, Betty Geeson.—*E. G. Allen.* 1, Rosemary Russet; 2, Adams's Pearmain; 3, Striped Beefing (?); 4, Golden Russet or Rosemary Russet; 5, Cellini Pippin; 6 and 7, Striped Beefing.—*G. Southcott.* 1, King of the Pippins; 2, Cockpit; 3, not known; 5, Kerry Pippin.—*R. C. W.* Pear, Beurré d'Aremberg; 3, Apple, Barossa; 7, not recognised.—*H. R. Pears.* 1, Thomson's; 2, Beurré Bachelier; 3, Uvedale's St. Germain. Apples: 1, Margil; 2, past recognition; 3, Stirling Castle; 5, Non-such; 6, Warner's King; 7, Manks' Codlin; 8, Col. Vaughan; 11, Royal Somerset; 12, Court of Wick; 17, King of the Pippins; 20, Northern Greening; others not recognised.—*Reginald.* 1, King of the Pippins; 2, Alfriston; 3, Rymer.—*Pat.* Apple: The Queen.—*R. J. S.* 2, Devonshire Red; 3, Tower of Glamis; one Apple and two Pears rotten.—*John Julian.* 1, Duchess d'Angoulême; 2, Marie Louise d'Uccle; 3, Doyenné du Comice; 4, Duchesse d'Angoulême; 5, White Doyenné; 6, Lord Lennox; 7, Adams's Pearmain; 8, Manks' Codlin.—*T. R.* 1, Beurré Rance; 2, Crassane; 3, 4, Marie Louise; 5, Easter Beurré; 6, Passe Colmar.

NAMES OF PLANTS: *H. M. P.* *Euonymus europæus*.—*F. P. D.* *Gossypium herbaceum* (cotton plant).—*W. T.* *Trapa natans* or its variety, *T. bispinosa*.—The Singhara Nut.—*C. C.* *Maxillaria* sp. Send better specimen with bulb.—*A. G. H.* *Oncidium caesium*.—*H. T. B.* *Cotoneaster frigida*.

POMEGRANATE SEEDLINGS: *Constant Reader.* Do not waste space and labour in growing these on to fruiting stage, unless you have a very high, big stove, as the tree will grow to a height of perhaps 25 feet. If you reside in a southern county (sea-side), the plants will grow well and flower on a south wall, and may be trained either as a Peach (fan), or horizontally like the Pear. There are dwarf, double-flowered varieties, fit for pot culture, which are very pretty decorative greenhouse plants.

PYRUS JAPONICA FRUITS: *C. M. W.* The fruits are scarcely edible in the way that Apples are, but, like Crabs, they would make a nice preserve or jelly. By the way, Medlars, now in season, make a jelly when bletted, equal to that made of the Guava.

SEEDLING APPLE: *W. Davis.* A pretty-looking fruit, but too acid for dessert, and too small for kitchen use. There are so many good Apples now to be had.

SEED PODS OF CATTLEYA MOSSIE: *R. G.* Without actually testing the seeds by sowing them on a pan of sphagnum moss, peat, and crocks, it is not possible to determine which if any are fertile seeds. Usually there is a great deal of chaff to a very few good seeds in a pod of any species of Orchid ripened in this country.

COMMUNICATIONS RECEIVED.—*J. R. J.*—*P. N.*—*F. M.*—*W. E. G.*—*Arborist* (anonymous).—*R. C.*—*J. R.*—*H. D.*, Berlin.—*W. E. W.*—*H. F. C.*—*R. E.*—*E. C.*—*W. & J.* Birkenhead (will try to discover it, and let you know).—*G. Elder* (next week).—*J. Bagny*.—*R. T.*—*J. H.*—*A. D.*—*W. W.*—*W. W. C.*—*U. D.*—*W. A. C.*—*M. T.*—*S. P.*—*O. W.*

SPECIMENS RECEIVED.—*J. B. D. H.*—*W. Parker.*—*T. C.*—*Amicus*.—*B. W. A.*—*A. A.* (too late for this week).—*J. G.*—*A. S.*—*D. W.* Wythes.—*J. J. D.*—*W. H.*—*T. B.*—*E. D. L.*

DIED.—On Tuesday, November 1, Mr. G. Manning, son of Mr. T. Manning, of Messrs. Veitch & Sons, Chelsea.

STOCK	Inches.	SIZES	Inches.
14x12	20x15	20x16	22x16
16x12	22x16	24x16	24x18
20x12	24x16	24x18	24x18
16x14	22x18	24x18	24x18
18x14	22x18	24x18	24x18
20x14	22x18	24x18	24x18

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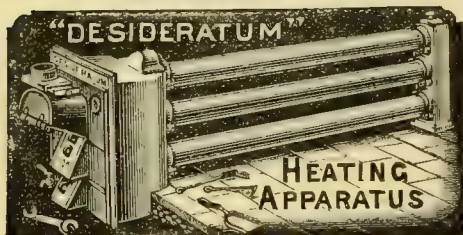


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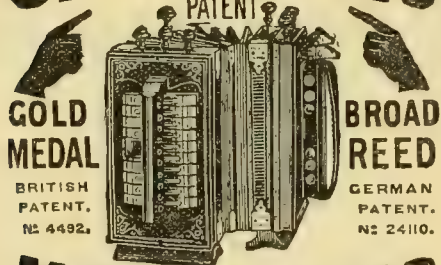
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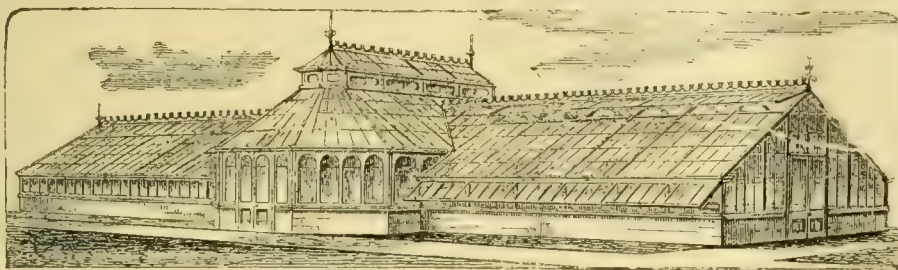
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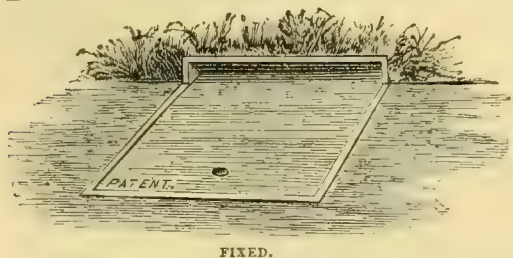
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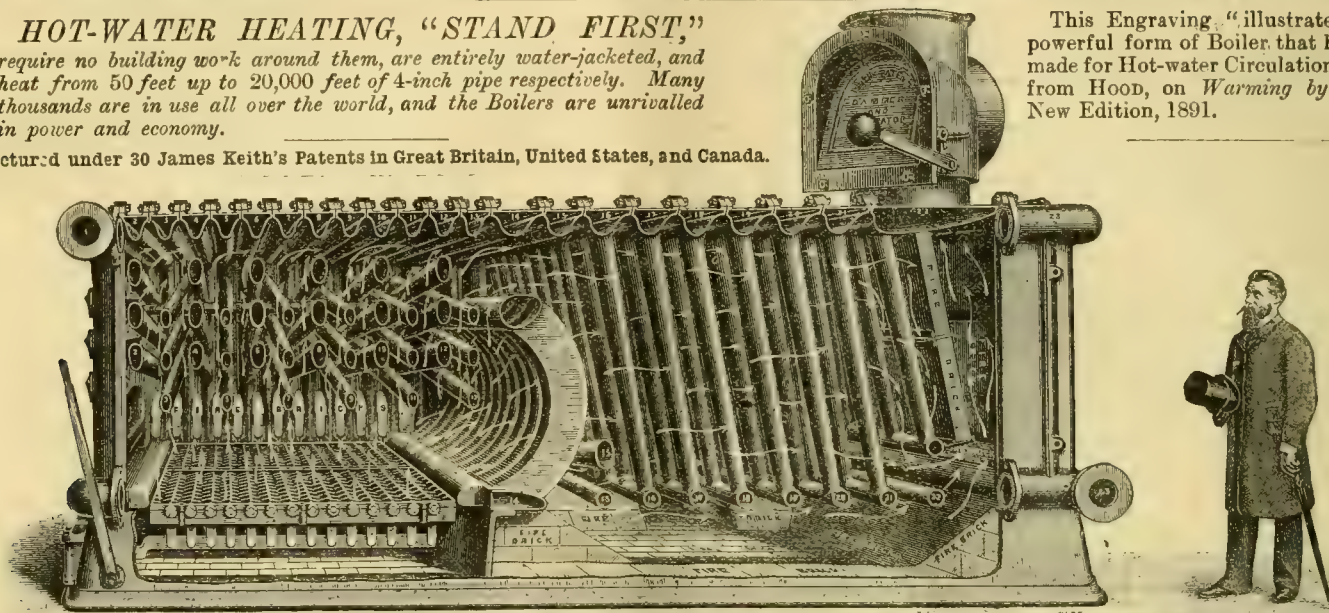
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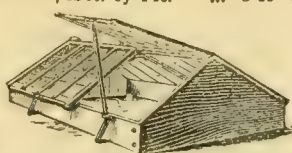


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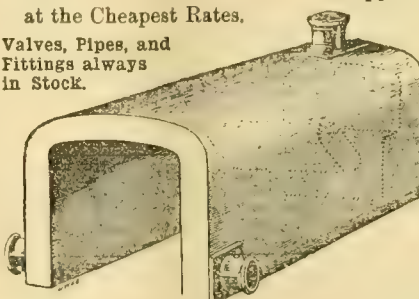
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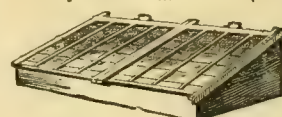
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HARBINGERS OF SPRING. HYACINTHS, varied and beautiful, 1s. per 100. TULIPS, mixed shades and colours, 5s. per 100. CROCUS, blue, striped, and yellow, 1s. 6d. per 100. DAFFODILS, diversified and fragrant, 1s. 6d. per 100. Full detailed Supplementary LIST on application. CARTERS', Bulb suppliers to the Royal London Parks, &c. 237 and 238, High Holborn, London, W.C.

CHRYSANTEMUMS.—Best sorts, true to name. Strong Cuttings from 1s. 6d. per dozen; 10s. per 100. Many valuable Prizes have been taken by our Customers during the past four years.—CATALOGUE two stamps, of W.M. ETHERINGTON, Swanscombe, Kent.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. McARTHUR, The London Nursery, 4, Maida Vale, London, W.

GLOIRE DE NANCY CARNATIONS, several thousand strong rooted layers, cheap. SMILAX, good stuff, in 48's, 4 feet. JOHNSON AND CO., The Nurseries, Hampton.

SEAKALE, BAGLEY'S INCOMPARABLE.—For forcing, this is really grand stuff. Sample only need be sent for to secure order. Special quotations for large quantities.—Apply to W. BAGLEY, Millstoft Farm, Fulham.

FOR SALE, 25,000 strong 1-yr. and 2-yr. Whinham Industry GOOSEBERRY Bushes. Cheap to clear. Apply—W. HUNTER, Tyne Green, Hexham.

GOLDEN EUONYMUS, good bushy stuff, for Potting. Splendid Colour, H. H. MOORE, Chichester.

DOBBIE'S ROSES, CHRYSANTEMUMS, and DAHLIA POT ROOTS.—A special CATALOGUE of these is Now Ready, and can be had post-free on application. Growers would find it to their advantage to see this before placing their orders.—DOBBIE AND CO., Florists, Rothesay.

FOR SALE, ROYAL GEORGE PEACH TREE, fan-trained, 16 feet wide, 12 feet high; was moved two years ago. Also VIOLETTE HATIVE NECTARINE, on 4½ feet stem, 16 feet wide, 8 feet high; was moved last season. Call and see, or write to—W. H. DIVERS, Ketton Hall Gardens, Stamford.

500 IRIS "Ochroleuca," true, strong roots, 6s. per dozen, 30s. per 100; to clear ground; free on rail; sample 1s by post.—W. J. WATSON, Seedsman, Town Hall Buildings, Newcastle-on-Tyne.

ORCHIDS.—New and rare species, a special feature. Catalogue forwarded post-free on application. SEEGER AND TROPP, Ltd., Orchard Nursery, East Dulwich, London, S.E.

RASPBERRY CANES.—Norwich Wonder, Carter's Prolific, also Fastol, strong and well rooted. Not less than 1000 canes supplied. ALBERT BATH, Vine Court, Sevenoaks, Kent.

BARR'S BULBS, WINTER and SPRING. The following Catalogues free on application:—Catalogue of beautiful flowering Bulbs for all seasons. Catalogue of all the best and most beautiful Daffodils (Narcissi). Catalogue of all the best and most beautiful Hardy Perennials. List of rare and beautiful Croci and Meadow Aconites.

COLLECTIONS OF BULBS. 10s. 6d., 21s., 42s., 63s., & upwards. COLLECTIONS OF DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s. Hyacinths, Tulips, Crocus, Daffodils, Iris, Paeonies, Lilies, &c. BARR & SON, 12, King Street, Covent Garden, London, W.C.

J. WEEKS & CO., Horticultural Builders To Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 10, Victoria Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

COLLECTOR MASSACHUSETTS

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	Nov. 21	Dutch Bulbs, at Stevens' Rooms. Plants and Bulbs at Protheroe & Morris' Rooms.
TUESDAY,	Nov. 22	Dutch Bulbs at Stevens' Rooms. Bulbs at Protheroe & Morris' Rooms, at 12. Great Clearance Sale of about 10,000 Orchids from Mr. F. Sander.
WEDNESDAY,	Nov. 23	Dutch Bulbs, at Protheroe & Morris' Rooms. Liliums from Japan, at Stevens' Rooms.
THURSDAY,	Nov. 24	Dutch Bulbs at Protheroe & Morris' Rooms. Plants, &c., at Protheroe & Morris' Rooms. Valuable Imported and Established Orchids; also Border Plants and Roses, at Stevens' Rooms.
FRIDAY,	Nov. 25	Dutch Bulbs at Protheroe & Morris' Rooms. Orchids at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 26	Dutch Bulbs at Protheroe & Morris' Rooms. Plants from Holland, and 40,000 Berlin Lily of the Valley Crowns, at Stevens' Rooms.

SALES BY AUCTION.

Every Day.

DUTCH BULBS. GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY, at 12 o'clock, large consignments of first-class

HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland. Lotted to suit the Trade and Private Buyers. 12 tons are sold every week.

On view morning of Sale, and Catalogues had.

N.B.—There will be no Sale on Tuesday next, in consequence of the large Orchid Sale.

TUESDAY NEXT.

GREAT SALE OF ORCHIDS.

ABSOLUTELY WITHOUT RESERVE.

By order of Messrs. F. SANDER & Co., in consequence of the Great Northern Railway Company requiring a portion of the Nursery and Orchid-houses for the erection of a Railway Station on the Establishment.

IMPORTANT to GENTLEMEN, NURSERYMEN, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 22, at half-past 12 o'clock,

10,000 ORCHIDS,

Undoubtedly the largest quantity ever previously offered in one day, affording an unusual opportunity to Gentlemen desirous of forming collections, and specially adapted to the Trade for Cut Flower purposes. The Sale will include—

1500 ODONTOGLOSSUM ALEXANDRÆ,
ALL UNFLOWERED.

260 CATTLEYA SPECIES, 200 C. SCHRODERÆ, 50 C. SANDERIANA, 100 C. CITRINA, 150 C. GASKELLIANA, 100 C. IMPERIALIS, and others.

500 CATTLEYA LABIATA,

ALL UNFLOWERED.

200 ODONTOGLOSSUM PESCATOREI, HARRYANUM, VEXILLARIUM, ROSSII MAJUS, PULCHELLUM, ODORATUM, HASTILABUM, and GRANDE.

500 CATTLEYA ALEXANDRÆ,

DENDROBIUM NOBILE, ALBO SANGUINEUM, BIGIBUM, DALHOUSIEANUM, SUAVISSIMUM, CHRYSOTOXUM, and others. LÆLIA MAJALIS, PHALÆNOPSIS LOWII, CATASETUM, CYPRIPEDIUMS, ONCIDIUMS, EPIDENDRUMS.

175 CYPRIPEDIUM CHAMBERLAINIANUM,

And many other ORCHIDS.

On view morning of Sale, and Catalogues had.

Hounslow, re J. & G. Bannister.

ABSOLUTE SALE OF THE LEASE AND STOCK, by order of the Official Receiver.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION on the Premises, The Nurseries, Staines Road Station (ten minutes' walk from Hounslow and Heston stations), on WEDNESDAY, November 30, at 12 o'clock, without reserve, 5800 PELARGONIUMS, 4000 FUCHSIAS, 2100 CHRYSANTHEMUMS, 2000 PTERIS CRISTATA, quantities of BEGONIAS, HELIOTROPES, PETUNIAS, GERANIUMS, and OTHER PLANTS. Useful Bay Mare, Spring Market Van, Tumbler Cart, and Set of Harness. Also, in one lot, the Lease for 95 years of the Nursery, comprising about 2 acres of ground, newly-erected Greenhouse, 550 feet in length, with about 1480 feet of 4-inch piping.

May now be viewed. Catalogues had on the Premises, of C. Mercer, Esq., Official Receiver, 95, Temple Chambers, Temple Avenue, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

JAPANESE LILIES.

GREAT CONSIGNMENT OF

200 CASES

OF

LILIUM AURATUM,

AND OTHER SORTS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have just received another consignment, which will be SOLD, at their Rooms, on WEDNESDAY, November 30, as they cannot get the cases from the ship in time for Sale next week.

Particulars will appear in next week's *Gardeners' Chronicle*.

Monday Next.

100 PALMS and RHODODENDRONS, 2000 TUBEROUS BEGONIAS, GRANDIFLORA ERECTA, from Belgium; choice STOVE and GREENHOUSE FERNS, in convenient lots; ORNAMENTAL PLANTS, a fine assortment of DAFFODILS, PEONIES, choice NARCISSUS, English-grown LILIES, and HARDY BULBS.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above at their Rooms, on MONDAY NEXT, November 21, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Thursday Next.

AZALEAS, STANDARD ROSES, PLANTS, and BULBS. **MESSRS. PROTHEROE AND MORRIS** will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, November 24, at 12 o'clock, 100 AZALEA INDICA, 100 A. MOLLIS, 74 PALMS and DRACÆNAS from Belgium, PINK MALMAISON, CARNATIONS, BARR'S DAFFODILS, choice GREENHOUSE and STOVE FERNS, a splendid collection of English-grown LILIES and HARDY BULBS in great variety.

On view morning of Sale, and Catalogues had.

Friday Next.

ODONTOGLOSSUM NÆVIUM MAJUS, TRUE. **MESSRS. PROTHEROE AND MORRIS** will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 25, at half-past 12 o'clock, by order of Mr. F. Sander, St. Albans, a splendid lot of the above superb ORCHID. Few or none can surpass this species for beauty and absolute elegance; and the lot we offer are perfect in health and vigour.

CATTLEYA SPECIES.

A grand thing, and fully described in Catalogue; together with several others not previously offered.

A WHITE CATTLEYA AGLANDIÆ.

A WHITE CATTLEYA AMETHYSTINA. Also a splendid lot of ODONTOGLOSSUM BLANDUM; the rare and very valuable ONCIDIUM UNDULATUM, importations of CELEGYNE PANDURATA and ASPERATA, SCHOMBURGKIA species; and EPIDENDRUM, producing spikes 5 feet long, covered with hundreds of flowers; and many other fine ORCHIDS.

On view morning of Sale, and Catalogues had.

The Celebrated Masdevallia Collection of

MASDEVALLIAS.

and a few other choice ESTABLISHED ORCHIDS. IMPORTANT UNRESERVED SALE by order of the executors of the late Sir William Salt, Bart.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, November 29, 1892, at half-past 12 o'clock precisely, the ENTIRE COLLECTION of MASDEVALLIAS, probably the most complete that has ever been submitted to the hammer, and comprising many rarities. The plants are in perfect health, and consist for the most part of fine examples.

Also an assortment of choice CATTLEYSAS, LÆLIAS, ODONTOGLOSSUMS, ONCIDIUMS, and other Orchids.

On view morning of Sale, and Catalogues had.

Cliffe, near Rochester.

SECOND PORTION OF Mr. Horne's Immense STOCK, IMPORTANT to FRUIT GROWERS, MARKET GARDENERS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions to hold a Great FRUIT TREE SALE, on the Premises, Perry Hill, Cliffe, near Rochester, on WEDNESDAY, November 30, comprising:—2,500 of the New Dessert APPLE Beauty of Bath.

500 one and two-year Bismark's (New) APPLE.

20,000 Standard, Half-standard, and Maiden APPLES.

25,000 Bob and Lad GOOSEBERRIES.

25,000 Baldwin BLACK CURRANTS.

2,400 John Ruskin STRAWBERRIES, for forcing.

75,000 Paxton, Noble, and John Ruskin STRAWBERRIES, from open ground.

30,000 Sir John Falstaff, Carters' Prolific, and Semper Fidelis RASPBERRIES.

25,000 three-year Connover's Colossal ASPARAGUS, &c.

May be viewed. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Preliminary Notice.

EXPIRATION OF LEASE.

THIRD CLEARANCE SALE OF CHOICE ORCHIDS.

(Unreserved Sale.)

By order of Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, Yorkshire, and Clapham, S.W., comprising—

CATTLEYA LABIATA, in Sheath

LÆLIA PURPURATA "

GRANDIS TENEBROSA, the true variety

ODONTOGLOSSUM ALEXANDRÆ, Pachy type

" PESCATOREI

" VARIETIES

ONCIDIUMS, MASDEVALLIAS, and CYPRIPEDIUMS, in variety, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, December 2.

Choice Bulbs from Holland.

MR. J. C. STEVENS will **SELL** by AUCTION, every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice BULBS arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Wednesday Next.

A Consignment of well-grown ROSES, ORNAMENTAL SHRUBS and PLANTS, in splendid condition, from Holland; 2000 LILIUM AURATUM, LILIUM SPECIOSUM ALBUM and RUBRUM, just received from Japan; 40,000 Berlin LILY OF THE VALLEY Crowns, and 1000 Clumps; 5000 SPIRÆA, 200 choice English DWARF ROSES, Collection of BORDER PLANTS, DIELYTRA, IRIS, CHRISTMAS ROSES, beautiful DAFFODILS and NARCISSUS, &c., &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 23.

On view morning of Sale, and Catalogues had.

Thursday Next.

VALUABLE IMPORTED ORCHIDS, &c.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 24, a Consignment of several hundred plants of CATTLEYA LABIATA, fine masses; 200 CATTLEYA or LÆLIA SPECIES, and various other ORCHIDS from Brazil; a large quantity of ORCHIDS from Singapore, all without Reserve; 100 CYPRIPEDIUM ACALE, ESTABLISHED ORCHIDS, &c.; LILIUMS from Japan, LILY OF THE VALLEY Crowns and Clumps; 1500 Tubers of ANECTOGHILUS DAWSONIANUS, LILIUM HARRISII and CANDIDUM, in quantity, &c.

On view morning of Sale, and Catalogues had.

Station Nurseries, Horsham, Sussex.

Within a minute of the Railway Station.

WITHOUT RESERVE.

MESSRS. KING AND CHASEMORE

have received instructions from Mr. J. G. JENNER to **SELL** by AUCTION, upon the Premises, as above, on TUESDAY, November 22, the exceedingly valuable and well-grown NURSERY STOCK,

standing upon the Central Nursery, including about 2000 Standard, Pyramid, and Trained FRUIT TREES, amongst which will be found a fine collection of Plums,

Pears, Apples, Cherries, Currants, and Gooseberries.

FILBERT TREES, HARDY EVERGREENS, &c.

2300 choice R-SE TREES,

including Standard and Dwarf Hybrid Perpetual, Moss, and Tea Roses. The well-grown

FLOWERING and ORNAMENTAL SHRUBS

include Variegated Maple, Persian and Common Lilac, Scarlet Dogwood, Syringas, Ribes, Variegated Wiegelia, Deutzias, Variegated and Golden Elder, Guelder Roses, Spiræa Bella, and Broom.

Five selection of CONIFERÆ, comprising Cupressus Lawsoniana, Cupressus erecta viridis, Thuia Lobbi, Spruce, American Arbor-vitæ, &c.; and a large quantity of strong QUICKS.

Can be viewed a week prior to the Sale. Sale to commence at half-past 10 o'clock precisely. Catalogues may be obtained of Messrs. KING AND CHASEMORE, Auctioneers, Horsham, Sussex.

WANTED TO RENT, about an ACRE of

GROUND, with a few GREENHOUSES, well heated; and small Dwelling-house, from 8 to 12 miles from Covent Garden.—S. T. C., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, to RENT, after Christmas, a

NURSERY, 600 to 800 feet run of Glass, in good condition, with 1 Acre of Ground for Growing Cucumbers and Tomatoes, Near station. No stock.—Apply, B. F., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, TO RENT, on Lease, a small

NURSERY or GARDEN, suitable for Market Work; North or Midlands preferred.—ALPHA, Mr. T. Allerton, Windsor Street, Great Lister Street, Birmingham.

To Nurserymen and Florists.

FOR IMMEDIATE DISPOSAL, a well situated and valuable FREEHOLD NURSERY, in Hants, containing 3½ Acres of well-stocked Nursery Land, with Greenhouses, &c. Same hands fifty years. Owner retiring.

Address, M. G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, a NURSERY, SEEDSMEN,

and FLORISTS' BUSINESS, established 25 years; never changed hands. Stock and Greenhouses at valuation. Lease 12 years to run. Rent low.

J. BICK, The Nurseries, Acocks Green, Birmingham.

FOR SALE.—A small genuine NURSERY,

FLORIST and JORING BUSINESS, doing an increasing Trade.—Full particulars of S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Market Growers, Gentlemen's Gardeners, and

OTHERS.

TO BE SOLD, a Bargain, the LEASE, 21

years, of a Capital MARKET NURSERY, and 16,000 feet of good Glass, well heated; 7-roomed Dwelling-house; good Stabling, and every convenience; 8 miles from Covent Garden, only wants seeing. Apply to—

J. W. S., 2, Elm Villa, Town Road, Lower Edmonton.

Warwickshire.—Erdington Hall Estate.

TO BE LET, an excellent FARM, situate within 3 miles of Stephenson Place, Birmingham. There is a large House and extensive Buildings, and the Land is well adapted for Market Gardening, being close to the City. It consists of Arable and Pasture Land, and is about 173 Acres.

For Rent and Particulars, apply to Messrs. J. C. FOWKE AND SON, Solicitors, 120, Colmore Row, Birmingham.

To Market Gardeners.

TO BE LET, with Possession in December, the GARDENS adjoining a Mansion, and within easy access of large populations and railways. The soil is of a fertile and productive character, and there is an unusually large area of Glass, including Peach-houses 295 feet long. Orchard-houses, Greenhouses, Vineries, &c., detailed particulars of which may be had from JOHN GERMAN AND SON, Land Agents, Ashby-de-la-Zouch.

To Market Gardener, Fruit, Tomato, and Flower GROWERS.

MR. MALCOLM SEARLE is instructed by Mr. R. Clarke, of Pope's Grove, Twickenham, S.W., after an occupation of forty years, **TO LET or SELL** the farmed 5½ acres of LAND, well stocked with Choice Standard and Wall Fruit Trees and Bushes, with Residence, Cottages, Outbuildings, Forcing Houses, and Pits.

A valuable Plot of BUILDING LAND, adjoining, is also for SALE. Worth attention. Apply, personally, at 9, Martin's Lane, Cannon Street, City, E.C.

To Nurserymen, Florists, and Others.

By Order of the Mortgagee.

TOTTENHAM.—Long Leasehold DWELLING-HOUSE, known as No. 1, Percy Villas, Northumberland Grove, close to two stations on the G. E. R., containing 7 Rooms and Domestic Offices. Also the NURSERY IN REAR, well-stocked with matured Fruit Trees, with TEN Well-heated GREENHOUSES, containing in the aggregate 500 feet run, with Vines, &c., in full bearing; Coach-house, Stable, and Shed. The whole embracing an area of about 1 Acre; Lease 14½ years unexpired; Rent £35 per annum; Possession on completion.

Particulars of Messrs. PYKE AND VOULES, Solicitors, 85, Gracechurch Street, E.C.; and of the Auctioneer, 816, High Road, Tottenham, and 18, Finsbury Circus, London, E.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

ORCHIDS.—We have PURCHASED the fine COLLECTION formed by H. COLEMAN, Esq., The Cedars, Banbury. Inspection invited. Please write for LIST.

W. L. LEWIS AND CO., Chase Side, Southgate, London, N.

ROSES IN POTS.—Special offer. Several thousand Niphetos and other Roses, established in 12's and 16's, at £5 and £5 per 100.

GUIVER, BROTHERS AND LAWSON, Durant's Nurseries, Ponder's End, Middlesex.

CARNATION Mrs. Reynolds Hole, the popular terra cotta, strong rooted layers, 20s. per 100; £9 per 1000. Cash.

CRANE AND CLARKE, Hillside Nursery, March, Cambs.

To the Trade.

SEAKALE, extra strong for Forcing.—Prices and Samples on application.

H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton.

BOUVARDIAS, for Winter Blooming.—Fine Plants, in 48's, of all the best sorts, including white, rose, scarlet, and pink, with plenty of shoots, and full of flower-buds. Price on application to JOHN FRASER, The Nurseries, Lea Bridge Road, Leyton, Essex.

IF YOU WANT FRUIT TREES that will bear regularly, purchase Apple's worked upon our Paradise Stock. We have 60 000 to select from, and shall be pleased to show them to visitors.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts. Established 1782.

FERNS! FERNS!!—Trade.—Greenhouse and Stove, 25 salable sorts, in 2½-in. pots, 12s. per 100; 10 best market sorts, in 48's, 6s. per doz.; good stores, 6s. per 100. Large Adiantum cucutatum, value in fronds, 6s. per dozen. Cyperus, Aralias, Solanums and Primulas, in 48's, good value, 6s. per doz. Palms, Ficus, Erica hyemalis and Dracaenas, in 48's, 1s. each. Selected P. tremula and A. cucutatum, for making large plants quickly, 16s. and 20s. per 100, well packed, put on rail free for cash with order.—J. SMITH, London Fern Nurseries, Loughboro' Junction, London, S.W.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD AND NURSERIES, CARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS, FERNS, &c., &c.

CATALOGUES, with full particulars, post free on application.

Special Quotations to the Trade.

FOR ORCHIDS and GARDENERS to Grow Them, apply to SANDEE'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

DESCRIPTIVE CATALOGUE.—ROSES, FRUIT TREES, RHODODENDRONS, CONIFERS, DECIDUOUS and EVERGREEN TREES and SHRUBS, FOREST TREES, CLIMBERS, &c., free on application. H. LANE AND SON, Nurseries, Berkhamsted, Herts.

ROSES.—Standard, Dwarf, and Climbing for Conservatories, of the finest quality. FRUIT TREES of best varieties. CLEMATIS of leading kinds. EVERGREENS for planting.

CUPRESSUS, grown in wire baskets, to ensure safe removal.

LAURELS, 5 to 7 feet high, and heavy. Specimen SPANISH CHESTNUTS and WALNUTS, and Dwarf-trained Victoria PLUMS, 8 feet by 10 feet.

Mountain ASH, Forcing RHUBARB, GOOSEBERRY and CURRANT TREES at lowest prices. JOHN FEED AND SONS, Streatham, S.W.

VICTOR POTATOS (SHARPE'S).

This favourite first early Potato, suitable for any Garden, indispensable for Forcing and Early Borders, and likely to take the first rank amongst first earlies for market use. Quality and yield all that could be desired. One well-known market grower has this year had a yield of 15 tons per acre on a large acreage. London and Manchester salesmen speak highly of their quality, and report that Victors will keep their bloom and have a fresh appearance after being in the market some days, when other early Potatos have become discoloured and unsaleable.

The stock we offer is the true yellow-fleshed variety and not the white variety, which is often substituted.

Price per cwt. and ton. State requirements to

W. W. JOHNSON & SON, Seed Growers and Merchants, Boston, Lincolnshire.

FERNS A SPECIALITY.

ILLUSTRATED CATALOGUE of FERNS (No. 22), 2s. post-free.

It contains 150 Illustrations, and an immense amount of interesting and instructive matter of great value to all Fern Cultivators.

SPECIAL AUTUMN LIST NOW READY, FREE ON APPLICATION.

W. & J. BIRKENHEAD, F.R.H.S., FERN NURSERIES, SALE, near MANCHESTER.



We have just received the following, which we think will convince all how well all our Plants succeed from one end of the earth to the other:—

"THE HAMILTON TRIBUNE" (Australia).

October 8, 1892.

"Mr. H. S. James, the Curator of the Hamilton Public Gardens, says he has received a valuable consignment of Chrysanthemums from Messrs. H. Cannell & Sons, at Swanley, in Kent. There are seventy-five plants, and only two of them were damaged, the rest being in splendid condition, and amongst them are several very expensive specimens, one plant rejoicing in the name of Dick Parker."

Messrs. D. HAY AND SON,

Montpelier Nursery,

Auckland, New Zealand.

October 8, 1892.

"Dear Sirs.—We have very much pleasure in stating that we received the plants, and we do not think we shall lose one, they appear so fresh. We are much pleased, and enclose you another order, which we will thank you to send on as before."

The "MOUNT GAMBIER STAR" (South Australia).

October 5, 1892.

"The champion bloom in the show was Cannell's 'Swanley Yellow,' a grand flower, large, symmetrical, and measuring seven inches and a quarter across. There were numerous other blooms almost equally as large, and one or two larger, but none combining all the good qualities of that from Swanley."

Mrs. BOREHAM,

San Antonio, Puerto Orotava,

Teneriffe, Canary Islands,

November 4, 1892.

"I have much pleasure in informing you that the plants have arrived in most excellent condition, far better than I have ever had any before. If they do not thrive the fault will be mine."

W. H. S. BELL, Esq., Attorney,

Johannesburg, South African Republic,

October 14, 1892.

"The Chrysanthemums reached me in excellent condition."

H. CANNELL & SONS, SWANLEY, KENT.

EXHIBITIONS.

HEREFORDSHIRE FRUIT AND CHRYS-ANTHEMUM SHOW.

The FIRST ANNUAL SHOW will be held in the SHIRE HALL, HEREFORD, on WEDNESDAY and THURSDAY, November 23 and 24, 1892, when the following Prizes, amongst others, will be offered in the Open Classes:—

COLLECTION OF APPLES, Culinary and Dessert, 100 dishes, First Prize, 100s., or Cup; Second, 40s.; Third, 20s.

COLLECTION OF PEARS, 24 dishes, First Prize, 50s.; Second, 20s.; Third, 10s.

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Schedule of Prizes, and particulars, on application to—7, Clifford Street, Hereford. Mr. JOHN OUGH, Hon. Sec.

Special Notice.

BIRMINGHAM GREAT CHRYSANTHEMUM SHOW, 1893, will be held for TWO DAYS ONLY, viz., WEDNESDAY and THURSDAY, November 15 and 16. J. HUGHES, Secretary.

VICTORIA PLUMS.—Rough Fruiting Trees, 35s. and 55s. per 100. Stout Standards, in quantity. Stout Morello CHERRIES, WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

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10,000 PANCRATIUMS.—Fine, large-flowering bulbs. P. Guianense, P. Amœnum, P. illyricum, P. Maritimum, 6s. per doz., 40s. per 100. Sure to please.—J. JAMES, Wholesale Florist, New Malden, Surrey.

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100 Privet, 3 to 4 ft.	24 Laburnum.
200 Common Laurel, 2 to 4 ft.	50 Thorn, various.
100 Aucuba japonica, 2 to 4 ft.	20 Weeping Kilm.
100 Hollies, 3 to 4 ft., various	50 Planes, 7 to 8 ft.
sorts.	100 Italian Poplars.
50 Thunb., about 2 ft., in	50 Acacia, various.
three varieties.	100 Roses, to be selected.
50 Laurustinus, 2 to 4 ft.	25 Ribes.
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12 Mountain Ash, d.	2000 Crocus, in sorts.
12 Weeping Ash, do.	500 Tulips, do.
12 Horse Chestnuts, white,	500 Narcissus, do.
do.	500 Snowdrops.
12 " " red, do.	250 Hyacinths, in sorts.

The whole of the above to be delivered at the Battersea New Cemetery, Morden, Surrey, at such time and in such quantities as the Board shall direct. Tenders to be in not later than 5 P.M. on MONDAY, November 21, at the Office of the Board, St. Mary's Cemetery, Battersea Rise, marked "Tender for Shrubs." The Board do not bind themselves to accept the lowest or any Tender. THOS. H. BISHOP,
November 16 1892. Clerk and Superintendent.

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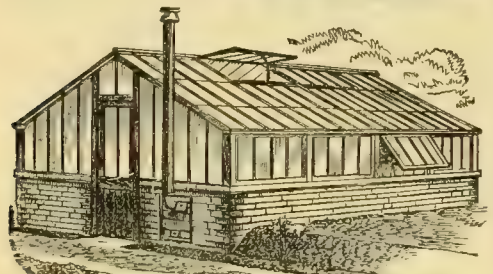
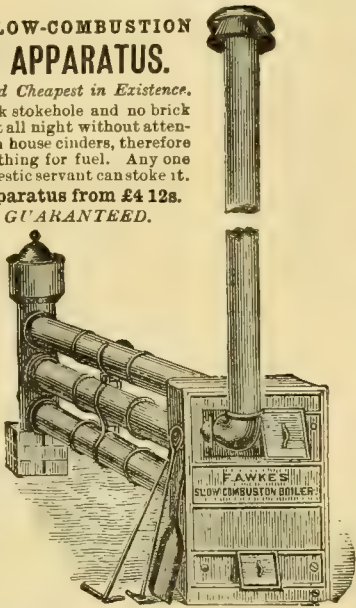
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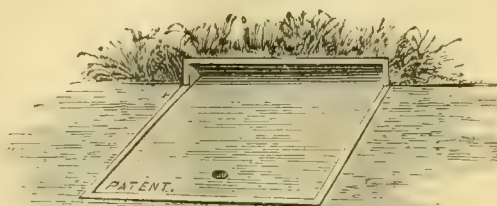
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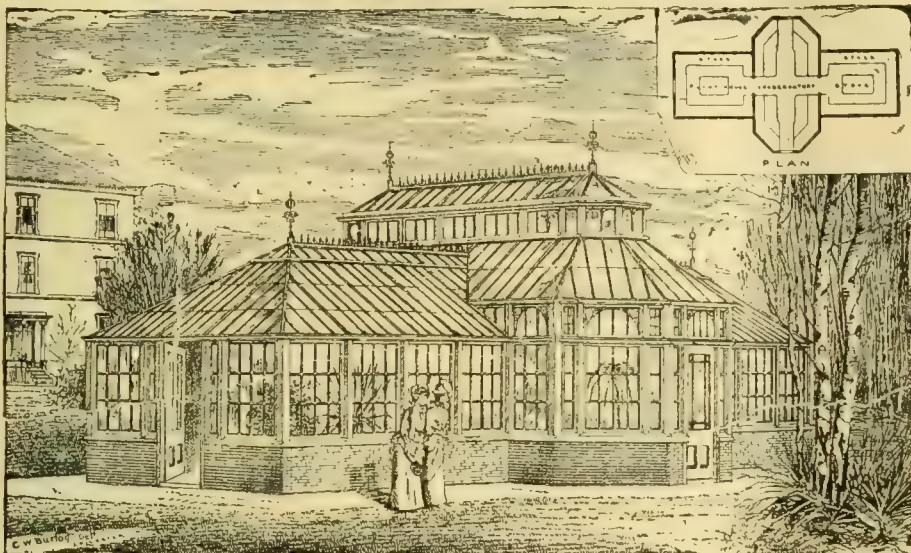
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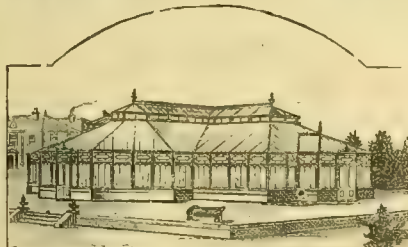
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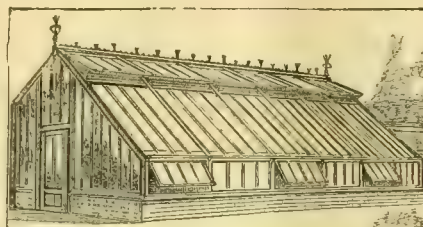
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 " SCHWEDLERI, 12 to 18 feet, girth 4 to 8 inches.
 " WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
 ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
 BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
 BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
 CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.
 CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
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 " Scarlet, 12 to 18 feet, girth 4 to 10 inches.
 " Spanish, 12 to 14 feet, girth 4 to 5 inches.
 ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
 " Guernsey, 16 to 18 feet, girth 7 to 9 inches.
 LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
 " EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.
 " Silver-leaved (*Tilia argentea*), 12 to 14 feet, girth 5 to 6 inches.
 LIQUIDAMBAR, 6 to 10 feet.
 MAPLE, Norway, 12 to 16 feet.
 OAK, English, 12 to 14 feet, girth 4 to 5 inches.
 " Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
 PLANES (English-grown), 12 to 16 feet, girth 4 to 6 inches.
 POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
 SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
 " Purple, 14 to 16 feet, girth 6 to 7 inches.
 THORNS, Double Pink, 8 to 10 feet.
 " Scarlet, 8 to 10 feet.
 " White, 8 to 10 feet.
 TULIP TREES, 8 to 10 feet.
 WALNUT, Common, 10 to 12 feet.

WEeping TREES.

- BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
 " Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
 BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
 " Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
 ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
 LARCH, Weeping, Pyramids, 8 to 10 feet.
 POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 19, 1892.

THE GARDENS AT SEVILLE.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE lover of all that is beautiful and natural in gardening will find Seville alone worth journeying from England to see. True as it unquestionably is that the climate of Andalusia possesses every quality favourable to the luxuriance of tropical vegetation, it is a much more potent factor in Spanish floriculture that with the Spaniards the love of flowers is a passion, compared to which their religion is only a minor matter. The Spanish woman, young or old, rich or poor, does not consider herself properly dressed without having in her hair a bright flower or two, which, with her inevitable mantilla and fan, seems to endow the plainest of them with the quality termed by Spaniards *la sal*, an untranslatable expression, by which is meant a mixture of *nonchalance*, vivacity, and an infantine grace, utterly foreign to our northern characteristics. A Camellia, a *ramillète*, or small bouquet of Roses, or a small bunch of *claveles*, are, one or the other, nearly at all times available for one real (= 2½d.) or less.

It is, however, the gardens of the famous Alcazar at Seville, rather than the extravagant, if excusable, passion for cut flowers, that form the subject of the present article. It may be mentioned here, however, that public gardens in Southern Spain are very few, and, as a rule, very poor, and in every instance possessed of what may be termed the demon of utilitarianism, which sells every flower that can be converted into hard cash. The gardens attached to private houses differ in nearly every respect from those in this country. They are, like nearly everything else in Seville and other large towns in the province, essentially oriental, redolent of the *Arabian Nights* stories, and just as impossible to realise in the minds of those who have never seen them as the stories in that famous collection of marvellous deeds. It is neither in the front nor at the back of the houses that the gardens are found, but in the *patio* or courtyard, with its marble pavement, the inevitable colonnade and fountain encircled with Bananas, Lemon trees, and other foliage effects, occasionally relieved with a few bright flowering plants. It is not so much a matter of quantity or rarity as it is of general harmony; for the charming *tout ensemble* is due rather to extraneous circumstances than to anything else.

The populous parts of Seville, or, to give it its much more euphonious Spanish name, Sevilla, are Moorish, and the houses on either side of the streets were erected long before cabs, omnibuses, and other vehicles were introduced. The result is that, as in our own Grub Street, where—

"(But that bards are never friends),
 Bards might shake hands from adverse windows."

But inconveniently narrow as are these streets or *calles*, they are nearly always gay to profuseness with flowers. From the top down to the first floor, the little verandas are gay with small Bananas, Pelargoniums, and other plants; whilst at times some luxuriant climbing plant throws quite an arcadian glamour over the most poverty-stricken and dingy outlook. The plants one sees most frequently in the windows and balconies are various kinds of Amaryllis, but more especially regina, belladonna, and formosissima, whilst the Tuberose is a very deservedly universal favourite; Pelargoniums or Geraniums and the Jasmine are met with on every hand, whilst the sweet-scented Verbena, Aloysia citriodora—which, by the way, was named in honour of Maria Louisa, mother of Ferdinand VII., King of Spain—is seen in every nook and cranny. Narcissus, Tulips, and other bulbous plants are common enough in season. Occasionally one gets a glimpse of Poinciana pulcherrima and Abrus precatorius, and of one or other of the Plumierias; but the list of exotic plants grown in and around Seville would, if compiled, be striking in its extreme brevity. The Sevillanos, as a whole have, however, gone on very contentedly for centuries with their extremely narrow selection by way of exotic plants, and the most casual visitor cannot but agree that they produce charming effects with a very few things.

In the suburbs of this and other large towns and cities in Andalusia, we meet with examples where the foreign element has been introduced, and the introduction is in keeping with the hideous architectural incongruities of which the tourist in Spain has so many illustrations—the grafting of the ornate devotional Spanish upon the severely plain massive and harmonious phase of art peculiar to the Moors at their best periods. Here, at Seville, for example, we have an emphatic illustration of this kind of incongruity in the Duc de Montpensier's garden; its formal Italian style, introduced with the cinque-cento fashion, which was so much favoured from the time of Carlos Quinto down to the middle of the last century, when it was rendered still more hideous by the mania of Philip V. for everything *à la Louis Quatorze*. Now, as a matter of fact, these fashions or modifications of fashions are no more suitable to Andalusia than the Chinese method of gardening is to Great Britain; and wherever they occur they only strike one as hideous anomalies. They may be suitable—and scarcely anybody with an eye to artistic effect will admit even this supposition—to a northern climate where art has to a certain extent to supply some of the deficiencies of Nature, but in a place like Seville anything approaching formality in gardening is out of place. For here the hedges are formed of Myrtle, and the walls of suburban gardens are literally covered with Orange, Lemon, Citron, and Lime trees, all growing together with a prodigality and with an effect truly delightful to the English visitor.

But from a horticultural, as well as from an historical, point of view, the chief interest and glory of Seville centres in the Alcazar. And here, after passing through the narrow, paved streets of the city, and the splendour of the Moorish palace, one can easily imagine oneself in fairyland. Readers of that mad book, *La Vida y Hechos del Picaro Guzman*, originally published in 1599, fully a century and a quarter before *Gil Blas*, will recall the description of these gardens in the ninth chapter of the first book. "You have," writes the author, "probably been in the gardens of the Palace of

Seville, and you know what is called the upper and the lower part of the garden; there are two gardens, one upon the other; the upper one, supported upon arcades, is on a level with the first storey, and can only pass for a small parterre; the under one, which is larger, was then only open to the noblemen of the Court, who were free to enter it at certain hours. The upper garden was for the ladies only, who there took their walks to show themselves to the knights, with whom they conversed over the balustrade, which rises to a leaning-height all round the garden." The Sevillanos boast that—

"Quien no ha visto Sevilla
No ha visto maravilla;"

and there can be no question about the fact that those who have been to Seville and have not seen the gardens of the Alcazar, have missed one of the most charming spots in the peninsula. The Alhambra at Granada, is matchless in its grandeur, in its poetic associations, and it has



FIG. 91.—SEEDS OF CARICA, GERMINATING WITHIN THE FRUIT. (SEE P. 618.)

been, rightly as we think, termed "the loveliest spot on earth." But the Alcazar of Seville and its gardens have a scarcely less fascinating halo, for they represent the brightest and the most elegant of the Moorish period. To those who have visited the place, and can comprehend the passionately-devoted phase of the Moorish character, will readily believe that it was the city most beloved of the Moslem, "who planted it on the banks of the Guadalquivir to dream life away amid the enchantments of refined taste, and on which he lavished his gold and genius to adorn and his blood to defend and fortify."

Begun in 1181 by the Toledan architect, Jalubi, the Alcazar has gone through the inevitable course of changes which have not been uniformly for its benefit. So far as the gardens are concerned, the hand of Don Pedro the Cruel (1369–1379) made them practically as they stand to-day. The first impressions of the gardens, as the visitor leaves the palace (which during the past few years has been renovated at a great expenditure of money

and a severe economy of taste), is one of disappointment at the cinque-cento taste, with its ponds and closely-clipped hedges of Box and Myrtle. But Nature, being allowed to have pretty much of her own way, has overcome the formalities of art in a most effective manner. The Rose trees (mostly white), the Palm, the Palmetto, Scarlet Pelargonium, Pomegranate, Oleander, Magnolia, Cypress, and Coral trees flourish here in great profusion. The *baños* or baths, are partly hidden by Orange and Citron trees; and from one of the former which looks certainly the oldest tree in the place, said to have been planted by Pedro the Cruel, the guide, with an eye of course to an increase in the "tip," presents (as in the case of the present writer), the autumnal tourist with one of the fruits. In every shady corner and wall of the garden, the *Culantrillo de pózo*, or Maidenhair Fern, grows with the greatest vigour. The gardens here are full of interest, the most interesting indeed in Andalusia, and the present indolence and apathy of the Spaniards in the matter of restoration and improvement, is, so far as regard the gardens of the Alcazar, a matter of great thankfulness to those who have witnessed elsewhere the extremely vulgar taste in which "restorations" have been carried out. They are much more beautiful and interesting than those of the Alhambra, and it is not at all difficult to believe the old chronicles in which they are recorded to have been the scene of many a wild and daring outrage, intrigue, ambition, love, hate, and revenge. But the most curious "show thing" in the gardens consists of an extremely ingenious but simple arrangement, by which hundreds of jets of water spring up from between the tiles of the pathway.

This half-eastern and half-medieval garden, so full as it is of inconsistencies and anomalies, presents very many points of interest to the horticulturist. Its possibilities may have been fully recognised by the Moors, but the pernicious taste of their successors have done much to spoil what is even now undoubtedly the most charming place of its kind in Southern Spain. *W. Roberts.*

SCILLA LINGULATA (THE TONGUE-LEAVED SQUILL).

THIS pretty and free-blooming autumn-flowering Squill came to me this summer from Messrs. Dammann, of Naples, under the name of *S. bipartita*, a name quite new, and unknown to me, but which, on being referred to the learned head of the Royal Herbarium at Kew, was at once pronounced to be only a synonym for the plant figured by P. J. Redouté, under the name of *S. lingulata*, on plate 321 of the sixth volume of his splendid work, *Les Liliacées*, an opinion in which I most unhesitatingly concur, after having carefully compared the flowers and foliage of my plants with the plate referred to. Messrs. Dammann, however, demur, asserting that *S. bipartita*, which is a native of Morocco, though nearly allied to, is still botanically different from *S. lingulata*, which flowers with them about a month earlier in the autumn, has smaller clusters and flowers, and is a native of Oran. In answer to which I can only say, that whatever a botanist may think of them from a horticultural point of view, they are one and the same plant. Whatever may be its correct name, the plant now in bloom in my greenhouse makes a very ornamental potful, and blooming at this rather dull and flowerless time of year, is all the more valuable. The colour of the flower is somewhat a lighter shade of blue than *S. bifolia*, and the clusters of flowers are considerably larger. My five bulbs produced eight spikes of flower. *W. E. Gumbleton.*

ROUND BIRMINGHAM.

(Continued from p. 556.)

THE FIRS, WARWICK.—A short run from Birmingham brings us to the ancient county town of Warwickshire, situated on the sleepy willowy Avon, beside which the towers of the massive Warwick Castle rear themselves from their foundation of solid rock. Near by are the gardens of Major Mason, a gardener at heart, and one who in times gone by was on the Council of the Royal Horticultural Society. With an old-fashioned garden of moderate pretensions, and a number of Orchid houses filled with good and interesting plants, the Major and his wife, who takes an equal interest in the gardens, are never at a loss for pleasant recreation. In this collection there seem to be no hard and fast lines as to what shall be grown and what excluded, for samples of most things which are to be had are acquired without question if there is a reasonable probability of their producing pretty flowers. As in other gardens, however, some things are special favourites, and the quantities which are grown far exceed those on trial or those not so well liked. For example, in one of the houses are hundreds of fine sturdy plants of *Lycaste Skinneri*, chiefly bought as fresh imported plants. Out of them some magnificent forms have bloomed, and all are in grand health, which is worthy of remark; for notwithstanding increased facilities for getting and growing *Lycaste Skinneri* in recent times, many utterly fail with it, although some ten or fifteen years ago it was considered one of the plants which everyone could grow. Of the varieties of *Odontoglossum crispum*, *O. Pescatorei*, and other of the handsomer *Odontoglossums*, too, there is a large quantity at The Firs, and that in magnificent condition, the plants being so firmly rooted that any of them would bear lifting by the bulbs, which are hard, clean, and of that bright green which denotes the best of health. Mr. Beale, the gardener at The Firs, is justly proud of his Orchids, and especially of the *Odontoglossums*, *Cattleyas*, and *Lælias*, and other big batches of favourites.

In the large *Cattleya*-house, in two divisions, the specimens of *Cattleyas* and *Lælias* are in fine health, the show of flowers depending mainly on *C. Bowringiana*, and the many and beautiful forms of the new importations of *Cattleya labiata* "autumn-flowering," some of which are far superior to the plant of the original true old autumn-flowering *C. labiata*, which is in bloom in the same house, and which cost twenty guineas, while the fresh importations would not average more than that number of shillings. So much for trade enterprise, which by the outlay of the necessary funds, and the application of the required knowledge, has brought a charming winter flower, which so many of slender purse have longed for in vain, within the reach of all, and by the better forms introduced placed the small amateur of today on a better footing than the rich man of a few years ago in regard to this plant. In this house the *Vandas* are doing well, and one strong plant of *V. suavis* has a large seed capsule procured by crossing it with *V. teres*, which should in time afford good results. *V. cœrulea*, *Cattleya superba splendens*, *C. eldorado*, *C. maxima*, *C. Trianae*, *Lælia grandis tenebrosa*, *L. superbiens*, and the *Miltonias* are very fine. Among the last-named are in flower a fine lot of *Miltonia Clowesii grandiflora*, and one large plant of quite a new type—*M. C. gigantea*, with very large and richly-coloured flowers, the segments broad and blunt, and not acuminate as in the old forms.

Among a host of interesting things, we found many fine *Cypripediums*, some of them in bloom; a large quantity of the showy *Dendrobiums*, specially well cultivated; a full collection of *Angræcums*; a grand lot of *Odontoglossum citrosum*, and a sturdy plant of *O. coronarium Chiriquense*, which flowers well. Among other fine plants in bloom, we noticed *Maxillaria grandiflora*, *M. venusta*, all the forms of *Lælia pumila*, a beautiful specimen of *Nanodes Medusæ*, *Oncidium macranthum*, some species of *Masdevallias*, *Vanda Kimballiana*; the extremely rare and pretty *Saccolabium paniculatum*, with two five-branched spikes of its pretty white and pink flowers, and in

one of the lobbies a noble specimen of *Crium amabile*, which, with *C. Mooreanum*, is used for decoration indoors, and with regard to which and other *Crimums*, Mrs. Mason gives a useful hint as to a means of prolonging the duration of the flowers in a cut state. Formerly they were broken, or cut off, with the seed-vessel attached, but when so taken they were soon over when placed indoors. Now they are cut just above the ovaries, and their stem-like tubes placed in the water, and they last twice as long. This hint may doubtless be brought to bear on many flowers with tubular base to the perianth, and which are often used as single flowers.

(To be continued.)

THE NEW LILIES OF WEST CHINA AND TIBET.

UNTIL quite recently very little has been added to our knowledge of the Lilies since the publication of the important monograph of this genus by Mr. H.

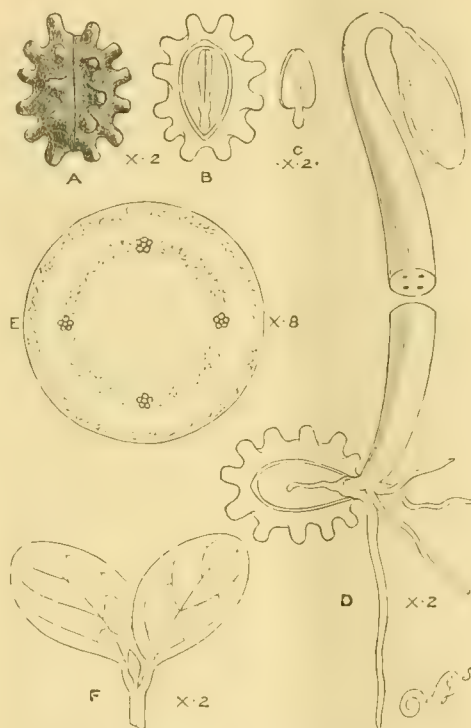


FIG. 92.—GERMINATION OF CARICA. (SEE P. 618.)

A, seed; B, section; C, embryo; D, seedling showing spindle-shaped caulicle; E, section of caulicle; F, cotyledons.

J. Elwes. At the International Botanical Congress held at St. Petersburg in 1884, Mr. Elwes predicted that in the future many new discoveries might be looked for from Tibet and from the mountains of Western China. These predictions have been fully justified, and now new species are pouring in upon us.

The exploration of Upper Burma brought to light four new species—*L. sulphureum*, *Lowii*, *primulinum*, and *Bakerianum*—the first three of which have been brought into cultivation by Messrs. Low & Son, and figured in the *Botanical Magazine*. The collections that have been made lately in Western China and Tibet have shown that these regions are exceedingly rich in new types, belonging to many of our favourite garden genera. The material collected by Dr. Henry and Mr. Pratt has been brought to England, and worked up at Kew by Professor Oliver and Mr. W. Botting Hemsley. The collections made by MM. Armand David, J. Delavay, and Farges, have been sent to Paris, and are now being worked up by M. Franchet. In a recent paper in the *Journal de Botanique*, he has reported on the

Lilies of these collections of the three French missionaries. His paper contains a classified list of all the species now known in China and Tibet. The following is a brief abstract of his enumeration, with a few words about each of the new species:—

1. *L. cordifolium*, Thunb.
2. *L. giganteum*, Wall.
3. *L. mirabile*, sp. nov., Franchet.—West China. Collected in the province of Sutchuen by Father Farges. A *Cardiocrinum*, with slender stems 4 feet long, cordate-ovate leaves, with seven to fifteen centrifugal flowers (contrary to those of all other Lilies, the top flowers open first), white, and narrowly tubular, 6 to 7 inches long.
4. *L. longiflorum*, Thunb.
5. *L. Brownii*, Spae.
6. *L. formosum*, Franchet, sp. nov.—West China, province of Sutchuen, in the mountains of Tchen-keou-tin. Discovered by Father Farges. Leaves lanceolate, shortly petioled. Flowers white, erect, broadly campanulate, 6 to 7 inches long, with oblong-lanceolate segments.
7. *L. myriophyllum*, sp. nov., Franchet.—Yunnan, on the Mo-so-yn. Discovered by Delavay. Leaves very numerous (about 200), linear, or linear-lanceolate, bearing bulbillæ in their axils. Flowers usually two, erect, white, large, forming an open cup.
8. *L. yunnanense*, sp. nov., Franchet.—Yunnan. Discovered by Father Delavay. Flowers like those of *japonicum*, white, or slightly tinged purple outside, 3 to 4 inches long. Leaves like those of *L. elegans*.
9. *L. Delavayi*, sp. nov., Franchet.—Yunnan. Discovered by Delavay. Leaves linear or lanceolate. Flowers 1 to 3, like those of *candidum* in form, 3 to 4 inches long, wine-red with brown dots inside.
10. *L. concolor*, Salib.
11. *L. speciosum*, Thunb.
12. *L. Duchartrei*, Franchet.—Found in West Tibet by Father David, in Yunnan by Delavay, and in Sutchuen by Prince Henri of Orleans. Allied to *L. polyphyllum*, Don. Flowers white, dotted with purple, like those of a *Martagon*, but segments not revolute.
13. *L. papilliferum*, sp. nov., Franchet.—Yunnan, the rocks of Caoui-ma-ouan, gathered by Delavay. Also nearly allied to *L. polyphyllum*.
14. *L. lankonjense*, sp. nov., Franchet.—Yunnan, gathered in many localities by Delavay. Near *polyphyllum* and the two last. Flowers 1 to 3, white or purplish, dotted inside with black; segments oblong. Leaves linear, lanceolate, produced down to the very base of the stem.
15. *L. Davidi*, Duchartre.—Discovered in Western Tibet in the high mountains, which separate Mou-pine from Sutchuen by Father David. Figured by Elwes.
16. *L. Fargesii*, sp. nov., Franchet.—Very near the last. Flowers 1 to 10, yellow, dotted with purple inside, 2 inches long. Leaves linear, with revolute edges.
17. *L. sutchuenense*, sp. nov., Franchet.—Yunnan, province of Sutchuen, near Ta-tien-lon, discovered by Prince Henri of Orleans, and in the mountains of the district of Tchen-keou-tin by Father Farges. Very near *L. tenuifolium*.
18. *L. tenuifolium*, Fisch.
19. *L. tigrinum*, Gawl.
20. *L. pseudo tigrinum*, Carrière.
21. *L. taliense*, sp. nov., Franchet.—Yunnan, discovered by Delavay. Stem, 3 feet long. Leaves linear or linear-lanceolate. Flowers 1 or 2, whitish, 2 to 3 inches long.
22. *L. ochraceum*, n. sp., Franchet.—Yunnan, discovered by Delavay. Stem, 2 to 3 feet long. Leaves linear-lanceolate. Flowers of the *Martagon* type, yellow, unspotted, with oblong segments.
23. *L. oxyptalum*, Baker. Gathered in Yunnan by Delavay.
24. *L. Thomsonianum*, Lindl. Gathered in Yunnan by Delavay, and in Sutchuen, at Ta-tien-lou, by Prince Henri of Orleans. J. G. Baker.

CULTIVATION OF THE FIG.

HAVING three divisions for fruiting the Fig, besides several large trees against the walls outside, we are enabled to keep up a pretty good supply for nearly nine months in the year. Our first crop begins to ripen in the month of March from bushes in pots, and with careful attention we generally secure two crops. While at Worksop Manor I had only one Fig-house, and with the exception of the back wall, the house being a lean-to, the Figs were planted out, their roots confined to a space 2 feet wide, and 20 inches deep. The front trees were grown in large pots, but plunged in the border below the rim of the pots, and heavily mulched, and well-fed with liquid-manure during the fruiting season, which was generally a long one from the high cultivation pursued. We used to cool the house down when we could see a good batch of young fruits at the ends of the shoots of the size of Peas, and by catching them just about that size we did not run the risk of losing the first crop the following season. But where there are several houses or compartments for Fig growing, as here, it is not required to work any single house so hard as that. After the first crop is over from the plants in pots, the next supply comes from those planted in brick divisions of somewhat narrow construction, so as to grow fruiting-wood instead of rampant growth. We only take two crops from our succession-house, which come on with the season, with rather higher temperature than that of a greenhouse; the first crop, although the fruits are large, is seldom a heavy one for this reason. We turn the house into a stove, and between sun-heat and fire-heat we can keep up a stove temperature in order to ripen the second crop, which is generally a large one, which keeps up our supply to the end of the month of November, and the fact of ripening eight or nine fruits on this year's shoot, is the reason that we have a thin first crop. The sort grown is Brown Turkey, and it covers a large space on the back wall. Nine years ago I had the back border made in compartments, 3 feet long, 2 feet deep, and 18 inches wide, planting one Fig tree in each compartment; but the central one taking the lead I removed all the others, and now it nearly fills its space of 40 by 15 feet. This spring it was given another compartment on each side, by taking out the dividing brick walls, and by feeding and mulching it is now ripening-off a very useful crop of Figs. Our next division is a Trentham case, 60 by 10 feet, which covers a large outdoor plant of Brown Turkey Fig, and with a favourable season we are enabled to gather fine fruit from it before cold autumn weather sets in.

There are just sufficient pipes in this "case" to keep out frost, and it is a useful place in the spring for cooling down Strawberries, so as to get them with their true flavour before sending to table.

From this "case" we only take the first crop, which is of good service, coming in before those upon the unprotected walls; and by the end of the season the house is filled with plants of Chrysanthemums, so that on the whole, it makes a very useful place. As to the border, previous to covering the tree with glass, the roots had the full run of it, and growth was in consequence very rampant and unfruitful. In order to counteract this kind of growth, its roots were confined by a brick-wall, which extends all round, and as deep as we could find roots, and still I fear that we have not quite restrained its growth, its roots getting underneath the wall, which shows clearly that in order to make the Fig fruitful under glass its roots must be severely pinched for room, while at the fruiting season it will stand any amount of feeding. Our outdoor Figs, of which we have several varieties, and the trees old and large bear fine fruit freely, and especially in warm summers. At Cuffnells Park, Hampshire, in my time, we used to climb into old standard Fig trees with a basket and fill it with large luscious fruit; and all the pruning we gave those old standards was simply to keep their shoots so that plenty of air got in amongst them, which is pretty much what we do to the Figs here under glass and upon walls. We hardly ever thin out the shoots, and only cut back the shoots when the trees begin to

be short of bearing wood; otherwise, the shoots are tied down to encourage them to break close to the old wood. Outside against the walls, most of the pruning is done in the summer time, which consists of cutting out all small and weakly shoots, to let in daylight to the ripening fruit. The next time that the knife is used is generally pretty soon after the first touch of frost has caused the leaves to fall, when all weak and ill-placed shoots are removed, at the same time all half-grown fruits are knocked off, and as no tying-in is done during summer, the points of the shoots are now bristling with Figlets which are tied-in to the old wood as close to the wall as possible.

I consider a Fig tree in good fruiting order is much less trouble to manage than any other sort of fruit tree, either inside or outside, although the ripening of the Figs outside does in a measure depend upon the season. Our sorts here on the walls are Brown Turkey, Brunswick, White Marseilles which bears well, but the fruit is very tender; and Negro Largo. J. Miller, *Ruxley Lodge, Esher.*

BERLIN LETTER.

WITHOUT doubt, the flower shops show a great improvement this season, when we compare their exhibits with those of former years. Firstly, the number of species of cut flowers is much increased; and, secondly, these are arranged in such a manner that each flower is seen to the best advantage. Formerly our bouquets were so made that they were only large masses of colour, the flowers being crowded together so closely that in most instances it was quite impossible to distinguish any single one. But now one-third of the quantity of blooms that was formerly used suffices to make a bouquet of the same dimensions. That is no disadvantage; on the contrary, the eye can distinguish each flower, and, in consequence, the public looks for improved forms of flowers, and for a greater variety of species. Formerly, in bouquets it was of little consequence if one or more petals were not quite perfect; the blemish was easily overlooked. Now, it is quite impossible to make use of an injured flower, as each is distinctly seen. To adopt a comparison, taken from botany, the bouquets of former times were like a gigantic capitulum of *Matricaria Chamomilla*, whilst they now resemble an inflorescence of an *Ulmus effusa*! There is nothing without cause, and so this change of taste has had a cause, which may be traced to a very interesting exhibition of Japanese flowers which was held here last spring. There were then shown arrangements partly of natural flowers, partly of artificial ones, and copied from Japanese sketches and photographs, which contrasted so very strongly with all hitherto seen that they became popular owing to their peculiarity. Make a thing as different as you will, from what the general public is accustomed to, and I can assure you that amongst a hundred, ten will find it "delightful," and "fashionable," and will desire more like it. So it was with the Japanese arrangements. We have now a style which is a mixture of our own taste and the Japanese, and a cross between the two; it is, I must confess, not a bad one. Gardeners are obliged to employ better flowers. It is highly interesting to watch the development of this new fashion, which is certainly a step in the right direction. The number of species, as already remarked, has been much increased, and as so many new garden plants could not be brought together at once, gardeners used wild flowers; so you may now see in our flower shops, and, curiously enough, even in the best ones, a good many flowers which, a year ago, were only allowed in rustic bouquets. *Centaurea cyanus*, *Lupinus luteus*, *Papaver Rhæas*, *Chrysanthemum Leucanthemum*, wild species of *Orchis*, &c., are now valued. Is this to be regretted? I think not. Also gardeners now cultivate in considerable quantities a great many good old forms and species, which were quite forgotten, and it is to be hoped that gardening, if this taste continues, will return to its former high standard.

It is quite time that it should be so; for it has been degenerating during the last few years, and we see at each season the same flowers, now Violets, then Cyclamen, now Roses, then Lilies of the Valley, &c. Amongst these old plants these are especially common—*Fuchsia*, *Camellia*, fruits of *Physalis Alkekengi*, double *Dahlias*, *Dianthus*, and last, not least, the *Victoria regia*. Since a young gardener, Mr. Siehe, at Steglitz, has succeeded so well in cultivating this queen of flowers in the open air in boxes about 7 feet broad, and 20 to 30 feet long, and has raised flowers and leaves of a size never seen here before, even in *Victoria*-houses, this plant in the next few years will certainly be seen in the flower-shops for decorative purposes still more than it is now; whilst he whom I have named is still the only grower. Dr. U. Dammer.

(To be continued.)

NEW ALPINES.

(Continued from p. 399.)

AMONG the interesting and noteworthy plants of which M. Sommer brought us seed from the Caucasus, we should also mention:—

Draba tridentata, DC.—A very pretty little plant, forming on the ground close tufts which are composed of short branches, very pointed glabrous leaves, dark green in colour, resembling the foliage of *Saxifraga juniperina*, or of *Alsine pinifolia*. The flowers are bright yellow, open in May and June, and grow in short dense clusters. The plant, when in bloom, is most effective. It comes from the alpine districts of the Caucasus and Taurus, requires exposure to sun, and a pebbly soil.

Campanula lactiflora, Bieb.—On rockeries and in gardens we grow a *C. lactiflora*, which is nothing more than a white-flowered form of *C. latifolia*. The true *C. lactiflora* of the Caucasus is very little known. It is included in the well-known collection of Mr. Marc Micheli at the Château de Jussy, but I never saw it elsewhere. The Caucasian species is a beautiful one, with graceful and elegant stems, bearing leaves which are sessile, indented at the edges, and slightly pubescent; the flowers are clear white, campanulate, growing in a panicle, the terminal branches are pauciflorous. It blooms in July and August, and requires deep light soil, and a cool shady position.

Digitalis ciliata, Traut.—A beautiful species from the granitic regions of Betscho in the Swania group (Southern Caucasus), at an altitude of from 3600 to 4000 feet. It resembles our *D. grandiflora*, from which it differs by its more hairy calyx, shorter flowers, and the tube of the corolla, which is campanulate. It is a graceful, elegant plant, and flowers freely from June to September. It requires a light soil, and exposure to sun.

Veronica monticola, Traut.—From the Klüsich Valley, in alpine Abchasia. It is a plant from 9 to 12 inches high, with stems trailing over the ground and forming large spreading tufts, the leaves glabrous, oblong-lanceolate, prettily toothed, the flowers small and blue, growing in short and terminal spikes. The plant prefers a sunny rockery, and is increased by division or seed.

Scabiosa Correvoniana, Sommer.—From Eastern Swania, in the alpine districts on the confines of Abchasia. This *Scabiosa* is a handsome bushy plant, with erect stems from 7 to 9 inches high, bearing large heads of flowers of a pale yellow colour, with a large involucre below. Propagation from slips or seed is easy. The plant blooms from May to August. It is a new species, and the description of it by its discoverer will appear shortly in the botanical journals.

There is also a very peculiar undetermined *Dianthus* which is flowering freely with us, and which has flowers much resembling those of the well-known and graceful *D. neglectus* from the Mont Cenis group. The new plant is low-growing, with branches raised only about 4 inches above the ground, and terminated by one or two large flowers of a bright pink inside, and yellowish or bronze-green outside. The stem is leafy. This plant will be assuredly most welcome in gardens; it is so

bright and free-flowering. Doctor And. Baldacei, of Bologna, sent me last year from an excursion in the mountainous regions of Servia and Montenegro, several most interesting plants, several of which are as yet unknown. Among them were:—

Cerastium decalvans, Schloss et Vak.—A very interesting and peculiar plant, with dry and almost sub-ligneous stems, thin, spreading over the soil; the foliage is like that of a *Gnaphalium*, green, covered with tufts of wool, forming dense and floccose rosettes; the flowers pure white, numerous, and opening in succession during May and June. The plant is increased by division or seed, likes full sunshine and a rockery.

Onobrychis Laconica, Orph.—A very beautiful species, which differs from *O. sativa* by its bright pink and large flowers, by the greater length of the calyx-bracts, the more glaucous foliage, and shorter more compact habit. It requires full sunshine.

Alyssum repens, Baumg.—From Mount Durmitor at an elevation of 6000 feet, is a dwarf spreading species, with lovely yellow flowers, surpassing in beauty those of most of the other *Alyssums*.

Sempervivum patens, Guis.—This is known in gardens, but is rarely the true *S. patens*. Mr. Baldacei has sent it to me from Montenegro, and it has been in full bloom here this summer. It is a pretty species, forming glabrous rosettes of clear almost bluish-green, and bearing beautiful pale yellow flowers.

Chrysanthemum cinerariaefolium, Vis., is an excellent and highly decorative species, well worth cultivation in every garden. The leaves are long-stalked, very finely and deeply lobed and cut, and the flowers are very large and fine. The plant requires rich soil and sunshine; it grows easily from seed. H. Correvon, Director of the Jardin Alpin d'Acclimatation, Geneva.

THE APIARY.

FOREIGN BEES.

THE rage for foreign bees seems somewhat to have subsided lately, and is attributable to its becoming more widely known, that there are few advantages to be gained by keeping them. Ligurians still stand far ahead of all the foreign races for a combination of good quality, beauty, gentleness, prolificacy, and honey production. Any beekeeper wanting to try a stock of foreigners is advised to get Ligurians as being the most likely to give satisfaction. Having procured them, it must not be forgotten that they will require somewhat different treatment to that accorded to the native race. Owing to their coming from a warmer country, they will be found to be more susceptible to the vagaries of our climate, having less immunity from such diseases as dysentery and foul brood. They also not infrequently get infested with the parasite (*Braula caeca*), although this is not detrimental, except as regards the comfort of the bees! As Ligurian queens are so prolific, larger hives than ordinary must be provided for them, in order to have a brood-nest to contain thirteen or fourteen frames to give room for the larger number of eggs that will be deposited. It would appear to the uninitiated that with such prolific queens more profit would accrue in the shape of a larger yield of honey, but this is not so, as the extra quantity which must of necessity be gathered by a larger army of workers is used up by the bees themselves, as it goes to feed these and a correspondingly larger number of larvæ, the latter requiring an enormous supply. As these bees cap over their honey in such a peculiar way, leaving no air space underneath, and thus making it appear dark, it is best to devote them entirely for producing honey for extracting. This is a serious drawback to Ligurians, as it is certainly better to keep a race of bees that is equally good for comb-honey as well as that intended for the extractor, both of which qualities our native bee undoubtedly possesses. Carniolans have been written up a great deal, but time has only proved that they must take

second place to Ligurians. Coming from a cold and mountainous region, they are hardy enough, but cannot compare with the latter for beauty. They are as prolific as those, and their comb-honey is perfection, only they will swarm immoderately, and for this reason they become a nuisance, especially as they cannot be depended on to do anything else.

TWO QUEENS IN ONE HIVE.

Mr. Wells, the introducer of the new system of bee-keeping, has just given to the readers of the

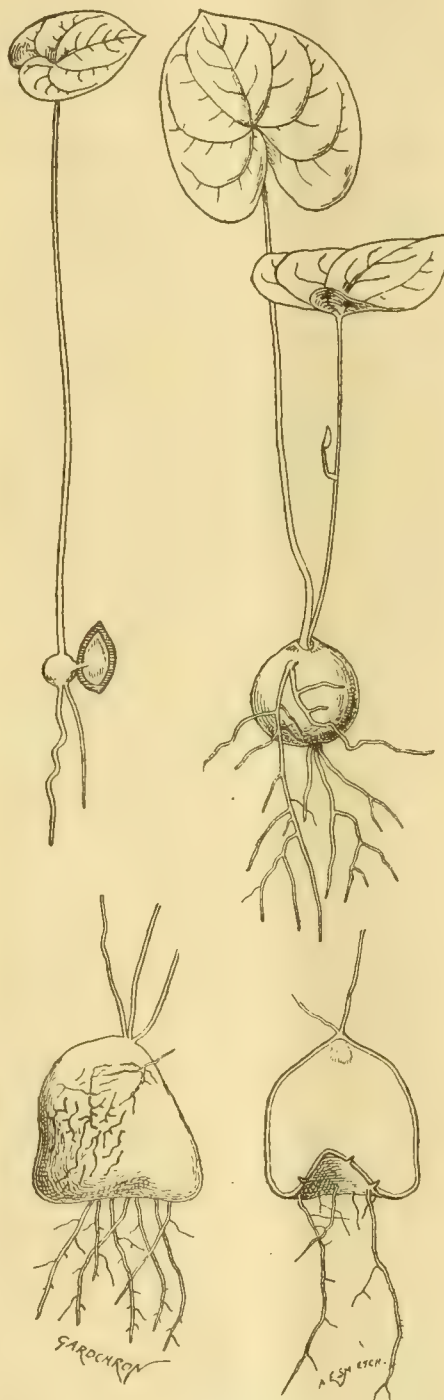


FIG. 93.—GERMINATION OF TESTUDINARIA ELEPHANTIPES. (SEE P. 618.)

British Bee Journal, the results of his experiments during the past season. He proves, without any display of ostentation, in a concise and business-like statement of hard facts, that this system, as the Americans have it, has "come to stay." His critics mostly argued that they could not see where any advantage could be gained, as it seemed clear to them that, working with two queens in one hive would be only equal to two separate colonies, as the result in honey would be the same. Mr. Wells, although he

states he had already decided the question for himself, determined to devote last season to a demonstration which would be conclusive, and effectually settle the matter. He therefore, with this end in view, started last spring with ten stocks, five of which were headed by single and five with double queens. The conditions at starting were as nearly as possible equal; the hives were close together, so that the same area for gathering honey was available to each, and all had the same amount of care and attention bestowed on them. A record was kept of the quantity of honey taken from each set of hives, and without entering into details, the following was the result:—The single-queen stocks gave an average of 41 lb. of honey per hive, whilst from the double queen stocks the average was as nearly as possible 158 lb., or nearly four times as much again. Considering that if a double-queened stock is compared to two ordinary colonies, which would have together yielded, on the above figures, 82 lb., the gain in honey is nearly doubled by the new system. This way of looking at it, however, is scarcely favourable enough, as the gain in other ways has to be considered. For instance, it should be easier and less expensive to make one large hive than two small ones, and there is less trouble required to work the bees with the former than the latter. Mr. Wells states that he is not able at present to prevent swarming, as three out of his five double hives swarmed. The swarms were very large, one weighing over 14 lb. He returns the swarms, and makes nuclei with the brood-frames taken out previous to putting them back. The average yield from the double hives was not so large this season as last, which is accounted for by the fact of there being no Sainfoin grown nearer than a mile from the apiary, instead of 30 acres being close by as at that time. The weather was also wet when the white Clover was in bloom. The yields from skeps compare in a very ridiculous manner, as it is mentioned that in the same locality, but closer to the Sainfoin, one of the old-fashioned school obtained an average of 7 lb. from ten skeps, and another only about 2 lb. from five skeps. *Expert*.

THE ROSERY.

SELECTING AND PLANTING ROSES.

As the season for planting Roses, both dwarfs and standards, is with us, a few words of advice may be of service to those who think of planting; of course I am writing more for those that are making their first start. In the first place, it would be as well to look over beds and borders, and note down any vacancies, as well as any that may seem to be in an unsatisfactory condition as to health; last year's planted Roses are likely to be in this condition, having been greatly injured by severe weather last season. Prepare all beds and borders by trenching two spits deep, and add a plentiful supply of good rotted manure; should the ground be light, cow-manure would be the best sort to employ, as it keeps the ground cool, but should the ground be heavy loam, then add either pig or horse-manure. Having made up your mind as to the quantity you require, write for a rose-catalogue from a leading firm, and mark the sort you wish to have; always add a few supplementary names, which might be used in case of some sorts being sold out, which I believe will be the case, as Roses are scarce on account of severe weather these last two seasons. Then despatch your order, so that there may be no delay in getting your Roses planted in good time.

November is undoubtedly the best month for planting hybrid perpetuals, Bourbons, Mosses, and the hardier kinds of climbing Roses; but for Teas, Noisettes, Chinas, and Polyanthas, which can be had in pots, I would certainly say April, when we may hope that the severe weather has disappeared, and that they may be planted so as to feel no check, and will go away at once.

As regards planting, I would like to say a word as I believe a great deal of mischief for which the

nurseryman is blamed is due to bad planting. Those budded as dwarfs should be planted with the bud just below the surface of the soil, which should be made firm by trampling. Standards should be firmly planted, and a stake put to them at the same time, so as to prevent them from being blown about with the wind, which causes injury both to root, and hinders success.

As regards protection through the winter, I would also like to say a little. Many place either straw or hay bands, or fill the heads with a lot of material, so that sometimes, with the mildness of the weather, the buds start, and when the protection is taken off, the growth perishes, and thus the plants are spoilt for that season. I believe in protecting the Roses, but in a light manner. Bracken is the best material, and should the weather change to mild at times, it should be taken off rather than be allowed to remain and excite the growth. I would also advise the mulching of all freshly-planted Roses. *W. T. C., Kingston Hill.*

FRUIT REGISTER.

APPLE MARGIL.

I HAVE often heard this Apple praised for the goodness of its flavour, but here in our rather heavy soil it is not good. The fruit has something of the flavour of Cox's Orange and Ribston Pippin, but it is a faint trace. It is said to be a good substitute for the latter, but in my case it cannot be compared with either of these varieties. It is generally a weakly grower, but crops fairly well.

APPLE SANDRINGHAM.

This variety is as yet not much known, but it is one that should be widely grown; the tree being a good grower, bearing a full crop of handsome fruit, of a greenish-yellow colour, striped and dotted with crimson, and it is said to keep well. *E. M.*

NOTES FROM HAM HOUSE, RICHMOND.

PERHAPS there are few places so near to the metropolis which possess greater historical associations than does Ham House. Its claim for special interest lies in the fact that within a few miles of London is to be found this historic relic of bygone days and bygone splendour.

"Here all things in this place remain
As they were ordered ages since."

More than 200 years have come and gone since the time when Macaulay tells us Ham was celebrated for its more than Italian luxury, with its busts, fountains, and aviaries, and even now the stately old red-brick house on the banks of the Thames, surrounded by its leafy avenues, has interest for the visitor. Tradition asserts that the iron gates which face the river have never been unlocked since a Stuart King passed out. But in this tradition errs—like all things human—though until lately, these gates have only been opened on special occasions. Ham House was for a brief time a royal residence, and Prince Henry, the eldest son of James I., dwelt here during a portion of his life.

In 1643, Charles I. granted the manors of Ham and Hatch and the house at Ham to his favourite friend, William Murray, creating him Earl of Dysart. Ham possesses many fine picture, *objets d'art*, and some most valuable old books.

On the north side of the mansion we catch a glimpse of the Thames; while from an opposite window, the eye reposes on a broad terrace, a large stretch of green sward, and beyond some tall Scotch Firs, said to be some of the first planted in this country. A fine avenue of Elms a mile in length, and leading to Ham Common, is an imposing feature. Limes and Sycamores also do wonderfully well here.

The culture of herbaceous plants, comprising the best things, is being taken up with much vigour by Lord Dysart's able gardener, Mr. G. H. Sage, and

are much in keeping with a garden of an ancient house. Michaelmas Daisies, Helianthus, Eryngiums, were noticeable for their beauty in the autumn. I noticed a fine specimen of a plant that we now seldom see in the herbaceous border, *Veratrum nigrum*, a stately hardy perennial, bearing dark purple flowers, almost black, on a spike 7 feet in height, a very conspicuous object in the border.

The kitchen garden is well cropped, and the fruit trees, Apples, Pears, &c., were noted as carrying good crops.

Referring to the indoor department, Grapes in all the leading varieties are excellently cultivated, this fruit being a favourite one with the earl; Figs, Peaches, Nectarines and Pineapples are likewise well grown. *J. B.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

VINES.—Where the object of the gardener is to secure ripe Grapes from his permanent Vines in the month of May, everything should be got in readiness at the present time, so that forcing may commence in the first week of next month. The roots of all Vines which have to be forced early should be confined to borders inside the house, so that there may be no very great difference between the temperature of the soil and that of the house. In dealing, however, with Vines having the run of the outside and the inside borders, the treatment to be followed should not differ from that which is proper for inside borders. Assuming that the early Vines have been pruned, and all cleansing of the house and renovating of the border attended to, all that now remains to be done is to make up a hotbed of stable-litter and Oak leaves, first preparing these by well mixing several times, and turning them. Just before the vinery is closed, apply a dressing of equal parts of kainit and basic-slag, or any other forms of potash or phosphatic manure to the border, which should be followed with water and farmyard drainings at a temperature of 100°, sufficient in quantity to thoroughly moisten every portion of the border; and as soon as this is done make the prepared hotbed stuff into a bed on the border, making it as wide as may be most convenient, and of a depth of 2 to 3 feet. This warm coating will prevent in a great measure the loss of the heat imparted by the watering, besides securing warmth and moisture, without which the canes do not generally break evenly or strongly. Maintain a minimum temperature of 50° in mild weather, but allow it to fall 5° if frost is severe, rather than have recourse to hard firing; and syringe the canes twice daily if they should become dry. But this with the large bed of fermenting material, which should be kept slightly moist by syringing it, will not be frequently required at first.

SUCCESSION VINERIES.—These usually contain more varieties than the early houses; and among those Vines which may now be pruned is Duke of Buccleuch. If the hints regarding this variety which I gave in a former Calendar have been acted upon, and young shoots laid in along the sides of the canes, from the top to the bottom, these may be shortened to 2 or 2½ feet; the object of this operation being the securing of young wood in equal quantity on each side, all along the main rod, and with this mode of procedure, if persisted in for some time, the shoots which have current year's crop should be cut back to the bottom laterals, or rather what I should call sub-laterals, and these sub-laterals pruned to a prominent bud for the object of furnishing wood for laying in next year, and yielding fruit the following one. Prune all the other varieties in the second early vinery to a plump strong bud, and top-dress the borders according to previous instructions, not omitting to afford some potash if the black varieties have lacked colour this season.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

SELECT TREES AND SHRUBS.—In forming new gardens and improving old ones, some of the following species and varieties of trees and shrubs should be planted among the common kinds, which usually make up the bulk of those planted, many of which are well adapted for planting singly on lawns and in other places where their beauty or quaintness would

be easily observed, and where they would be of decorative value. All are hardy enough to plant in all but the coldest part of Britain, and therefore no one need have any fear about planting them. *Acer* are round-headed, of moderate height; *A. palmatum* is remarkable for the variety in the form and colour of its leaves; *A. japonicum* var. *aureum*, a very distinct variety, has many-lobed leaves, which are of a soft pale yellow, with rose-coloured foot-stalks; *A. palmatum linearilobum* produces long, narrow, slightly-toothed lobes, cut to very near the base; and in the young state they, like the shoots, have a reddish tinge, but become grey with age, the former retaining the reddish tinge in their foot-stalks and margins only. *A. p. septemlobum elegans* is remarkable for the changes of colour which its leaves undergo during the time of their development, changing from a soft fulvous-green to rose, and subsequently to a deep red. *A. p. linearilobum atropurpureum* is a very handsome variety, in which the leaves when first expanded are rose-purple, deepening with age to a bronzy-red hue. *A. p. septemlobum elegans purpureum* has the most bright-coloured of all the varieties of *A. palmatum*; both young shoots and leaves when first developed are of a deep purplish-crimson, which ultimately become suffused with a greenish-black. *A. p. s. laciniatum* is quite distinct from the preceding, and from the typical *septemlobum*; the leaves being of a soft pale green, with the apex of the lobes tinted with rose when first developed—the lobes are linear, with the margins lacinate. *A. polymorphum decompositum* has the kind of the young shoots of a bright reddish-crimson, and the foliage a soft fulvous green, showing a pleasing contrast to the more showy colour of the shoots. The leaves are generally 5-lobed, very unequally cut, and variable in form. *A. p. ampelopsisifolium* is another telling variety, with foliage showing varied tints from its development in spring to its fall in autumn, like those of the Virginian Climber. The leaves are about 3 inches across, 5 to 7-lobed, the lobes being elegantly cut at the edges, and terminating in a long point. *Cæsalpinia japonica* is a beautiful Japanese shrub, with leaves from 9 to 12 inches long; the inflorescence is a thyrsoid or sub-corymbose raceme as long as the leaves, and bearing from twenty to thirty bright canary-yellow flowers an inch in diameter, with which the red filaments and anthers form a striking contrast; the raceme remains fresh in water several days after being cut. *Clerodendron trichotomum* is a free-growing shrub, with erect stems and branches, forming in a few years a dense globose bush, 8 to 10 feet high, and as much through; it is clothed with bold dark green ovate-acuminate leaves, nearly 6 inches long. Its flowers appear in September, in the form of large terminal cymes; they are white, with a purplish calyx, and fragrant. *Magnolia Soulangiana nigra* is a fine introduction, belonging to the *M. conspicua* section, and perfectly hardy. The flowers are very much like those of the hybrid *M. Soulangiana*, but easily distinguished from them by the rich purplish hue of the outer petals. It is the darkest-flowered hardy *Magnolia* in cultivation. Like *M. Soulangiana*, the flowers appear in early spring in advance of the leaves, and, at that season, it is one of the most conspicuous as well as one of the grandest of garden ornaments. *Styrax japonica* is a charming shrub, of rather dense habit, from 8 to 12 feet in height, furnished with neat deep green foliage, and bearing simple racemes of sweet white flowers. *Cornus brachypoda* is a handsome deciduous tree, reaching a height of 30 feet, and quite unlike any other *Cornus* in cultivation. The flowers are produced in cymes about as large as those of the common Elder, but of a purer white; they appear in June, and project well beyond the foliage of the tabulated branches. *Eucryphia pinnatifolia* is another remarkably handsome half tree or big shrub, growing from 8 to 10 feet high in its native country—Chili. It is furnished with deep glossy green pinnate leaves, each of which consists of five ovate toothed leaflets, about an inch long. The flowers, produced from the axils of the upper leaves, are from 2½ to 3 inches in diameter, each with four pure white spreading petals, and numerous stamens with long filaments, terminating in bright golden yellow anthers. They resemble in form an *Hypericum*, and are produced in August. *Liquidambar styraciflua* is a small elegant North American aromatic tree of pyramidal outline, resembling the Maple in the leaves, excepting that they are alternate, and not opposite as in the latter, and that they assume more intensely brilliant tints in autumn.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

APRICOTS.—Trees may now be planted in loam of a good depth, but not too rich, or an exuberant growth fraught with danger will result. Take care to put plenty of lime-rubbish and burnt earth with the staple. Apricot tree roots should not be often disturbed, but the trees should be surface-fed, and the borders slightly forked over, but not nearer than a point about 4 feet from the stems of the trees. Moor Park, Grosse Pêche, Blenheim, Hemskirk are varieties which should be included in every collection of Apricots.

PRUNING.—Now that the leaves have fallen from the trees, pruning may be taken in hand, beginning with those growing on northern and other cold aspects, so that it may be finished before wintry weather makes pruning unpleasant work.

MORELLO CHERRIES.—These should be the first kind of fruit begun, the pruning generally being almost identical with that pursued with Peaches. Take care not to leave the shoots too near to each other, for should once the trees become crowded with shoots, poor crops of fruit are almost a certainty; aim, therefore, at keeping the main branches equally balanced, well but not too abundantly furnished with fruiting wood. If the trees were loosened from the walls last year, and the main branches balanced, only those ligatures or shreds which clasp the branches and shoots tightly should be renewed, pruning them out where crowded. But should the tree require taking from the wall, remove carefully all the nails, pruning the tree as the work proceeds, freeing the wood from scale, if these pernicious insects are present, and the walls from moss. Proceed to fasten the main branches to the wall, filling in the open spaces with the best of the shoots. This done, the trees should be washed with weak soap-suds, and the borders being pricked over.

ORCHARDS.—During mild weather push on with the planting of fruit trees and bushes on heavy land, putting to each bush or tree a few shovelfuls of fine soil, so as to completely embed the roots. If the soil is very wet, the final tramping should be left till it is moderately dry. Orchard work will principally consist of pruning, thinning the heads, and manuring. Nut bushes should be left till the spring before pruning them. Orchard land where not turfed should not be dug, but only slightly pricked over, deep enough to bury weeds, and mulched with good manure.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

THE EAST-INDIAN HOUSE.—Such inmates of this structure as *Aërides*, *Saccolabiums*, *Cypripediums* of the niveum type, *Cœlogynes* of the warm-house, *Oncidium*, and *Odontoglossums*, will not be benefited if an over-exciting temperature is maintained. These plants should be carefully watered, not, however, keeping them so dry as to induce shrivelling of the pseudobulbs or the loss of leaves; neither must the atmosphere be arid, but the stages and floors should be moistened most days at night, and again in the morning, air being admitted when the weather is suitable for so doing. *Angræcums* showing flower spikes should be placed at the warmest part of the East-Indian house with the *Phalænopsis*.

REMARKS ON THE CULTURE OF INTERMEDIATE-HOUSE ORCHIDS.—A sharp eye must be kept on the plants at this season in order that each species may receive as nearly as is possible the treatment proper to it, it being so much easier to do the wrong thing at this season than in the summer when the plants are growing in their respective houses. For instance, some species of Orchids having finished up their pseudobulbs are now at rest; while others are more or less active. Those species which are roughly classed as intermediate, should not on that account be confined to one house the whole year; hence a good deal of labour in shifting them from one house to another is really necessary, if good results are to follow. I refer mainly to species which are shy to flower, and those that flourish and produce flowers in abundance for a short period only after they have been imported, and then rapidly decrease in size until they become worthless. Seeing how wide apart are the natural habitats of Orchids of the many species that we attempt to cultivate in one house, the wonder is, not why

they fail to continue strong and healthy, but rather how they grow even so well as they do under the same kind of treatment. Take, for instance, the *Cattleyas* that are made up; there should be put together in a cool airy house with moderately dry atmosphere. They will need very little water at the roots; but many are still only half made up, and these should be afforded more warmth to hasten growth. Then again, *Odontoglossum citrosimum*, and *Cœlogyne cristata* should be kept dry and cool at this season; whilst *Miltonia vexillaria*, *Oncidium Weltoni*, and *Lycaste Skinneri* are growing actively, and they should be placed in a nice growing temperature of 60°. Then there are the other *Oncidiums*, such as *O. Forbesii*, *O. varicosum*, *O. crispum*, and others of the type, which should be rested cool and dry, and if along with *Dendrobium Wardianum* so much the better. A temperature of 40° to 50° would serve to impart vigour and strength to them, but not so with *O. Marshallianum*, *O. sarcodes*, and other varieties pushing their flower-spikes. These plants need to have a growing temperature of 50° to 60°, as also *Anguloas*, *Cymbidiums*, and *Cypripediums*. *Trichopilias* should have the warmer end of the intermediate-house, too low a temperature and too much moisture at the roots produce a disease in the pseudobulbs of *Trichopilias*, which soon reduces the size of the plants.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

PEAS AND BEANS FOR EARLY CROPS.—The month of November is usually considered by those who raise their earliest crop from late sowings the best month in which to sow; but, owing to the general demand for large Peas at the commencement of the season, and the great loss attending the sowing of these from excess of moisture, and the low temperature, sowings in heat and on south borders are now generally adopted, but gardeners who have accommodation may sow in a warm frame, or in boxes or pots, in the early part of the year, and secure as early a crop as by sowing at this season in the open, and with rather less trouble, as the Broad Bean, when transplanted after being properly hardened-off, soon takes to the soil. It may here be remarked that Peas and Beans raised in mild heat, and not much forced, but allowed ample time to vegetate, succeed admirably; but the plants suffer greatly after planting out if they are not well protected by means of boards, straw hurdles, or evergreen branches. The Early Mazagan Bean was the kind formerly grown, but Beck's Dwarf Green Gem is superior to it, and very early, besides taking up but a small amount of space. It is also excellent when sown in pots early in the year, and planted out; and is equally hardy with the first-named. If it be sown at this season in deep drills, and these are only partly filled in, the plants are protected, in a measure, from the wind, and as soon as growth takes place, some of the soil may be drawn into the drills until finally the ground is made level. Longpods may be sown to succeed the dwarf Beans.

CABBAGES.—These are growing vigorously, but means must be taken to prevent injury by frosts, the quick-growing earliest planted Cabbages suffering more than the later plantings. To do this, some soil should be drawn up to the stems when the soil is workable, previously strewing wood-ashes along the rows before doing so, and make the soil firm about the plants by treading it, an operation that may, however, be unadvisable on heavy or clayey land, but is very essential on light ones. The stock of plants in the seed-beds should be pricked-off into rows at an early date.

THE SOWING OF PEAS.—Those who may possess a warm border may sow at about the present time in small quantities to furnish a few dishes in advance of the Peas sown in January in heat. A dwarf-growing Pea should be selected by preference, viz., Veitch's Extra Early, a first-class, good cropping Pea, which, sown now, will come into use towards the end of the month of May. Chelsea Gem is another quite as good, with larger pods, an extremely productive variety, but it should have a warm corner to itself, as it has some of the Marrow strain in it. For early sowing, this variety is decidedly the best Pea I have grown. A well-sloped border is best for Peas, and if a wall or other impervious shelter exists on the north or east side, so much the better. Much space between the rows is not required if dwarf varieties are sown, but space should be left for a row or two of Lettuce

in the centre between the rows. Birds and mice are sometimes troublesome, and the latter should be trapped, and the plants protected from the birds by netting or threads of cotton. It is a good practice to strew plenty of dry wood-ashes and a small quantity of soot along the rows. I mulch the land with spent Mushroom manure, which helps to retain warmth in it, and affords some small amount of nutriment. By dusting the plants over occasionally with wood-ashes, mildew is checked, and slugs kept at bay. For succeeding the varieties above-named, William L., Kentish Invicta, and Wm. Hurst are good, dwarf, early Peas. I do not advise the sowing of American Wonder, Chelsea Gem having superseded it.

CARDOONS.—Keep the plants protected if frost supervenes, and tie up any that are fit for blanching, winding hay-bands round them to keep the light away from the main stem. Plants fit for use may be lifted with a ball of soil, and placed in the root store.

CELERIAC, if not lifted, should have some tree leaves or litter strewn between the rows, first drawing the soil up to the crowns. The flavour is always best when the roots are left in the soil, if some kind of protection can be afforded them.

GLOBE ARTICHOKEs require some Mushroom-bed dung, litter, leaves, or coal-ashes placed around the crowns.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

MIGNONETTE.—When well grown, few plants are more appreciated during the winter months than Mignonette, *Reseda odorata*. Any plants singly or several together in pots, which are showing for bloom, should have the necessary support for the stems afforded; and when the pots become well filled with roots, to stimulate growth, a pinch of Thomson's plant manure should be sprinkled on the surface of the mould. All succession plants not in flower should be placed near the glass to avert the evil effects of spindling. The best place is a frost-proof brick pit or the shelf of a disused vinery, admitting air to them on every favourable occasion, and so as to develop a robust short-jointed growth, and place one neat stick to each plant before it falls over.

HELIOTROPES.—Plants of these which have been growing in pots, and are intended for the embellishment of the conservatory during the early winter, will now need the assistance of supplies of weak manure water, or what is better in conservatories, &c., an artificial fertiliser. One or two neat sticks should be put to each plant, and the shoots lightly secured with neat ties.

FUCHSIAS.—The latest-struck batch of these plants will now be past their best, and may be gradually dried off. In the case of small and medium-sized plants, a place should be found for them beneath the greenhouse stage or similar place, where frost can be excluded.

EUPATORIUMS.—Plants of these species as fast as they go out of flower should be cut back to within 2 inches of this year's growth, previously withholding water for a few days, and after pruning, place them on a shelf near the glass in the greenhouse, or where they will be safe from frost. Eupatoriums need scarcely any water until they commence to break freely; and should aphids attack the young shoots, fumigate them without delay.

SAXIFRAGA PYRAMIDALIS.—A cool frame is the best place in which to grow this useful plant during the winter, keeping them within a few inches of the glass on a bed of coal-ashes, which is preferable to anything else for keeping these subjects in health, owing to the thorough drainage which it affords. On mild fine days, the lights should be drawn off altogether, tilting the same by night when there is no danger of frosts. Avoid the necessity to afford much water at this season, dampness of the soil or air being very injurious.

VIOLETS.—Those growing in pits or frames should be examined once a week, and all decayed leaves removed; and on fine mild days the lights may be drawn off the frames, replacing them on the least sign of frost at night. If slugs are troublesome, a few Cabbage leaves should be placed between the plants, and examined every evening about 8 P.M., and in the early morning. A sprinkling of dry wood-ashes is effectual in freeing Violets from slugs.

EDITORIAL NOTICE.

Advertisements should not be sent to the Editor, but to the Publisher.

SHOW.

TUESDAY, Nov. 22—Dalkey Chrysanthemum.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°·6.

SIR JOHN LUBBOCK'S recently-issued work on Seedlings* truly comes under DE CANDOLLE'S definition of "a book," for in it the descriptions of various forms are classified, discussed, and made the basis of logical inference. In its way, we can think of nothing fairly comparable to it except GÄRTNER'S classical work, entitled *De Fructibus et Seminibus Plantarum*, which, although it is a century old, is still constantly referred to for facts and details, and will be so for many years to come. A similar long period of utility, we venture to think, will be experienced by Sir JOHN LUBBOCK'S book. It forms two bulky volumes, each of more than 600 pages, of orderly-arranged text, illustrated by no fewer than 684 woodcuts, with a bibliography filling some forty pages, and a double-column index, filling yet seventeen more pages. There is no doubt, then, that as to form, Sir JOHN LUBBOCK'S work amply fulfils the requirements which DE CANDOLLE lays down as to what a book should be. The subject, it is known, has long occupied the attention of its versatile and accomplished author. Communications to the Linnean Society, as well as separate publications, have paved the way for this imposing treatise. Indeed, the Introduction to the present volumes is constituted by a reprint of portions of some of these papers. In it the author discusses the general form and appearance of seedling plants, and of their cotyledons, the general conclusion being arrived at that the form of the embryo and that of the cotyledons are dependent on that of the seed, the seeds themselves being constructed with reference to the habits and conditions of the plant. The main differences in the seedling, we may here point out, are connected with its development beneath or above ground, and are dependent on the degree and kind of development of the internode below the cotyledon—the so-called "hypocotyl" (a new word for caulicle or tigellum), and of that of the internode above the cotyledons—the plumule. Further differences depend on the nature and form of the cotyledons themselves, on the presence or absence of axillary buds, and so forth. Generally, the cotyledons serve only a temporary purpose, and do not greatly alter in appearance after their first formation; but Sir JOHN LUBBOCK gives some very curious illustrations in *Oenothera*, where the base of the cotyledon continues to grow, and to assume the form and characteristics of the adult leaves.

After an introduction devoted to the general morphology of the seedling, the special morphology of the embryo plant as seen in the various orders of flowering plants is dealt with, beginning with Ranunculaceæ and ending with the Grasses. In the first place, a general account of the fruit, seed, and seedling of each order is given, and then particular details are afforded referring to illustrative genera and species. Of course, some orders and some genera are much more fully represented than others, not that they are intrinsically more important, but because material

is much more easily accessible in some cases than in others. Plants cultivated in gardens have naturally furnished the bulk of the material, although the inadequate representation of some orders such as Palms and Orchids, cannot be attributed to any lack of available material.

No botanist will need reminding of the great interest attaching to certain anomalous forms of germination like that of some *Delphiniums* and *Umbellifers*, of *Corydalis*, of *Tropæolum*, *Dodecatheon*, *Cyclamen*, *Trapa*, *Araucarias*, or others, but all will owe Sir JOHN LUBBOCK a debt of gratitude for the vast number of illustrations he has brought together. They are brought together, too, in a form admitting of easy reference and comparison, presenting in this way an admirable contrast to many modern text-books, more especially German ones, excellent, it may be, in substance, but detestable and time-wasting in form.

The account given of the germination of *Testudinaria elephantipes*, and of which, thanks to Mr. WATSON, we give an original illustration (fig. 93) may be taken as a sample of the style of the book:—

"The cotyledon remains in the seed after germination till it decays. The hypocotyl is subterranean, very short, and develops in the early stages of the seedling into an ovoid fleshy tuber. The first leaf is comparatively large, cordate, and somewhat reticulate, with five strong nerves radiating from the base, and becoming curved at their tips. The persistent root-stock or stem ultimately becomes a woody, flattened, globose, or conical mass, rather deeply fissured in a reticulate manner, presenting the appearance of the shell of a tortoise.

"Primary root elongated, flexuose, stout, with fibrous lateral rootlets.

"Hypocotyl very short, subterranean, thickening into a fleshy, ovate tuber, generally, if not always, rootless during the earlier stages of growth.

"Cotyledon subterranean, remaining in the seed, and fusing with or closely adhering to the endosperm, where it remains till decay.

"Stem undeveloped in the early stages of the seedling.

"Leaves simple, entire, radical or cauline, alternate, exstipulate, petiolate, glabrous, reticulated, with the principal nerves radiating from the base, and becoming incurved upwards.

"[Leaf] No. 1°, cordate, subacutely cuspidate, with five strong leading nerves radiating from the base, and two weaker branches from the basal pair."

Sir JOHN shows how, as a descriptive naturalist, he has been influenced by the sound methods of LINNÆUS, whilst as an evolutionist he understands the true meaning of a natural system. The appearances of the seedling plant not improbably represent some of the phases of ancestral structure, and in any case they afford very interesting intermediate gradations between the infantile and the adult condition, not only as regards their external form, but as to their internal anatomy also.

To the physiologist, the seedlings are also very interesting, being sometimes calculated to fight their own battle from the first, whilst in others they are for a time more or less dependent on neighbouring parts for sustenance. From this it is obvious that, from a practical point of view, the study of seedlings and their mode of life is essential to the cultivator; indeed, gardeners, farmers, and especially seedsmen, will find Sir JOHN LUBBOCK'S book a useful one for reference. Young gardeners and amateurs desirous of undertaking some useful work might take it as a foundation, and add to it almost *ad infinitum*, according to the measure of their opportunities. The observations required are such as almost anyone could compass, not necessitating costly

or intricate apparatus, or demanding any special aptitude on the part of the observer.

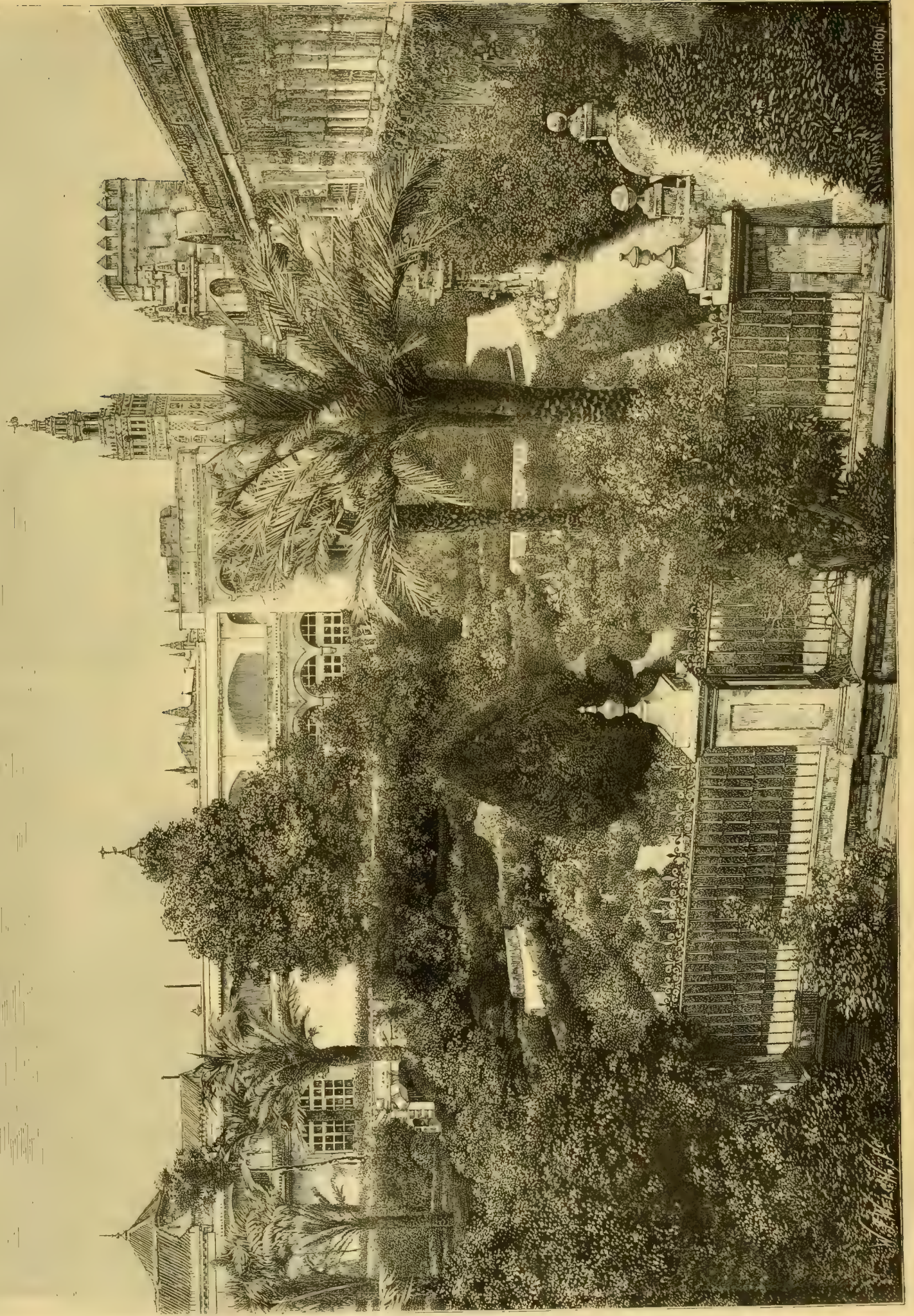
It is obvious that no one man, even if he could devote his whole time to the business, could hope to complete such a book as this within a reasonable time without assistance; least of all a man with so many and such diversified calls upon his time as Sir JOHN LUBBOCK. The author accordingly cordially acknowledges the services of Mr. HENRY, who has drawn many of the figures; of Mr. FRASER, who collected, grew, and noted the characters of many of the plants; and of Mr. RENDLE and Sir JOSEPH HOOKER, who rendered assistance in looking through the press.

We trust we shall not be considered either ungracious or hypercritical if, while thankfully acknowledging the great value of the bibliographical references, we add that they might, with advantage, have been considerably extended. We fail, for instance, to find any references to the curious mode of germination of *Sechium edule*, to the intracarpellary germination which often takes place in *Citrus*, *Melons*, *Carica* (figs. 91 and 92), and in *Pernettya*; to the numerous figures given by Baron Sir FERDINAND VON MUELLER, showing the process of germination in the species of *Eucalyptus*; to the curious case of *Tropæolum*, studied many years since by Mr. DYER (see *Gardeners' Chronicle*, 1872, p. 218); to the beautiful plate showing the germination of different species of *Crocus*, by Mr. MAW; to the numerous seedling *Primulas* figured in these columns at the time of the *Primula Conference*, and published also in the *Journal of the Royal Horticultural Society* in 1887; to the noteworthy modes of germination in various species of *Araucaria*; to the numerous figures of seedling Orchids given by Mr. HARRY VEITCH in his admirable paper on the Hybridisation of Orchids at the Orchid Conference of May, 1885; to the memoirs of M. DUCHARTRE on the germination of Lilies, or that of his son, on the development of the seedling in tuberous *Begonias*. A search through the principal monographs, such for instance, as those of the *Flora Brasiliensis*, would assuredly bring many more interesting examples to light. These and other omissions do not impair the value of what is in its way truly a noble monograph, though modestly styled "a contribution;" and, moreover, they can readily be supplied hereafter.

ROYAL HORTICULTURAL SOCIETY.—The publication in our columns lately of the scheme of examination in horticulture of the Royal Horticultural Society has, we learn, overwhelmed the Secretary with letters, and he is desirous of having it stated that correspondents would facilitate replies, and lessen their cost to the Society, if they would kindly send a ready-stamped and directed envelope with their communications!

THE GARDENERS' ROYAL BENEVOLENT.—The fifty-third festival dinner in connection with the above charity was given on Tuesday evening, November 15, at the Whitehall Rooms of the Hôtel Métropole, Lord BRASSEY, K.C.B., in the chair. His lordship was supported by a large number of well-known professional and amateur gardeners, as well as others who take a practical interest in the welfare of the Society. After dinner, the usual loyal and patriotic toasts having been proposed, Lord BRASSEY gave with great warmth the toast of the evening—"Continued Success and Prosperity to the Gardeners' Royal Benevolent Institution, now in its fifty-third year, coupled with the name of Mr. HARRY J. VEITCH, Treasurer. His Lordship, in the course of his interesting speech

* A Contribution to our Knowledge of Seedlings, by the Right Hon. Sir John Lubbock, Bart., M.P., &c. with 684 figures in the text. Two vols. 8vo. (Kegan Paul, Trench, Trübner & Co.)



THE GARDENS OF THE ALCAZAR, SEVILLE.

said that the main feature of the Society was that, while it administered to the relief of those who were in distress, it sought by every means in its power to inculcate the virtues of providence and economy. At the present time they had 156 pensioners, of whom 79 were men and 77 women, at a yearly expenditure of £2700. He was sorry to tell them that there were 31 candidates waiting to receive the benefits of the institution; he therefore hoped that they would do their best to increase the funds of the society. In urging his hearers to extend their liberality to the fund, his lordship said he might appropriately appeal to their grateful recollections of the happy hours they had passed in gardens. England bore through all its length and breadth the marks of care and skill in its farms, its parks, and pleasant places, and in its innumerable gardens, both large and small. The debt they owed to those by whose labours so many scenes of enchantment had been created was great, and he hoped that debt would be in some degree repaid by their collection that evening. Mr. Harry Veitch, in replying, thanked Lord Brassey for his very enthusiastic appeal on behalf of the Society. The working expenses of the Society had been kept down as much as possible, having been reduced from 25 per cent. in 1888 to less than 13 per cent. Lord Addington proposed "The Royal Horticultural and Botanic Societies of London and the United Kingdom," to which Sir Trevor Lawrence, Bart., replied. The Rev. W. Wilks, M.A., gave "The Stewards and Donors," Mr. H. E. Milner replying in their behalf. The secretary, during the evening, announced subscriptions to the amount of £1,400, including from the chairman 50 guineas; Lord Rothschild, 100 guineas; Mr. Howard Morley, £25; Sir T. Lawrence, 10 guineas; Baron Schroder, 30 guineas; Sir Julian Goldsmid, 20 guineas; and the Skinners' Company, 10 guineas.

COUNTY COUNCIL LECTURES.—MR. ROBERT SMITH, the head-gardener at Kenward, Yalding, Kent, has been chosen for the post of Lecturer on Horticulture, by the Technical Education Committee of the county of Salop. Mr. SMITH is well known as the author of several valuable treatises on fruit growing.

SUPERINTENDENCE OF LONDON PARKS.—At a meeting of the London County Council on the 15th inst., it was resolved that Mr. J. J. SEXBY of the Architects' Office, be made chief officer of the Parks and Open Spaces Sub-Department, at a salary of £500 a-year; and that Mr. NAIRN be appointed chief clerk, at a salary of £400 a-year.

EXPERIMENTS COMMITTEE, KENT COUNTY COUNCIL.—A well-attended meeting took place on Thursday, November 10, at the Horticultural College, Swanley. The proof report of the Potato experiments was read, and during a further discussion upon it, the fact was mentioned that although in these trials treacle and molasses apparently had no effect in retaining the copper-sulphate and lime on the foliage, yet in other experiments sugar had been used for this purpose and had been found beneficial against Potato fungus. Report.—The Secretary reported that in order to test varieties of Strawberries suitable for cultivation in the field for market, five different sorts had been obtained from Canada, sixteen from the United States, and twenty-two from Mr. LAXTON, Bedford, these had been duly planted. The American plants suffered in transit. Referring to the trial of manures on Broccoli: the plots treated with kainit at 3 cwt. per acre, and the nitrate of soda at 2 cwt., were still the best. The Cauliflowers manured with Manchester manure were considered to have given better results than those manured with Peruvian guano. The discussion on fruit evaporating having been resumed, Mr. TILL offered the use of his large evaporator to the College next year, if the committee would supervise trials with it, to test whether evaporation is an economic process of utilising fruit when prices are low. The committee hope before the next meeting to obtain particulars of drying fruit in Hop-kilns, by hot-air and steam.

The following report of the two soils taken for

analyses by Mr. HORACE CHESHIRE was read and explained:—

"Report on Analyses of Two Soils at the Horticultural College, Swanley, North-west Kent, the one lying over the chalk, the other over the Thanet Sands, made by H. F. CHESHIRE, of Hastings, October 20, 1892. No. 1. Is a chalky soil with a very hard chalk subsoil at about 10 inches down. It contains a large quantity of sand, and would of course be benefited by the admixture of clay if practicable. No. 2. Is a very sandy soil, and though it contains a good deal of iron, has that iron in a rather insoluble form, so that it might often be necessary to add soluble iron salts with crops requiring a rapid supply of that substance. Some of the iron also being in a ferrous condition, seems to show the necessity for plenty of tillage. Again, an admixture of clay is desirable. Both soils are very deficient in potash, and containing as they do a rather large quantity of insoluble matter, would be liable to early exhaustion; but I see no reason why both should not be very productive if intelligently treated."

BOTANIC GARDEN, GRANADA.—MR. G. WHITFIELD SMITH's report for the year 1891, a copy of which has just reached us, is an interesting document, as showing the great progress made within a comparatively recent time in the development of the garden which dates only from 1886. It is 15 acres in extent, and is of course largely devoted to the cultivation of economic plants as alternatives for sugar. The island seems specially well-adapted for Coffee-planting, the culture of Pine-apples, Mangos, Nutmegs, and other tropical products.

HORTICULTURAL CONGRESS AT CHICAGO.—The date fixed for this gathering is August 16 and three days following. The Society of American Florists, the American Seed Trade Association, and the American Pomological Society will hold their meetings in the same city during the same month.

DISCHIDIA RAFFLESIANA.—In the days when outward form was more considered than microscopic anatomy, there were few things which attracted the attention of the students of the text-books of those days more than the figure of this singular pitcher-plant, but no one in this country had a chance of seeing it. Now, as we learn from the *Kew Bulletin*, it is in cultivation in one of the propagating pits, and is under the observation of Dr. SCOTT, the Hon. Keeper of the Jodrell Laboratory, from whom in due course we may expect a valuable report.

BELGIAN APPLES.—It is time our Kentish farmers waked up. From Tongres, and from Saint Trond, so we are told by the *Illustration Horticole*, special trains three times a week have been laden with Apples, mostly destined for the English market. Surely the climate of Belgium is not superior to our own.

TRACHELIUM CÆRULEUM.—Writing in the *Journal of Botany*, Mr. J. COSMO MELVILL announces the occurrence in the island of Guernsey, in a naturalised condition, of this plant. It is said to grow on old high walls near St. Peter's Port.

TECHNICAL EDUCATION IN HORTICULTURE.—The Council of the Scottish Horticultural Association having been allocated a portion of the residue grant by the Town Council of the City of Edinburgh, has arranged a course of lectures, to be delivered during the ensuing winter and spring. The scientific and practical aspects of the subjects chosen will be treated of by eminent authorities, and the lectures will be free to all interested in the advancement of horticulture. This being the first time that such a course of lectures has been given in Scotland, and looking to the importance of the subject from a commercial point of view, it is to be trusted it will be well taken advantage of by the general public. Bursaries will be given to successful competitors, who must have attended three-fourths of the lectures, and must be under-gardeners or nurserymen, and approved of by the Council. Intending competitors should intimate such, in writing, to the

Hon. Secretary at the beginning of the session, and not later than December 1.

SYLLABUS.

In Surgeon's Hall, Nicolson Street.

1892: Nov. 23, 30, Dec. 7, 14.—"The Chemistry of Plants and Soils," by Mr. W. IVISON MACADAM, F.R.S.E., F.I.C., F.C.S., &c.

In Dowell's Rooms, 18, George Street.

1892: Dec. 19, 28. 1893: Jan. 4, 12.—"The Structure and Physiology of Cultivated Plants," by Mr. A. N. MACALPINE, Consulting Botanist to the Highland and Agricultural Society.

Jan. 18, 25, Feb. 1, 8.—"The Hybridisation, Selection, and Improvement of Plants," by Mr. JOHN H. WILSON, D.Sc., F.R.S.E.

HARDY FRUITS.

Feb. 15.—Introductory Lecture, by Mr. A. F. BARRON, Superintendent, Royal Horticultural Society's Garden, Chiswick.

Feb. 22.—"Apples," by Mr. DUNN, Dalkeith.

March 1.—"Apricots and Cherries," by Mr. TEMPLE, Carron House, Falkirk.

March 8.—"Peaches and Nectarines," by Mr. FAIRGRIEVE, Dunkeld.

March 15.—"Plums," by Mr. DUNN, Dalkeith.

March 22.—"Strawberries," by Mr. TEMPLE, Carron House, Falkirk.

March 29.—"Pears," by Mr. M'KINNON, Scone Palace, Perth.

April 5.—"Gooseberries, Currants, and Raspberries."

The lectures will commence at 7.30 each evening. Mr. ROBERT LAIRD, 17, South Frederick Street, Edinburgh, is the Hon. Secretary.

PICEA BREWERIANA (see *Gardeners' Chronicle*, April 17, 1886, fig. 93).—Four score years have not sufficed to chill the enthusiasm or curb the enterprise of the veteran ROBERT DOUGLAS, who has been making a trip on horseback over the Siskiyou Mountains to visit the famous Weeping Spruce (*Picea Breweriana*). In a private letter he writes of this tree that, "to appreciate its appearance, one must imagine a Norway Spruce from 100 to 130 feet high, and 3 feet in diameter breast-high, with branchlets set thick together along each branch, and hanging straight down sometimes to a length of 6 feet, although no larger than a lead-pencil at the point where they leave the limb." From a small twig which he kindly sent, the foliage seems to be better than that of the Norway Spruce, not so long, but wider and thicker, and of a lighter and more cheerful green. The cones, before they open, are about as large as a man's middle finger. The seeds are small, although a trifle larger than those of the White Spruce, and Mr. DOUGLAS estimates about 50,000 seeds to the pound. Several persons have tried to collect these seeds, but, so far as we know, Mr. DOUGLAS was the first one to gather them, at least in any quantity. The trees stand on the steep mountain-side, and the cones are all on the very topmost branches of the tree, and more than 100 feet from the ground. In prospecting about this vicinity, Mr. DOUGLAS found a few trees that had not been discovered, so that in this station there are about a hundred full-grown trees. Standing where the snow lies over more than one-half of the year, and where the cold is very severe, they should be able to endure the severest eastern winters, although it is doubtful whether they would stand in a very dry atmosphere. *Garden and Forest*.

COFFEE IN BRITISH HONDURAS.—The climate of this colony would seem to be at least as well adapted to the cultivation of Coffee as that of the neighbouring Republic of Guatemala. Accordingly, the *Kew Bulletin*, which apparently overlooks nothing in the way of economic botany and the development of the resources of our colonies, devotes a long article to the subject. The want of roads, and the deficiency of labour, are at present the chief drawbacks.

THE PRUNE INDUSTRY OF CALIFORNIA.—The *Kew Bulletin* for November contains a full account of the Prune industry in California, with a

coloured figure of the Plum used (Prune d'Agén). Full details are given as to the mode of culture and preparation of the fruit.

CATALOGUES.—As a rule, it is obviously not possible for us to do more than announce the fact that a particular catalogue has been published. Occasionally special reasons render a fuller notice desirable, and we now beg to mention as worthy the attention of importers, J. P. ABRAHAM'S Catalogue of Tropical Plants, Seeds, &c., Colombo, Ceylon; the descriptive Catalogue issued by the Yokohama Gardeners' Association, 21, Nakamura, Yokohama, and the Catalogue of the Native Plants of the Southern Alleghany Mountains, Harlan, Kelsey, Linville, North Carolina. All these contain plants not usually met with in trade lists.

"FANCY BEDDING."—Visitors to the Great Exhibition at Chicago next year will, in all probability, have the opportunity of seeing some choice specimens. Judging from some recent illustrations, our Yankee friends whip creation in the construction of these "fancy beds." For excruciating atrocity we have seen nothing to compare with some specimens figured as adorning (?) some of the parks in Chicago. Evidently there is a large public even for such things. Our own parks still show it.

MR. BLAIR.—We learn that Mr. BLAIR, gardener to the Duke of SUTHERLAND, has reconsidered his decision, and will remain as Head Gardener at Trentham, instead of becoming landlord of the Trentham Hotel, as he had intended. The present Duke and Duchess are both great lovers of flowers, and will probably take a great interest in the gardens at Trentham, which will soon vie with the Trentham of former years.

CERISE À COURTE QUEUE—SHORT-STALKED CHERRY.—Under this name, M. BURVENICH figures and describes in the *Bulletin d'Arboriculture, &c.*, for October a Cherry. It is like the Flemish Cherry, and is, we are told, largely grown for market purposes in Belgium. Large quantities are sent to Paris and to London, as well as to the Belgian and Dutch sea-side resorts in August. Dr. HOGG, in his invaluable *Fruit Manual*, ed. 4, p. 207, adopts the name Gros Gobet for this variety, and adds a string of French and German synonyms. This list of aliases, as well as the statement of M. BURVENICH that he finds slight differences between the French and the Belgian forms, enable us to reconcile the conflicting statements as to quality and date of fruiting, for, while M. BURVENICH lauds it as very agreeable, "raffaichissant," Dr. HOGG says it is only fit for preserving. M. BURVENICH speaks of the tree as very productive, suitable for cultivation in private establishments and for markets; whilst Dr. HOGG says, "The tree is an indifferent bearer, and on that account is almost out of cultivation." We have no doubt both authorities are right from their own standpoint. The discrepancy, however, shows the necessity for accurate illustrations, or better still, models. In botany, it is generally possible to verify synonyms by comparison with authentic specimens preserved in herbaria; but in pomology this is much more difficult, as specimens are rarely preserved, and the identification of synonyms is, for the most part, pure guess-work. Some one starts the conjecture with more or less plausibility, his successors adopt the suggestion, often without acknowledgment, and next to never with any independent attempt at verification, even where it might be possible. Synonyms are a great burden in botany, but at any rate a monographer takes every possible pains to verify the references he quotes by a comparison of all available material; if he does not, he is not conscientious, and his fellows know what estimate to put upon his work. A series of plates of selected varieties, authenticated by a congress of pomologists, would be a great boon, and as only a select few varieties need be thus illustrated, such a work ought not to be beyond hope of realisation. The *Herefordshire Pomona* is altogether admirable, so far as it goes, but it is not everyone who can

indulge in the purchase of so costly a work. Meanwhile, it may be consulted in the Lindley Library.

THE PRODUCTION OF HOPS.—The table shows the estimated total production of Hops in the years 1892 and 1891, with the acreage and estimated average yield per statute acre, in each county in England in which Hops were grown:—

COUNTIES.	Estimated Total Produce.		Acreage.		Estimated Average Yield per Acre.	
	1892.	1891.	1892.	1891.	1892.	1891.
	Cwts.	Cwts.	Acres.	Acres.	Cwts.	Cwts.
BERKS	65	77	10	11	6 50	7 00
GLOSTER ...	206	130	39	25	5 28	5 20
HANTS	17,221	13,793	2,775	2,749	6 21	5 02
HEREFORD ..	45,213	44,170	6,797	6,560	6 65	6 73
KENT	258,431	271,347	34,058	34,266	7 59	7 92
NOTTS	35	20	14	14	2 50	1 43
SALOP	646	577	117	112	5 52	5 15
SUFFOLK ...	5	118	18	20	0 28	5 90
SURREY ...	9,025	14,212	1,938	1,955	4 66	7 27
SUSSEX	61,170	67,861	7,124	7,150	8 59	9 49
WORCESTER ..	21,239	24,411	3,369	3,280	6 30	7 44
Total...	413,259	436,716	56,259	56,142	7 35	7 78

Note.—As the above preliminary estimate is issued at the earliest possible moment after receipt of the particulars, it is necessarily subject to correction in the Annual Produce Statistics. *Board of Agriculture, November, 1892.*

OXFORD BOTANIC GARDEN.—The question—Who was the first curator or head-gardener?—has again arisen. By some the elder TRADESCANT is supposed to have held the office. In reference to this opinion, we cite the following passage from INGRAM'S *Memorials of Oxford*, vol. iii., Art. "Botanic Garden":—"After the completion of the walls and archway in 1633, the garden is said to have been stocked with various medicinal plants; and JOHN TRADESCANT, the Elder . . . was appointed gardener. It is not certain, however, that this individual ever actually accepted the office, or took up his abode at Oxford in consequence; at any rate, his services there were of short duration, since he died in the year 1638, within six years from the establishment of the garden." We think the question may be set at rest by the record on the monument to BOBART in the churchyard of St. Peter-in-the-East, Oxford, and cited in DRUCE'S excellent *Flora of Oxfordshire*, p. 374. We quote sufficient for our purpose:—

To the Pious Memory of JACOB BOBART,
A native German,
A man of Great Integrity,
Chosen by the Founder to be Keeper of the
Physic Garden.
He died, Feb^y the 4th, 1679, in the 81st
Year of his Age.

A NEW BELGIAN CHRYSANTHEMUM SOCIETY.—A society has just been founded in Brussels, under the title of the Société des Chrysanthémophiles. The work undertaken by it, the promotion of knowledge concerning the culture, propagation, hybridisation, diseases, and insect-foes of Chrysanthemums. The President is the well-known amateur, M. F. DE LOMBAERDE; the Secretary, M. FRANÇOIS PEETERS.

TEA FROM NATAL.—We duly chronicled the fact at the time when last season South African tea was offered at Mincing Lane, that some 12,000 lb. from Natal had found purchasers at what we supposed was a remunerative price. Whatever the nett receipts by the producers, it has given encouragement sufficient to warrant a more heroic effort for the season now coming on, for we learn, on the highest authority, that over half a million—590,000—pounds of tea will be offered in London for public competition. We do not hear that any improvement has been effected in curing the leaf, the necessity for which was pointed out at the time, and as this is stated to have affected the price paid at

the sale, one would have thought the experience paid for would have had a different result. They are easy-going folks in the colony—whose jubiles will be celebrated next year—but things might be made even more easy than they are if just a trifle more enterprise were shown in these early days of tea marketing.

BONES AS A BUILDING MATERIAL.—The following interesting letter occurs in the *Builder* of the 5th inst.:—"In the Churchwardens' account of Kirkby Wharfe, Yorkshire, for 1704, is an item for 'Sheepshanks for hanging ye tiles, 2s. 6d.' They were cut into pegs, and would be everlasting; some were found in their places in 1860. I cannot get a sight of any, but I have reason to think that their use was common. What is known of this material? In PETER KALM'S account of his visit to England in 1748, this Swedish observer describes walls or fences in common use near London to separate meadows, market-gardens, &c., built of the cores of ox-horns, to each of which was attached part of the skull. In the best work they were put in layers as close as they could be packed, the points inwards; a 6-inch layer of earth was put between each layer of cores. The length was 4 feet, and the width the same. This disciple of LINNÆUS notes half-a-dozen plants, such as *Convolvulus* and wall Barley, that covered the top. Slighter fences tapered to a narrower top. Are any such fences remembered? KALM also notices that these cores were carted out on the high roads and there spread, earth and sand being laid on them, which made the road firm and durable. Is our term, 'hard core,' applied to clinkers, &c., a survival from this use? KALM saw where a gentleman had set the leg-bones of oxen and horses in the ground as edges to his flower-beds, sticking them close together, the transversal end downwards and the round curled end upwards (to keep the earth from rolling down on the path), as he had seen also near Moscow. Here is a fresh item, I think, for the formal garden. The grotto in Wanstead Park (recently burnt out) was paved with sheep-shank bones, laid in patterns—conducive to corns, one would expect; but they would tally with the ornamental pavements of small round pebbles, common in old summer-houses, but now amongst the lost arts. Bones, and particularly those which, like the cores, were not used in manufactures, would accumulate; but when their use in manure or in chemical works became known, they would cease to be applied to road-making and fencing.

"THOS. BLASHILL."

NEW PUBLICATIONS.—*The Great World's Farm.* By SELINA GAYE (SEELEY & Co.).—*Naked Eye Botany.* F. E. KITCHENER (PERCEVAL & Co.).—*Beneath Helvellyn's Shade.* SAMUEL BARBER (ELLIOT STOCK).—*Horticulturist's Rule Book.* L. H. BAILEY (New York Rural Publishing Co.).—*Introduction to the Study of Botany.* DENDY & LUCAS (Melbourne and London; MULLEN & SLADE).—*Animals' Rights.* H. S. SALT, (BELL & SONS).—*A Contribution to our Knowledge of Seedlings.* Sir JOHN LUBBOCK, 2 vols., 8vo. (KEGAN PAUL & Co.).—*Handbook of the Iridæ.* J. G. BAKER. (GEORGE BELL & SONS.)

HOME CORRESPONDENCE.

OXFORD, AND ITS GARDENS.—I read with interest your article at p. 551 on "Oxford, and its Gardens." I fully agree with all your correspondent says respecting the dilapidated state of the Botanic Garden, but surely he cannot lay it all at the door of the University. I visited the garden lately, and noticed with regret the "assortment" of plants there cultivated. On every hand plants of *Dianthus caryophyllus* in variety met the eye; *Viola tricolor* in variety also were largely represented. I have always been under the impression that a botanic garden is kept for the sole purpose of studying botany and learning, but the plants above-named can be studied in any private garden in the kingdom. Fully one-third of the plants outside are without labels, and on some of the labels the names are quite illegible, on others partly obliterated. There are also a great

many labels without a plant, or even an apology for one, behind them. I was told on my first visit that the public were not admitted to the houses, but from what I could discern by looking through the glass, they compared very favourably with the outside show. I noticed a good stock of mealy-bug in the house devoted to the Cacti. I thought it a great pity that such a good collection should get thus. In another house, Tomatos were strongly represented in number, though growing weakly. Your correspondent "Tradescantia" says the "Dons" are thinking of doing away with the garden. Perhaps they, like myself, have noticed the great tendency there is to grow common garden plants instead of botanical specimens. A well-ordered and kept garden is always a thing of pleasure, but who would be troubled to keep a bad one. I am making these few remarks on what I myself observed, and I hope there will be something done before long for the sake of men who, like myself, go there hoping to see something interesting, but who come away disappointed. *Botanist.*

THE CURARE POISON OF THE SOUTH AMERICAN INDIANS.

Concerning this poison, lately referred to in the public press, on the subject of vivisection, I take the liberty to make a few remarks, having lived and travelled for a number of years among various of the Indian tribes who made and employed it in hunting. Curare, called by some of the tribes, urary, is prepared from a climber, a species of *Strychnos*, tobacco leaves, and the strongest or hottest *Capsicum* fruits that can be procured. Portions of these plants are bruised, and put into a large earthenware pot, with water which on boiling, is set down and allowed to macerate for several days beside the fire. The contents are then strained and pressed, and the remaining watery solution is slowly boiled down until it acquires a thick consistency, when on cooling, it becomes firm and black, and looks like a piece of shoemaker's wax or opium. Exposure to the air for any length of time is thought to diminish its active properties. The Indians, therefore, without delay, make it up into little balls about the size of a rifle bullet. Each of these is then rolled up in leaves and put into a jointed bamboo, which is carefully stopped, so as to exclude the air. There is no doubt various tribes add other plants besides those just noted, whilst the method of preparation may vary in some respects. A branch of the warlike tribe *Paez*, inhabiting the Eastern Andes, among whom I lived for some time, included besides those plants already mentioned, a *Pentstemon*-like plant, locally known as the "Guambia poison," a plant possessing a powerful principle; it was said that if a single dried powdered leaf was given to a dog, "it would never bark again." The plant is met with in shady forests, and belongs to the same order as the *Strychnos* family, *Loganiaceæ*. On passing through the city of Quito, I gave dried specimens of it to the late Dr. Jameson, then Professor of Botany at the University there, who earnestly desired it for the use of his botanical class. The curare is applied by merely holding it for a few moments near to the fire to soften it; the points of the arrows are then turned in it, and placed in a sort of sheath. When a parrot or other large forest bird is pierced by an arrow from the blowpipe, it gives a momentary shiver, and comes down like a clod. The same sometimes happens with a monkey, though it frequently takes two or three arrows to bring this animal to the ground. Even then it may not be dead, though, of course, it is perfectly powerless. I constantly noticed that the appearance of the eyes of the monkey when not dead seemed to indicate some sort of painful suffering or wretchedness, and on one occasion I called the attention of the blowpipe Indian to this circumstance. His only reply was two or three swift blows to the unfortunate animal, which of course, killed it at once. The way in which those Indian tribes have learned the uses of certain plants has been ascribed to their possession of a sort of instinct. It may, however, be assumed that the knowledge possessed by them of the medicinal and other properties of plants specially suited to their wants has been handed down by the early widespread nations which at one time must have peopled many districts of South America, whose ruined Cyclopean towers, temples, and other buildings now overgrown by dense forests are older than the pyramids. *Robert Cross, Victor Park, Corstorphine.*

THE PROPOSED EXAMINATION IN HORTICULTURE.—I have found in the districts which I have worked so far in the county of Surrey, considerable interest evinced in the proposed examinations in

horticulture, which the Royal Horticultural Society will hold next May. It is commonly said "We hope to present a few candidates," and I have urged any such that may propose to sit, to utilise all their spare time between now and next May to work up theoretical knowledge from books, as with the insight into various aspects of gardening which lectures have presented, there ought to be found in books very much more of interest than there would otherwise have been. It is a pity that for the purpose named we have not a series of text books that are cheap, and therefore easy of access to all intending candidates. Books that range from 1s. to 2s. 6d. each, if of really authoritative character, would be doubtless largely purchased, but it is useless to expect that ordinary attendants at technical education lectures, or members of gardeners' or similar associations, can obtain books, ranging in value from 5s. to 25s., and in how very few instances are such books available in libraries, even if the libraries were accessible. Take vegetable culture, for instance: books like Vilmorin's *Vegetable Garden*, Sutton's *Vegetable Culture and Enemies*, Shaw's *Market Gardening*, &c., are all too costly for the rank and file of intending candidates, and very cheap books are hardly worth purchasing, except when they treat upon some special topic, such as Mushrooms, Tomatos, &c. Gardening, too, is such a progressive science that a book ten years old, so far as relates to practice and varieties, seems to be getting out of date. Of course, the principles on which sound practice is based remain the same, but practice differs materially as time rolls on. The difficulty which presents itself in regard to the recommendation of suitable books to candidates, that are not too expensive, is considerable, and would be well could it be overcome. *A. D.* [We trust our correspondent will not continue to recommend his pupils to "work up theoretical knowledge from books." This is most undesirable, and we hope and believe the examiners will do their duty, and discourage all such useless cramming. If by theory our correspondent means reasonable explanation of the structure and uses of plants, and of the operations connected with their cultivation, then, by all means, let him counsel the reference to books as exponents of practice, but not otherwise. *Ed.*]

AUTUMN-SOWN PEAS.—I notice a correspondent, p. 586, holds forth on the merits of autumn-sown Peas. I have for the past few years been an advocate for spring sowing in preference to autumn sowing, as it does away with much labour and anxiety, and in the end there is a better crop. I know there are many growers who adopt autumn sowing, and I believe many more who do not sow till spring. For instance, from a sowing made upon a south border on January 27, of English Wonder and Chelsea Gem, we picked Peas on June 8 and 13 respectively, and had good crops of them; whereas some Peas were sown in another garden close by early in November, and from a few ragged rows these were gathered on July 13. This result had been achieved after several hours spent in slug catching, &c., spreading wood-ashes and soot along the rows after almost every heavy rainfall. We on the other hand, were saved all this trouble by not sowing till spring. It may be that Peas sown in the autumn may do better upon soils of a somewhat lighter description than ours, which is very cold and heavy. Nevertheless, our Peas do well, and we can grow them good enough for exhibition anywhere; and so long as Peas can be gathered early by spring sowing, we shall not fall back on autumn sowing. It is found that for early Peas much strong manure is not required, a good dressing of wood-ashes or burnt refuse being better fertilisers, and not causing rank growth but sturdy haulms; and after the crop is cleared off, the plot of ground is good for Tomatos, Lettuce, or Horn Carrots. *W. A. C., Compton Bassett.*

COMMON GARDEN INSECTS.—Your correspondent should take a course of lessons in economic entomology before he ventures to instruct others. We read with reference to the winter moth:—"In spring the grubs are hatched, and at once attack the young buds, calyces, &c. They become mature about November, or a little earlier, and let themselves down to the ground, and, burrowing to some little depth, become chrysalides (*sic*), turning into moths before spring arrives." As a matter of fact, the grubs (*larvæ*) become mature about May or early in June, and, having let themselves down, enter the earth, and remain there many months as chrysalides (*pupæ*), the perfect insects continuing to emerge all through the winter from November to February (or even March) in mild weather. The grease bands should be applied con-

tinuously during this period. What their use would be in April and May, so far as the perfect winter-moth is concerned, I know not; they might then detain a few full-fed *larvæ*, descending by the stem for pupation, but very few, because the majority descend by means of a silken thread. The genuine life-history of the winter-moth has been often detailed in the *Gardeners' Chronicle*. *R. McLachlan.*

RAINFALL IN NORTH WALES.—There is surely a misprint or mistake in the paragraph under this head on p. 594, which gives the rainfall for October at Mostyn Hall as 44 inches. The error could not mislead any one accustomed to rain statistics, but if not corrected, it might mislead those who are less experienced. The actual rainfall was "exceptionally large," but in the coast district of North Wales was about one-fourth of the amount mentioned above. At Colwyn Bay a careful observer measured 10.32 (10 inches and 3-10ths), the largest amount for October ever known there. At Llandudno the fall was an inch or two less. At mountain stations like Llanberis and Capel Curig it might possibly have been twice as much, but even there a total of 44 inches for one month is an unrecorded amount. *C. W. D.* [We have received our correspondent's correction of the statement, which should have read "7.44 inches." *Ed.*]

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 15.—During wet and dirty weather, on Tuesday last, the show at the Drill Hall, James Street, Westminster, was but poor. Amongst the most interesting exhibits were some hybrid Orchids, some new varieties of Chrysanthemums, and a large collection of Ferns.

Floral Committee.

Present: W. Marshall (chairman); and Messrs H. Herbat, B. Wynne, C. T. Druery, C. F. Bause, G. Phippen, C. J. Salter, H. Cannell, C. Jeffries, G. Paul, C. E. Pearson, J. Fraser, W. Furze, W. Bennett-Pöe, and H. H. D'Ombrian.

For the prizes that had been offered for groups of Chrysanthemums, only one entry was made, and that in the class for a group from which Pompons and singles were excluded. Mr. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, staged a very creditable collection, and was awarded 1st prize. Messrs. Jas. Veitch & Son, Chelsea, had three dozen large blooms of Chrysanthemums, the best of which were *Etoile de Lyon*, *Vivand Morel*, *Jeanne Delaux*, *Mr. E. W. Clarke*, *Avalanche*, *Florence Davis*, and *Mdlle. Marie Hoste*. Also *Begonia decora*, which at the last meeting was shown under the name of *B. barbata*, but which has since been determined a new species; it is a pretty dwarf-growing plant, with exceedingly ornamental foliage; the leaves are velvety-purple, with greenish-yellow veins, and very hirsute. It was awarded a First-class Certificate.

Messrs. J. R. Pearson & Sons obtained Awards of Merit for Chrysanthemums *Robert Flowerday*, a large wide-petalled incurved Japanese, rosy-crimson, with silvery-lilac reverse; and for Mrs. Needs, a good Japanese, large and full, white, with rosy-violet blush.

Wm. Seward, Esq., Hanwell, W. (gr., Mr. Shrimpton), an Award of Merit for *Princess Victoria*, a very deep and large Japanese, with yellowish centre.

Mr. C. E. Shea, The Elms, Foot's Cray, Kent, exhibited *Miss Dorothy Shea*, a large pale red Japanese reflexed, with buff reverse (Award of Merit).

A creamy sport from *Empress Eugénie* came from Mr. E. Molyneux, Swanmore Park Gardens.

Mr. Robert Owen, Maidenhead, exhibited a chestnut-red incurved sport from *Violet Tomlin*; Mr. J. Dibbans, Breakspare Road, Brockley, had Seedlings *Amy Chantler*, white Japanese, Duke of York, an incurved Japanese, rose, with silver reverse; and *E. Hillyer*, an incurved crimson, with pale yellow reverse.

Martin Smith, Esq., The Warren, Hayes Common, Beckenham (gr., Mr. Blick), obtained an Award of Merit for a very fine and bold Japanese of pale yellow; and Messrs. Cannell & Sons, Swanley, an Award of Merit for *Lord Brooke*, an incurved Japanese, of good promise: colour, a dark chestnut; and for *Aida*, an incurved Japanese, pale rose, with yellow or cream reverse. Messrs. Cannell & Sons had also a stand of good flowers of many of the newer and best kinds.

A very fine show of zonal Pelargoniums, which

served to illustrate the lecture, were exhibited by Messrs. Cannell, in bunches composed of several trusses, and staged over growing moss. The colours were exceeding bright and charming, the varieties new and the best out, viz., scarlet—Bright Eye, Sunray, Lord Iddeleigh, W. P. Wright, Rev. H. Harries, and Chas. Dickens; white—Swanley Single White and White Lady; pink—Amphion and Mrs. Wildsmith; salmon—A. F. Wootton, Mascagne, Beauty of Kent, and Inverness. Maud of Wales is a pink with a bluish cast; Madame Melba, a pretty blush, and Madame Boudeville, the most charming of all the blush section, having such delicate petals, with rosy margin (Silver Banksian Medal).

Mr. Wythes, Syon House gardens, was awarded a Silver Banksian Medal for a collection of Chrysanthemum blooms, cut with stems and foliage; the best were Etoile de Lyon, Val d'Andorre, Mr. Bunn, Empress of India, and Madame Faber.

A very large and fine collection of Ferns, occupying almost the whole of one side of the hall, was shown by Mr. H. B. May, Dyson's Lane Nursery, Edmonton, and consisting of 270 species and varieties. Adiantums were represented by about forty of the most distinct species and varieties. Amongst the Pteris were some new varieties which recently obtained Awards, viz., P. v. nivalis, P. tremula variegata, and P. regina cristata. Amongst the Nephrolepis, N. davallioides multiceps is a very distinct and good form.

Gymnogrammas, both crested and plain, were represented, and in gold and silver varieties, also some of shades between the two, showing how difficult it is to divide the two sections. Platyceriums and Selaginellas were also represented (Silver-Gilt Flora Medal).

A basket of bunches of Violets Marie Louise were sent by Mr. J. Miller, gr. to Lord Foley, Ruxley Lodge, Esber, the perfume of which was an agreeable addition to the attraction of the exhibits.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair, and Messrs. J. O'Brien, S. Courtauld, T. B. Haywood, W. H. White, and E. Hill.

Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), exhibited a fine plant of a selected variety of *Cypripedium Morganianum* Burfordianum, which was pronounced to be the best *C. Morganianum* yet shown (First-class Certificate). From the same gardens came a spike of *Calanthe sanguinaria* ×, with flowers of a deep crimson; and the handsome *Cypripedium pavonium* × (*Boxall* × *venustum*) Welbore T. Ellis, Esq., Hazlebourne, Dorking, showed a beautifully spotted form of the rare *Catasetum tabulare*, in which the raised middle of the labellum was white spotted with reddish-brown (Award of Merit). Messrs. Jas. Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, staged some interesting hybrid Orchids, of which their *Cypripedium Tityus* × (*Spicerianum* ♀, *cananthum superbum* ♂) is very interesting as being a hybrid of several descents, *C. cananthum superbum* × being *Harrisianum superbum* ♀, *insigne Maulei* ♂, and *Harrisianum superbum* × the result of crossing *barbatum* and *villosum*. The flower of the plant exhibited possessed all the good qualities of *C. Leeanum*, but all the parts are broader and rounder (First-class Certificate). Another interesting hybrid shown by Messrs. Veitch was *Laelio-Cattleya aurora* × (*Laelia pumila* Dayana ♀, *C. Loddegeana* ♂). The plant somewhat resembled *Cattleya Acklandiae* in growth, having two leaves to most of the pseudobulbs. The flowers retained much the form of *Laelia pumila* Dayana, but were larger, and with a greater expansion of the labellum (Award of Merit). From the same nursery came *Cypripedium Perseus* × (*Sedeni porphyreum* ♀, *Lindleyanum* ♂), one of the first crosses with *C. Lindleyanum*, and a beautiful thing, with large rosy-crimson and white flowers (Award of Merit), and *C. Crethus* × (*Spicerianum* ♀, *Argus* ♂).

Messrs. F. Sander & Co. had a small group of fine Orchids, of which *Cattleya labiata albanensis*, a noble, richly-coloured form of their importation of the true autumn-flowering *C. labiata*, with nine flowers (Award of Merit); *Cypripedium Leeanum giganteum* × and *C. L. excellens* ×, each with six flowers; *C. × E. Ashworthii* (*plumerum* ♀, *Spicerianum* ♂), *C. × G. S. Ball* (*Spicerianum* ♀, *Lawrenceanum* ♂) were remarkable exhibits. Messrs. Sander also sent the greenish-white *Aërides Balfouri*, *Odontoglossum Rossi* albens, &c.

Messrs. Hugh Low & Co., The Nurseries, Clapton, E., had a group of Orchids, in which were several remarkably fine *Cypripedium bellatulum*, *C. Arthur-*

ianum ×, *C. Chamberlainianum*, *C. insigne Mooreanum*, several of the rare *Saccolabium bigibbum*, *Vanda Amesiana*, *V. Kimballiana*, *Oncidium tigrinum*, &c.

Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N., had a small group, in which their fine form of *C. Pitcherianum* was prominent, which seems to improve each time it is shown, the centre being occupied by a very richly-coloured form of *Cymbidium giganteum*.

C. J. Lucas, Esq., Warnham Court, Horsham (gr., Mr. Duncan), sent two forms of *Angraecum bilobum*, the one with a lax and the other with a dense inflorescence, and a flower of one of the rose-tinted forms of *Cattleya aurea*.

From the gardens of Earl Cowper, Panshanger, Hertford (gr., Mr. Fitt), came four well-flowered plants of the old form of *Cypripedium insigne*, which had some of the lower sepals divided, and in others the petals were tipped with white. A fine spike of *Cattleya Harrisii* (*guttata Leopoldii* × *C. Mendelii*), which was Certificated in 1888, was also exhibited by T. Statter, Esq., Stand Hall, Whitefield, who showed a spike of a grand variety of *Cattleya labiata vera*, with six flowers on a single spike—perhaps the best example of this useful and showy Orchid which cultivation has produced.

Messrs. John Laing & Son, Forest Hill, exhibited a finely-formed spotted variety of *Odontoglossum crispum*; and Reginald Young, Esq., Linnet Lane, Sefton Park, Liverpool, sent a spike of *C. labiata*, Young's variety, a beautiful form, with segments crimson-tipped, the upper sepal and upper halves of the lower sepals being petaloid and much broader than usual. The committee desired to see it again, to test its constancy. It came, it was stated, out of Messrs. Sander's importation.

Fruit Committee.

Present: Philip Crowley, Esq. (in the chair), Rev. W. Wilks, Dr. Hogg, H. Balderson, F. Q. Lane, J. T. Saltmarsh, G. Taber, A. Dean, G. Bunyard, G. Wythes, and J. Wright.

A collection of Melons, consisting of 2 dozen good-sized fruits, was exhibited by Mr. Wythes, gr. to the Duke of Northumberland, Syon House, and received a Bronze Banksian Medal.

Mr. J. Miller, gr. to Lord Foley, Ruxley Lodge, Esber, showed a seedling Melon of good flavour for the season, which the committee preferred to see again; fruit smooth and deep yellow. Also a large dish of Brown Turkey Figs, being the second crop from a house. The fruits were quite ripe and of good flavour (Vote of Thanks).

From Mr. Gilbert, Burghley Gardens, Stamford, came a number of Tomatos, Gilbert's Satisfaction, a nice smooth medium-sized fruit.

Mr. G. Brawn, Walsall, and Mr. C. Fidler, Reading, sent dishes of Potato, "Fidler's Colossal," for Certificate. The committee gave instructions to have the specimens cooked, for testing at the next meeting. The tubers are exceptionally heavy and large.

Mr. Philip Crowley brought some Plums (*Rivers' Prolific*) that he had dried in an ordinary oven, and after being soaked for some time, partially stewed. The fruit had been put into the oven when the fire had been allowed to wane, and the result was equal to the now well-known method of evaporating and drying fruits in quantity (Vote of Thanks).

ZONAL PELARGONIUMS FOR AUTUMN BLOOMING.

In the afternoon, a lecture on this subject was delivered by Mr. Chas. Pearson, of Chilwell Nurseries, near Nottingham. Mr. Pearson, in commencing, said, that it had appeared likely that this class of plants would entirely lose favour through the way in which they had been used during the bedding-out fever. They had happily been saved from this threatened disaster by skilful cultivation, which had proved them to be excellent flowers to grow in the duldest months of the year. Their chief recommendation for this season was, that the colours which had been declared too gay during summer, were better appreciated in dull and wintry weather, acting in some cases like a tonic upon those inspecting them. The objections generally urged against them applied much less in the autumn months, and could be greatly minimised, if the blooms were to be sent to a distance, by careful packing, and by using a little gum to secure the petals.

In selecting varieties, the lecturer advised that not too many of the vivid scarlets, such as *Vesuvius*, be retained, as some of them in bad weather often—unless under the best culture—fade into a bad colour. Charles Smith, Mr. Pearson said, was the best of this section to retain its colour. He would also suggest that but few doubles be selected, there

being but few of this group worth the trouble they entail. There was now such a wide range of colour, such a number of different varieties, which, although so varied, yet thoroughly harmonised one with the other, that it was a disgrace to any place where the culture of the Pelargonium was attempted, if only a few of the old common varieties were to be found.

If fair-sized specimens were wished, the cuttings should be inserted in the previous August, but for smaller plants they need not be put in until spring. They should be put singly into thumbs, and when struck, potted into 3-inch, being transferred in June to their final shifts, which should be 5 or 6 inch. When the operation has been effected, the plants should be stood in the open upon some favourable situation, and the summer treatment would consist of pinching the strongest shoots, and of giving water as carefully and judiciously as possible. During the summer no stimulants should be given, as they would be sure to make sufficiently-atrong growth in a proper compost. It was very important that the plants be again housed before the heavy autumn rains, or many of the finer roots would decay, the soil become soddened, and failure would be the inevitable result. If the houses are not ready, some frame lights might be made to form a little accommodation until hard frost made their removal to the house imperative. When taken in they should be given ventilation freely until they have become accustomed to their closer quarters, and judicious watering would again be necessary for successful culture. This should be done in the morning, and care taken to prevent spilling any upon the stage or floor of the house. Pinching should be finished about six weeks before it is required they should bloom. The house most suitable for the Pelargoniums, Mr. Pearson said, was a low span-roofed erection. Its aspect should be north-east and south-west, which would secure the fullest benefit of what little morning sun was able to pierce our clouded atmosphere at this season, and the afternoon sun was not worth consideration. In fog-cursed districts it would be imperative that all glass should be thoroughly washed, and, also, in less unfavourable districts it would be wise to give attention in this direction. Mr. Pearson thought that there was little to choose between prepared beds or benches upon which to stand the plants, but about the temperature a much more decided opinion was entertained. It should not fall below 50°, and if 5° higher it would be so much the better. In the day the temperature should be 60°, rising 5° with sun. One of the most important points in the culture of these plants was that the temperature was right and kept uniform. If exhibition blooms were desired, the lecturer said that the shoot should be pinched immediately beyond the bud. In some of the double varieties this operation was a necessary part of ordinary culture. Mr. Pearson then went on to say that the compost he used was formed of rather light turf—that had been previously stacked, with linings of cow-manure—and a little sand. He believed that leaf-soil was very prejudicial to the culture of these plants, and he never used it.

The lecturer then concluded with a plea for more extended culture, for autumn-blooming, at the same time setting forth the advantages and attractions they offered; but Mr. Pearson was careful to say that he could not conscientiously advise the buying of Pelargoniums where there was not sufficient glass to give them a place to themselves, unless they were accorded just the treatment they required in the house they had to share. To buy a plant or two in autumn, and place them in a greenhouse amongst a miscellaneous lot of plants, would only result in disappointment; and it would only be courting failure also to put them into a kind of house that Mr. Pearson preferred to call an "architect's slaughter-house."

In the discussion which followed, some excellent remarks were made by Mr. H. Cannell, who exhibited some of the finest specimens of culture to illustrate the subject.

STROUD, GLOUCESTERSHIRE.

NOVEMBER 3, 4.—This was a thoroughly representative show, not only of Chrysanthemums but of other autumn flowers, as well as a large display of fruits, and a fine lot of vegetables. There was, as regards quantity, a falling off as compared with last year in Chrysanthemums, but the quality was good; the incurred blooms alone wanting more time to develop, showing that the backward season for this section is pretty general.

Groups and Specimens.—The groups made a fine display, the best being those from Mr. J. F. Wilkin-

son, gr. to Mrs. Frith, and Mr. R. Fawkes, gr. to Chas. Hooper, Esq., these two groups very nearly approached each other in merit, both containing well-grown plants, bearing fine flowers; both, however, lacked finish around the outer edge, pots and sticks being too conspicuous. Smaller groups were well-shown by Mr. T. Smith, gr. to G. J. Holloway, Esq., and by Mr. Birt. Trained plants were in some instances remarkably good, particularly the standards, the best three being those staged by Mr. G. Bastin, gr. to Mrs. Geo. Holloway, the varieties were Mrs. Dixon, George Glenny, and Elaine. Dwarf-grown plants from the same grower were by far the best, of medium size but well grown.

Cut Blooms.—In the large class for forty-eight distinct, twenty-four each of incurved and Japanese, Mr. A. J. Driver, gr. to Mrs. Davies, was 1st, being well ahead in each section. Amongst the Japanese were fine blooms of Thunberg, Comte de Germiny, Roi des Japonais, and Viviani Morel, in excellent character, with first-rate flowers of John Doughty (extra fine), Lord Wolseley, Mrs. S. Coleman, Robert Cannell, and Enamel in the incurveds. Mr. R. Fawkes was a good 2d; Florence Percy and Eynsford White both being prominent flowers.

For thirty-six varieties, Mr. C. Mayo, gr. to A. Apperley, Esq., was 1st, having Sunflower (extra), Edwin Molyneux, and Thunberg, all in good form. Mr. J. E. Wilkinson also showing well, having a very fine flower of Stanstead White.

For twenty-four varieties, Mr. A. J. Driver again won with another excellent stand of flowers; Louis Bohmer amongst others being conspicuous. Mr. Butcher, gr. to W. Davies, Esq., also showing well.

With twenty-four blooms not less than eighteen varieties incurved, Mr. C. Mayo was again placed 1st, besides other good flowers previously named he had Miss Haggas, very bright. In the corresponding class for Japanese, Mr. A. J. Driver once more won, and that with very superior flowers, Golden Dragon, W. H. Woodcock, and Louis Bohmer, being all first-rate. Mr. E. Butcher was 2d with bright flowers, rather smaller than those in the first prize stand. Smaller classes were very well filled.

One class deserving particular notice was that for trebles of four vars. Japanese; in this, Mr. A. J. Driver won easily with grand-flowering Stanstead Surprise, Avalanche, Sunflower, and Edwin Molyneux, all of uniform size, the colours contrasting well. Mr. W. Driver was 2d in this class. In the corresponding one for incurveds, Mr. E. Butcher won with Jardin des Plantes, Prince Alfred, Jeanne d'Arc, and Mrs. Dixon; Mr. A. J. Driver following.

For six blooms of one var., Japanese, Mr. A. J. Driver won with Viviani Morel, large, and of fine colour, and again with six incurved, with Miss Violet Tomlin, staging very superior blooms.

For vases of Chrysanthemum blooms arranged for effect, Mr. A. King, gr. to E. Apperley, Esq., was 1st, the flowers of medium size, but the effect excellent; Mr. Bastin following closely, but the arrangement a trifle too compact.

Fruits.—The Grape classes were particularly strong, and the competition keen. For four vars., Mr. E. Butcher was 1st, showing Muscats, Alicante and Gros Maroc, with another white, bearing a close resemblance to Chasselas Musqué.

The Alicante class was a strong one, Mr. W. Driver, gr. to A. T. Playne, Esq., being 1st, with highly-coloured and large bunches. Muscats from the first-named exhibitor were placed 1st, likewise for any other white, with Trebbiano.

Apples and Pears were shown in capital condition, the entries being large. Mr. C. Mayo and Mr. A. King taking 1st for Pears; and Mr. J. Price for dessert, and Mr. E. Wyman for culinary Apples.

Miscellaneous classes for plants helped largely to furnish the room. These consisted of Bouvardias, finely-grown plants from Mr. A. J. Driver, from whom also came the best Cyclamen.

The zonal Pelargoniums in small pots were quite a feature, the best dwarf and profusely-flowered were from Mr. A. J. Driver.

The best group of stove and greenhouse plants, very tastefully arranged, Dendrobium Phalaenopsis Schroderianum playing an important part, came from Mr. G. Cypher, gr. to Sir John Dorrington, Bart., and another good one from Mr. J. F. Wilkinson.

CRYSTAL PALACE.

NOVEMBER 4, 5.—Considering the extremely liberal schedule of prizes offered by the company on this occasion, the competition might have been more spirited than it was in some of the classes. The larger classes, wherein four prizes were offered in

each, were all keenly contested, save in two instances. This points to the fact that fourth prizes offer increased inducements to exhibitors to compete, and is worthy of further note in the framing of schedules for another season.

In the large class for twenty-four Japanese and twenty-four incurved, with not less than eighteen varieties of each, or more than two of any one variety, Messrs. W. and G. Drover, Fareham, won easily with grand flowers throughout; if anything, the incurved were possibly the finer lot. Amongst these note should be made of John Lambert, M. R. Bahuant, Alfred Salter, Lord Alcester, M. Darier, Mr. W. Shipman, and Prince of Teck, which were all remarkably fine well-finished flowers. Of the Japanese the finest were Mrs. E. W. Clark (extra colour), Puritan, Viviani Morel, Mrs. S. Dibbins (yellow, with narrow twisted florets), Miss A. Hartshorn, Sunflower, and Mrs. C. Wheeler. In this exhibit it was a difficult matter to find a second-rate flower; Mr. Salter, gr. to T. Haywood, Esq., Woodhatch Lodge, Reigate, was an excellent 2d, his best flowers being of incurved, M. R. Bahuant, Empress of India, and Golden Empress, and of Japanese, W. H. Lincoln, Gloire du Rocher (extra), and Edwin Molyneux. The next collections in this class were weak in incurveds, but in one instance particularly strong in Japanese.

For eighteen incurved varieties, Mr. Douglas, Great Gearies, Ilford, had the post of honour, beating Messrs. Drover, who came in 2d. Mr. Douglas' finest flowers were in his back row, and were very fine and even; these were Golden Empress, John Doughty, Emily Dale, Queen of England, Lord Alcester, Empress of India—Mrs. S. Coleman and M. R. Bahuant being also in good form. In Messrs. Drover's stand was an extra fine bloom of M. Darier, and another of Abbot's White.

Mr. Howe, gr. to H. Tate, Esq., Park Hill, Streatham, was 1st for twelve incurved varieties, the Queen and Empress family being the finest; Mr. Carpenter, gr. to Major Collis Browne, Byfleet, was a good 2d. Refulgens in this stand was of extra deep colour.

For six incurved, one variety, Mr. Carpenter again won, and that grandly, with half-a-dozen flowers of Refulgens, remarkable alike for their fine finish and colour. Mr. Shoesmith, Shirley Cottage, Croydon, was 2d, showing Empress of India, very pure in colour.

For eighteen Japanese, the 1st prize went to Mr. Cox, gr. to J. Trotter, Esq., Brickenden Grange, Hertford. These blooms were all very even, and of excellent quality, seen all the better from the fact of being staged upon a larger size board. The finest were those of Etoile de Lyon, Mrs. F. A. Spaulding, Vice-President Andiguier, Viviani Morel, Stanstead White, and Mrs. E. W. Clark. Mr. Douglas came in 2d, with flowers somewhat smaller, but of good quality.

In the class for twelve Japanese, Mr. Felgate, gr. to the Duchesse of Wellington, Walton-on-Thames, was 1st, his blooms being of first-rate quality, Louis Bohmer (extra), Boule d'Or, and W. H. Lincoln being the finest.

With six of one kind (Japanese), Mr. Howe won with extra-fine blooms of Sunflower, remarkable both for colour and finish; Mr. Cox being 2d, with six of Avalanche, immense blooms, and fresh; the 3rd prize going to half-a-dozen Viviani Morel, of deep colour.

Mr. Salter was 1st for eighteen incurved, La Japonais, Cullingfordi, Edward Becket, and Elaine were the best of these. Mr. Felgate came in 2d, with a good stand, King of Crimson and La Triomphante being particularly good.

Mr. Glen, gr. to Mrs. Montefiore, Worth Park, staged a fine lot of Anemone and Japanese-Anemone-flowered, in eighteen varieties, and was placed 1st, no one else competing. This stand would, however, have been hard to beat; the finest blooms were Miss A. Lowe, Souvenir de Madame Blanche, Dame Blanche, Mrs. Judge Benedict, Nelson, and Gladys Spaulding.

Mr. Knapp, gr. to F. W. Amsden, Esq., Chichester Road, Croydon, was first with Pompons, showing blooms of true Pompon character, not so remarkable for size as for perfect finish, Madame Elise Dordan, Black Douglas, and Toussaint Morizot being all noteworthy. Mr. Salter was 2d, with larger blooms, some few of which came dangerously near to the reflexed section, although classed as Pompons.

For Anemone-Pompons Mr. Salter was 1st, his best examples being Marguerite de Coi, Aglaia, and Sidonie; Mr. Knapp in this case was 2d.

Mr. Carpenter was 1st for singles, showing a very

attractive lot of blooms in trebles, Miss A. H. Bales, Rev. W. E. Remfrey, White Jane, Carrie Wells, and Lady Churchill, were the finest of these. Mr. Wells, Earlswood Nurseries, was 2d, with smaller flowers.

Groups.—In the large class of Japanese varieties only, Messrs. Reid and Bornemann, Sydenham, were easily 1st, staging in a tasteful and practical manner some finely-grown plants, varying in height from the tallest down to others not more than 12 inches high as a finish to the front; Val d'Andorre, Avalanche, Edwin Molyneux, and Viviani Morel were all prominent, as also was Sunflower; these kinds carried in each instance grand blooms. Messrs. Carter & Co. were 2d, with clean and bright well-grown plants.

In the amateur's class, Mr. T. Wilks, gr. to C. Ralph, Esq., Upper Norwood, was a good 1st, the colours well chosen, and the culture excellent.

Specimen Plants.—These were hardly enough advanced; the best were a very fine half-dozen of Pompons, these were in profuse bloom, being admirable examples of cultivation, from Mr. Hughes, gr. to G. R. Higgins, Esq., Dalwich; Cedon Nulli, Aurora Borealis, and St. Michael, were the best.

Of Japanese varieties, the best half-dozen were those from Mr. Wesker, gr. to A. Heaver, Esq., Streatham Elms, Upper Tooting; these also were excellent, not over large, but well-flowered, Sarah Owen, Stanstead Surprise, Margot, and Madame Pigny being the finest.

Mr. Cherry, gr. to Mrs. Gabriel, Norfolk House, Streatham, was 1st, for incurved varieties, made up chiefly of the Rundle family.

Of new varieties, First-class Certificates were awarded to Messrs. Pitcher & Manda, Swanley, for Col. W. B. Smith, a splendid acquisition to the reflexed Japanese section, the flowers of extra size, in colour a rich bright golden-bronze; also for G. W. Childs, another fine Japanese of large size and perfect form, the colour a rich velvety-crimson, having no shade of brown or chestnut; and for Mdle. M. Hoste, a lovely flower, of a creamy-white shade, with broad reflexed petals.

Miscellaneous groups of plants were shown by Messrs. Shuttleworth & Co., Peckham Rye; and fruit by Messrs. J. Laing & Sons, J. Cheal & Sons, and J. Peed & Sons, all in good condition.

KINGSTON AND SURBITON.

NOVEMBER 8, 9.—A foggy morning succeeded by a fairly fine day greeted this excellent society's annual show, and greatly assisted it in enabling large numbers to attend. Held as usual in the Drill Hall, a spacious, though somewhat cold building, the show enjoys the distinction of presenting a very attractive and perfect whole, and thus is still the finest of its kind around London. The great contest of the show is that for the Challenge Vase, and the present one is the sixth. In 1890 Mr. Beckett took it for Mr. Bryant, of Juniper Hill. Last year Mr. Carpenter won it for Major Collis Browne, of Byfleet; and this year it has fallen to Mr. Mease, gr. to A. Tate, Esq., Downside, Leatherhead. Next year these three champions will have to fight out the class alone, and the winner then will take the vase for good. Mr. Mease had in his twenty-four incurved fine blooms of Queen of England, Violet Tomlin, M. R. Bahuant (very fine), Empress of India, Mrs. Heale, Jeanne d'Arc, Lord Alcester, Lady Doughty, Golden Empress, Nil Desperandum, Robert Cannell, &c., and of Japanese in the twenty-four, Viviani Morel, J. Stanborough Dibben, Mdle. Lacroix, E. Molyneux, G. C. Schwabe, Vice-President Darier, Puritan, Colonel W. B. Smith, Etoile d'Yon, E. W. Clarke, Sunflower, and Mdle. Marie Hoste; Mr. Carpenter was 2d, having also capital blooms, especially Alfred Lyne, Lord Wolseley, Nil Desperandum, John Salter, John Doughty, and Jardin des Plantes, of incurved, and Criterion, Avalanche, W. Tricker, Madame Baco, Wm. Coles, and J. Blenkinsop, of Japanese; Mr. Beckett, was 3rd.

Mr. Mease was again a good 1st with twenty-four incurved blooms in that class, having Lady Doughty, M. R. Bahuant, Queen of England, Violet Tomlin, Mrs. S. Coleman, Lady Carey, &c. Mr. Higgs, gr. to J. B. Hanbury, Esq., Leatherhead, was 2d, his best flowers being John Lambert, Golden Empress, Refulgens, Miss Haggas, Empress Eugénie, &c. Mr. J. Thorne, gr. to A. E. Flood, Esq., Walton, was 3rd.

With twelve incurved blooms, Mr. Juks, gr. to W. M. Grant, Esq., Cobham, was 1st, having good flowers of sorts previously named; Mr. J. Hopkin

gr. to Mrs. Widderspoon, Walton, was 2nd; and Mr. Felgate, gr. to the Duchess Dowager of Wellington, Walton, was 3rd.

Mr. Hawkes, gr. to J. B. Tate, Esq., Kingston, had the best six blooms; and in the class for six of one variety Mr. Carpenter was a good 1st, with beautiful flowers of *Refulgens*—Mrs. Heale, and Queen of England following.

Japanese.—In the class for twenty-four blooms, Mr. Higgs was an easy 1st, with generally grand flowers. Sunflower—wonderfully fine, Madame Marie Hoste, W. H. Lincoln, Vice-President Darquier, Violet Rose—very fine, Lilian Bird, Vivian Morel, Albéric Lunden, &c., were of the best. Mr. W. Mease was 2nd, with capital blooms, in which Col. W. B. Smith, J. Stanborough Dibden, E. W. Clarke, César Costa, and Gloire du Rocher were prominent. Mr. G. Trinder, gr. to Sir H. Mildmay, Bart., Dogmersfield Park, Winchester, was 3rd.

Mr. Felgate had the best twelve Japanese; Mr. Milcham, gr. to A. T. Miller, Esq., Leatherhead, coming 2nd. Mr. Hopkins had the best six blooms, and of one variety Mr. Felgate was 1st, with a superb half-a-dozen of Sunflower, Vivian Morel coming 2nd, and fine Avalanche 3rd.

In the reflexed class, Mr. Carpenter was 1st, Mr. Mease 2nd.

Mr. Cawte, gardener to P. Robinson, Esq., Esher, had the best twelve Anemone blooms; and Mr. G. Woodgate, gr. to Lady Wolverton, Coombe Wood, the best twelve bunches of Pompons. Mr. Carpenter had the best lot of twelve bunches of singles, some of them very beautiful.

Of white Japanese, six blooms, Mr. Waite, The Gardens, Glenhurst, Esher, had the best in fine *Midle Lacroix*.

Mr. Woodgate also won a local cup with twelve Japanese and twelve incurved, good blooms; Mr. Cawte coming 2nd. But in a class for eighteen blooms of Japanese incurved, and Anemone, Mr. Cawte was 1st, and Mr. Woodgate 2nd; whilst in a class for twenty-four blooms of Japanese incurved and reflexed, Mr. Mease was 1st, and Mr. Woodgate 2nd. We can only refer to the fact that a First-class Certificate was awarded to Mr. Molyneux, Swanmore Park, for now incurved Mrs. Mitchell, a sport from Empress Eugénie, soft salmon-buff, received from New Zealand.

Turning to plants, the best mixed group came from Messrs. Puttock & Shepherd of Kingston, and included some good *Odontoglossums* and *Cypripediums*. Mr. G. Cock, gr. to J. S. Passmore, Esq., Walton, was 2nd with a very pretty arrangement; and Mr. J. Reeve, gr. to General Annesley, Oatlands Park, was 3rd.

Of *Chrysanthemums*, groups of which there were six all very fine, Mr. Milcham was 1st with a superb collection, finely bloomed and arranged; Mr. H. W. Pitcher, gr. to Mrs. Dunnage, Surbiton, was 2nd; and Mr. Simmonds, gr. to W. Cunard, Esq., Twickenham, was 3rd.

Mr. J. W. Reed, Oatlands Park, had the best six trained plants, Sunflower, Dr. Sharpe, and Mrs. Forsyth exceptionally good. Mr. Reeves had the best three plants, also the best four Pompons.

Mr. Portbury, gr. to W. N. Tidy, Esq., Putney, had the best nine table plants, Mr. Milcham the best six double, and the best six single *Primulas*, in large competitions. Mr. Mease took the 1st prize for six *Carnations* in pots. Berried plants, *Cyclamens*, &c., made up other considerable classes. Table-stands and bouquets were good and numerous, so also were bunches of Violets. Mr. Trinder had some remarkably fine flowers.

Fruit made a telling feature. The best four dishes came from Mr. Griffin, gr. to A. Christy, Esq., Coombe Bank, who had good Muscat Grapes, *Héricart de Thury* Strawberries, Apples, and Pears; Mr. Trinder was 2nd.

In the class for Black Grapes, Mr. Newman, gr. to J. A. Tulk, Esq., Chertsey, showed superb Gros Colman, large, and black as Sloes. These were not only placed 1st, but received the *Gardeners' Magazine* Medal; Mr. Elliott, gr. to P. W. Graham, Esq., Esher, was 2nd, with other wonderfully fine Gros Colman; and Mr. Ford, gr. to W. H. Ellis, Hounslow, was 3rd, with good Alicante. Mr. Griffin had also the best white Grapes, in Muscat of Alexandria. Mr. Ridge, gr. to E. J. Eady, Esq., Weybridge, had the best six dishes of Apples; and Mr. Trinder the best four dishes of Pears.

The 1st prize for a basket of vegetables was taken by Mr. Waite.

BIRMINGHAM CHRYSANTHEMUM EXHIBITION.

NOVEMBER 8, 9, 10.—The groups at the exhibition held on the above dates were very good, for the season is a late one in the Midlands, and the exhibition a week earlier than usual, but seven excellent groups were staged in the larger class; Mr. Dyer, gr. to Mrs. Marigold, being 1st; Mr. F. Jenkins, Olton, 2nd; with four other prize-winners. A class for smaller groups was also well filled, seven excellent groups being set up, Mr. Brasieri, gr. to Sir T. Martineau being 1st.

Specimen *Chrysanthemums* have been well done at Birmingham for a good many years, and on this occasion the plants were not so large as we have seen them, but there was much less artificial training visible about them, a more natural habit prevailing. Mr. Waldron, gr. to G. Cadbury, Esq., Selly Oak, was 1st for nine plants, also for six plants, and three Pompons, and 2nd for three Japanese; and Mr. Dyer was 2nd for nine and six; and Sir Thomas Martineau 3rd.

The cut bloom section is invariably a strong point at Birmingham, and this year, for the first time, the usual class for twenty-four incurved and twenty-four Japanese was divided into two separate classes, with a 1st prize of £10 in each, with other liberal prizes following. In each class, Mr. Parker, gr. to J. Corbett, Esq., Impney, was 1st, with two excellent stands, and he was also 1st for eighteen Japanese, and secured the *Gardeners' Magazine* Silver Medal for excellence of culture; Mr. W. H. France Hayhurst, Wellington, was 2nd for twenty-four Japanese, and 3rd for twenty-four incurved; Mr. A. Coombs, gr. to the Earl of Dudley, Himley, was 3rd for twenty-four Japanese, and 2nd for twenty-four incurved. Nine lots of Japanese were staged, and in both classes. Other winners were—Mr. Goodacre, gr., Elvaston; Mr. Harman, gr. to the Earl of Denbigh; and Mr. J. Morris, gr. to Sir R. Moon, Bart., Coventry.

The classes for twelve Japanese, as also twelve incurved, were well filled.

Chinese *Primulas* are well done in this district, and there was a fine display again this year of even, well-grown specimens. In the open class there was a trial of strength amongst the local nurserymen for twelve.—1st, Messrs. Pope and Son; 2nd, Messrs. Thomson & Co.; whilst for six plants the positions were reversed. For six doubles, Mr. F. Denning, florist, was 1st, with medium-sized, well-done specimens, with very fine flowers, on *Marchioness of Exeter* especially; Messrs. Thomson & Co., 2nd; Messrs. Pope & Sons, 3rd.

The classes for gentlemen's gardeners, and in the special-prize classes, Mr. Clements, gr. to Mrs. Horton; Mr. Caldecott, a veteran grower and exhibitor; Mr. Cadbury's gardener, and others, were winners.

The Right Hon. Joseph Chamberlain, M.P., was the only exhibitor of *Orchids*, his six consisting of *Oncidium*, *crispum* and *tigrinum*; *Odontoglossum grande*, *Sobralia albo-nana*, *Cattleya labiata*, and a good pan of *Pleione lagenaria*.

From Highbury also was a group, not for competition, in which *Cattleya Dowiana*, *C. Massaiana*, *Cochlioda Noetzeliana*, *Oncidium Phalenopsis*, with *Masdevallias*, *Barkerias*, &c., were noticeable.

Fruit was not so extensive as usual, but it was of good quality generally.

For six bunches of Grapes, Mr. Goodacre was 1st with a fine lot; 2nd, J. F. Campbell, Esq., Uttoxeter. For three bunches of Black Grapes.—1st, Mr. Bates, gr. to J. T. Harris, Esq., Stone, with Gros Colman, very fine in berry and evenness; 2nd, G. Cadbury, Esq., with fine bunches of *Barbarossa*.

For three bunches of white Grapes.—1st, Mr. Harman, gr. to the Earl of Denbigh, with well-coloured Muscats; 2nd, Mr. Slade.

There was a close competition also in the other classes of Grapes. Mr. Slade was 1st with an excellent Pine, and also staged, not for competition, four superb examples of *Charlotte Rothschild* and *Smooth-leaved Cayenne*, to which a Silver Medal was awarded.

Vegetables are much encouraged at the Birmingham November *Chrysanthemum* Exhibition, and Messrs. Sutton & Sons, R. Sydenham, Thomson & Co., Webb & Sons, offer liberal prizes for collections.

For Messrs. Sutton & Sons' prizes eight collections were staged, 1st, Mr. T. Smeetham, Seaton Knolls, Shrewsbury; 2nd, Captain Lloyd, Oswestry. For Mr. Sydenham's open prizes, for ten varieties of vegetables, Mr. Smeetham was again 1st, with a very fine collection.

For Messrs. Webb's prizes, Mr. Smeetham was

again 1st; and Captain Lloyd, 2nd, both lots of excellent quality.

For Messrs. Thomson & Co.'s prizes, nine collections were staged, and here again Mr. Smeetham was 1st with a strong competition. The latter exhibitor received a Gold Medal for a collection.

Honorary exhibits were numerous. Messrs. Thomson & Co. staged a large collection of fine vegetables, a fine memorial arrangement of flowers, and a tastefully set-up group of plants. Messrs. Hewitt & Co., Solihull, a fine lot of *Begonias*; Messrs. Pope & Sons, a group of plants; Mr. Watkins, Hereford, a collection of Apples; Mr. Sands, a collection of Apples; Mr. W. Rose, Moseley Botanical Gardens, very fine Mushrooms grown in cellars; Mr. F. Denning, group of plants; there were sundry others.

A Certificate was awarded to Mr. W. J. Godfrey, Exmouth, for three blooms of *Chrysanthemum* *Beauty of Exmouth*; and Mr. R. Owen, Maidenhead, would have received some certificates, but the blooms of his new varieties came on the second day.

In Mr. Parker's 1st prize, twenty-four incurved, there was a grand bloom of Mrs. Robinson King, a great acquisition of Mr. R. Owen's, and John Lambert was very fine in this stand, as well as generally. Vivian Morel was also very fine everywhere, and there was a grand bloom of E. W. Clarke, Japanese, in the Rev. W. D. Thatcher's stand of twelve Japanese.

BOURNEMOUTH.

NOVEMBER 9, 10.—The Bournemouth and District *Chrysanthemum* and Horticultural Society held its sixth exhibition of plants and cut blooms of *Chrysanthemums*, fruits, flowers, and vegetables, in the Mont Dore Winter Gardens on the above dates, and was, on the whole, the best it has hitherto held.

Cut Blooms (open classes).—The principal class was for thirty-six blooms, to include eighteen Japanese and eighteen incurved, not more than two of any one variety. 1st, Mr. G. W. Taylor, gr. to J. P. Elphinstone, Esq., Christchurch; 2nd, Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Hants. Mr. Taylor was strong in Japanese varieties, large fresh blooms, in good variety. His best were Vivian Morel, *Etoile de Lyon*, Mrs. Wheeler, M. Baco, and *Avalanche*. Incurved: Golden Empress, John Lambert, Prince Alfred, Miss Haggas, Empress of India, and Lord Wolseley. Mr. Taylor was also 1st in four other leading classes, winning the medal given by Messrs. Watts & Son, Palace Nurseries, Bournemouth, staging good all-round blooms in every case; his *Etoile de Lyon*, which won the premier position in the single bloom class, was 7 inches in diameter, and 6 inches deep, the stem being inserted in a vase.

Mr. Garner, gr. to Mrs. Braddyl, Amberwood, Christchurch, had the best dozen of incurved varieties in the local classes, and took the Silver-gilt Medal of the National *Chrysanthemum* Society, in addition to a money prize, with good blooms.

Groups of *Chrysanthemums*, occupying a space varying from 30 square feet in the amateur class, to 60 square feet in the open class, made a fine show in themselves.

Silver cups, medals, and substantial money prizes, were given in all the group classes. Three groups were arranged in the open class. 1st, Messrs. Watts & Son, Bournemouth; 2nd, Mr. J. K. Ingram, The Nurseries, Parkstone; and 3rd, Mr. Blanchett of Pool. The plants in the 1st and 2nd prize groups were well grown and dwarf, Mr. Ingram's plants being from 20 inches to 30 inches high, and clothed with luxuriant foliage down to the pots, and having flowers of more than ordinary size. Messrs. Watts' flowers were uniformly large, Florence Davis, *Etoile de Lyon*, E. Molyneux, *Avalanche*, Vivian Morel, Louis Boehmer, and Madame Tricker, being among the best. Mr. C. Frampton carried away 1st honours for a very effective group in the class confined to single-handed gardeners.

Fruit.—This was shown in very good condition. Grapes (open).—Mr. Garner was 1st, out of five lots put up, for three bunches of black Grapes, with heavy well-coloured bunches of Black Alicante; Mr. S. Castle, Fordingbridge, being 2nd, with Gros Colmar in good condition. Mr. James Chalk, gr. to G. Read, Esq., Westwood, Salisbury, was 1st, for white Grapes, with three fine bunches of Muscat of Alexandria, consisting of large, clean, golden-amber-coloured berries; Mr. Garner was a good 2nd, with same variety. Mr. Taylor and Mr. Garner were the most successful exhibitors of Grapes in the local classes.

Apples and Pears made a fine display. Mr. Garner had the best three dishes of dessert varieties, showing clean, even, well-coloured fruits. Mr. J. Menzies, gr. to Lees Elliott, Esq., South Lychett, Poole, was 1st, for three dishes of Pears, staging grand specimens of Beurré Diel, Duchesse d'Angoulême, and Darondeau. Six grand fruits of Beurré Bachelier Pear, clean, and perfectly ripe, justly attracted a good deal of attention from visitors.

Vegetables.—These were shown extensively, and in fine condition.

Miscellaneous Exhibits.—Mr. Swaffield contributed a tastefully-arranged group of miscellaneous plants, including Palms, Odontoglossum grande, winter-flowering Heaths, &c. Messrs. Stewart & Sons, Fern Down Nurseries, Wimborne; Messrs. Watts & Sons, Mr. Ingram, &c., contributing fruit, plants, and flowers.

GLoucestershire, Root, Fruit, AND CHRYSANTHEMUM.

NOVEMBER 9, 10.—The above society held their annual exhibition on the above date, and the produce staged was generally very good. Reference was made recently in these columns to the trees and shrubs at Highnam Court. The Chrysanthemums are also worthy of special notice, as Mr. Sowray, the capable gardener at that place, proved by practically taking nearly all the chief prizes on this occasion; in fact, he was 1st in every class for plants and cut blooms with one exception—the Anemone class, C. Lee Campbell, Esq., Glewston Court, Ross (gr. Mr. S. T. Wright) taking 1st for a very fine stand of Anemone-flowered Chrysanthemums. The group of plants put up by Mr. Sowray was a model of what a group should be, plants, blooms and arrangement being excellent.

Fruit was well shown, Mr. Sowray, Mr. Wright, and Mr. Jones being the most successful in the Grape classes. With Pears, Mr. Wright was the winner of the 1st prizes in every class. Apples were splendidly staged by the English Fruit and Rose Co., Hereford; Mr. Wright, and a few others, most of the principal prizes going to those named.

Prizes are given to tenant-farmers within the county of Gloucester for the best and most profitable collection of Apples, and it is very gratifying to note yearly the improvement in culture made in fruit grown by them, and the greatly increased interest they now take in hardy fruit. There can be no question that the Society is doing very good work in the county.

Mr. J. Watkins, Pomona Farm Nurseries, Withington, Hereford, staged a very fine collection of Apples, of beautiful colour and good size, which received much attention from visitors.

Messrs. Sutton & Sons, Reading, sent a beautiful group of Cyclamens.

The show of Potatoes was not equal to former years, but after seeing the fine show at Earl's Court of the Potato, the beholder is, perhaps, a little hypocritical.

CARDIFF CHRYSANTHEMUM.

NOVEMBER 9, 10.—The annual show was held in the Park Hall on the above date. The exhibition was admitted by all to be the most successful—both financially and in quality of exhibits—that has yet been held in Cardiff. The feature of the show was the cut blooms, which, notwithstanding the late season, were exceptionally good. Groups were not so numerous as we have seen them in other years, but the display throughout the hall was very effective.

The fruit was of high merit—especially Grapes—and the competition keen.

Messrs. Clibran of Altrincham had a very attractive stand of Apples and Chrysanthemum blooms, the latter including fine specimens of the newest varieties.

Sir Ch. Phillips (gr., J. Dumble), took 1st prize for a collection of forty-eight cut blooms, thirty-six of which had to be distinct varieties. Some of the finest were W. H. Lincoln, Etoile de Lyon, Mrs. J. S. Fogg, Mrs. R. King, and a good specimen of Mrs. A. Hardy; T. J. Masters, Esq. (gr., Mr. J. Howe), obtained 2nd with a very good lot of blooms, among which were Ami Hoste, Sunflower, Vivian Morel, Louis Boehmer, and Coronet; W. Stuckey, Esq., was placed 3rd, with a collection very little inferior to the 2nd.

For a stand of twenty-four distinct varieties of incurved and Japanese blooms, T. J. Masters, Esq., took 1st place, his best blooms being Ami Hoste,

Vivian Morel, Mrs. F. Jamieson, Violet Tomlin, and Princess of Wales. V. Stuckey, Esq., came next, with some fine blooms of Florence Davies, Lilian Bird, and Queen of England.

Captain Marling (gr., J. McDonald) took the lead among fourteen exhibitors for twelve Japanese blooms; among these were Vivian Morel, Florence Davies, and W. W. Coles. In the same class, Mr. S. Horton, of Cardiff, and V. Stuckey, Esq., took 2nd and 3rd places respectively.

Captain Marling again carried off the 1st prize for twelve incurved blooms, Ami Hoste, Lord Alcester, and Empress of India being well represented.

In the Anemone section, the competition and quality of bloom was so poor that the judges did not deem it advisable to award anything but a 2nd prize.

A Challenge Cup, valued at five guineas, was won by Sir C. Phillips, for a collection of twenty-four blooms, distinct varieties. This competition was only open to amateurs and gentlemen's gardeners.

The Earl of Lisburne was awarded the prize for the best bloom in the show, the variety shown being Vivian Morel.

In the open class for groups, Mr. G. W. Drake, Cathay's Nursery, Cardiff, carried off the 1st prize with a well arranged group of healthy dwarf plants.

Mr. W. Treseder, Cowbridge Road Nurseries, Cardiff, took 2nd prize; and Mr. F. Case, 3rd.

In the amateur class, Col. Page (gr., Mr. W. Hockey) was placed 1st with a group of dwarf plants, which, as far as could be seen, were furnished to the edge of the pots with dark healthy foliage. The 2nd prize in this class was obtained by J. P. Hacquoil, Esq., Rhymney Hill, Cardiff.

For a group of miscellaneous plants, Colonel Hill (gr., Mr. Clarke), was 1st, with a well-arranged collection of stove and greenhouse, foliage, and flowering plants.

Prizes were also given for wreaths, crosses, bouquets, and sprays. Messrs. Phelps & Co., Cardiff, took the 1st prize for wreaths; Mr. W. Treseder 1st, for the best cross; and Messrs. Phelps & Co. were successful in taking the prize for the best bouquet.

Mr. Davidson, of Ammanford, exhibited the best spray in the show, which was tastefully made up with Tea Roses, Asparagus, and grass spikes.

Fruit.—H. C. Moffat, Esq., of Goodrich Court, Ross (gr., Mr. Spencer), gained the 1st prize for five dishes of fruit. His collection consisted of Black Alicante and Golden Queen Grapes, Cox's Golden Gem Melon, Blenheim Orange, Apple, and Duchess d'Angoulême Pear.

V. Stuckey, Esq., exhibited two bunches of very highly-coloured Black Alicante Grapes, for which he was awarded 1st prize.

Two bunches of Muscat of Alexandria, shown by Miss Rous, Court Ralla, Cardiff, had the premier place among the whites.

The vegetable exhibits were of such merit as to show that the past year in this district has been one highly favourable to their development. For the collection of six varieties, the competition was very close. Miss Rous took 1st place, General Lee 2nd, and Colonel Page 3rd.

SOUTH SHIELDS AND NORTHERN COUNTIES CHRYSANTHEMUM.

NOVEMBER 9, 10.—This show was held in the Assembly Hall, the upper and lower halls being quite filled. This society promises to become one of the best in the North of England, there being in the schedule this year no fewer than fifty classes, or nearly as many as the schedule of the National Chrysanthemum Society; and, with so energetic a secretary as Mr. Cowan, and a splendid executive committee, the result was a very fine exhibition.

For thirty-six cut blooms of Japanese varieties there were five stands set up, and that of Mr. P. Blair, gr., Trentham Hall, was adjudged the finest; amongst his varieties were very fine Vivian Morel, Sunflower, Avalanche, Eynsford White, and Mr. E. Beckett. Mr. Wheeler, Jesmond Towers, was 2nd.

For the thirty-six blooms of incurved varieties, competition was less—indeed, the date was too early for the district; Mr. Blair was 1st, and Mr. Walker, Low Fell, 2nd.

For twelve varieties of Japanese, Messrs. Smith and Wheeler took 1st and 2nd prizes in the order of their names.

For twelve bunches of Pompons the competition was very keen, Mr. Smith staging the finest lot.

In the Anemone classes Mr. Blair had a grand lot of blooms, easily securing the 1st prize besides

the C. S. Certificate. The same exhibitor was 1st for reflex varieties, the other exhibits being very backward, and many blooms not expanded. There were many entries in the classes for the bouquet-maker's art, and Mr. Blair was 1st with a bouquet consisting of chiefly Orchids; Mr. East, Southfield, being 2nd.

The groups entered for competition were many, and the society allows other plants besides Chrysanthemums to be included in them, as a finish in the front or as a background, the result being in some instances very good. Mr. T. Burton, Middlesboro, was 1st with a fine group, which was furnished at the back with large Palms, and so good were the Chrysanthemums as to obtain for it the National Chrysanthemum Society's Certificate for excellence; 2nd, Mr. Walker; 3rd, Mr. Wheeler.

Very fine large well-bloomed Chinese Primulas, staged by Mr. Walker, were 1st, with the other prizes being taken by local exhibitors.

Table plants were shown in large numbers, Messrs. Wheeler and Bathurst being the most successful with these.

A great number of Chrysanthemum plants were staged in the smaller classes, but the blooms were undeveloped. Amateurs in the neighbourhood contributed good plants, cut blooms, and Ferns in fine condition, but the class for zonal Pelargoniums was less well-filled.

Fruit.—Although the society does not offer any inducements in the shape of prizes for hardy fruit, as it cannot be well grown in the neighbourhood, liberal prizes are offered for Grapes. The best black Grape (Black Alicante) were shown by Mr. Hopper, Morpeth, who was awarded the *Gardeners' Magazine* Medal for excellence. For white Grapes, Mr. McDonald, South Shields, was 1st, with Muscat of Alexandria.

PUTNEY AND WANDSWORTH CHRYSANTHEMUM SHOW.

NOVEMBER 10.—The fifteenth annual exhibition took place on the above date in the Cromwell Hall. For a group, quality and general effect to be the leading features, the premier position was won by Mr. J. Dark, gr. to J. Hooker, Esq., Lomond House. Here there were some grandly-flowered plants of E. Molyneux; 2nd, Mr. S. Mynett, gr. to Colonel W. H. Poe, C.B., Ashburton House.

Twelve Chrysanthemums, distinct, amateurs.—1st, with free-flowered plants, J. Lass, Esq., Sandown Lodge; 2nd, S. W. Lambert, Esq., Northumberland Avenue.

Specimen plants were successfully shown by Mr. C. Bentley, gr. to W. J. Bosworth, Esq., Cedar Court, Roehampton; Mr. J. Portbury, gr. to W. N. Froy, Esq., Ripon House; Mr. J. Burtley, gr. to Lady Gabriel, Edgcombe Hall, Wimbledon Park; and others.

Twenty-four Japanese, cut blooms.—1st, C. W. Knowles, gr. to Mrs. Egerton, Solna; Vivian Morel, Sunflower, and Condor especially good in this stand. 2nd, Mr. J. Portbury.

Twenty-four incurved.—1st, Mr. C. W. Knowles; 2nd, Mr. J. Portbury.

Twelve incurved.—1st, Mr. C. W. Knowles; 2nd, Mr. J. Burtley.

Bouquets of Chrysanthemums were a pretty feature, being well shown by Mr. J. Portbury and Mr. G. Lacey, Upper Richmond Road.

Six Primulas, 1st, Mr. W. Reeve, gr. to G. Allen, Esq., Putney Hill; 2nd, Mr. H. Sims, gr. to W. Hancock, Esq., Putney Hill.

Six table plants, 1st, Mr. J. Portbury.

Group of mixed plants, flowering and foliage, 1st, Mr. J. Portbury, having some well-coloured Crotons; 2nd, Mr. A. Methven, gr. to W. Keiller, Esq., Wimbledon Park.

Fruits and vegetables were successfully contributed by Mr. C. Grover, gr. to Col. W. E. Evans, The Elms, Roehampton, Mr. A. Methven, Mr. J. Burtley, Mr. C. W. Knowles, Mr. J. Portbury, and others.

A fine group of foliage and flowering plants, not for competition, contributed by Mr. J. F. McLeod, gr. to J. S. Morgan, Esq., Dover House, Roehampton, added much to the effectiveness of the exhibition. It contained, amongst other good things, some well-flowered plants of the now rarely-seen *Lasiandra macrantha*.

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 10, 11.—The above successful exhibition was held in the Guildhall on the dates named, and cut blooms, as generally elsewhere, formed its

best feature. Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Wickham, Fareham, was 1st for forty-eight blooms, in eighteen varieties, his stand being an excellent one of leading varieties; 2nd, Mr. Neville, gr. to F. W. Flight, Esq., Twyford.

For twenty-four blooms, in twelve varieties of Japanese Chrysanthemums, Mr. H. R. Brown, gr. to A. B. Welch Thornton, Esq. Beaurepaire Park, Basingstoke, was 1st; and Mr. G. Trinder, gr. to Sir H. Mildmay, Dogmersfield Park, Winchester, was 2nd.

Incurved (twelve), in as many varieties, were best shown by Mr. N. Molyneux, 2nd, Mr. Neville.

Mr. Molyneux was placed 1st for six blooms, Lord Alcester in the Queen class, and for six in any one class, excluding the former, with Mrs. Coleman; 2nd, Mr. Neville, in the last-named class.

For six blooms of any one white Japanese variety, Mr. Molyneux was 1st with Mdle. M. Hoste; 2nd, Mr. Holloway, gr. to F. N. C. Read, Esq., The Wakes, Alton, with Avalanche.

Etoile de Lyon was the variety staged by Mr. Molyneux in the class for six, any one variety, excluding white; Mr. Neville next in order of merit with Viviani Morel.

The Silver Medal of the National Chrysanthemum Society was awarded to Mr. N. Molyneux for excellence of culture noted in his stand of forty-eight blooms.

Groups of Chrysanthemums and specimen plants were of moderate merit. Mr. Street, gr. to Dr. Fearon, The College, Winchester, took 1st honours in the former; and Mr. Carr, gr. to W. A. Gillett, Esq., in the latter competition.

Fruit.—Some good Grapes were shown by Mr. Hall, gr., Lockerby Hall, Romsey; Mr. J. Gardener, Twyford Lodge; Mr. T. Hall, gr., South Stoneham House; and Mr. Trinder.

Mr. Hillier, nurseryman, Winchester, was highly commended for an excellent show of Apples in variety.

Vegetables were excellent, as shown by Mr. Bowerman, gr., Hackwood Park; and Mr. Best, gr., at The Vyne, Basingstoke.

Mr. E. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, had a meritorious exhibit of cut blooms of Chrysanthemums to aid in the display.

EXETER SHOW.

NOVEMBER 11.—The exhibition of this long-established Society was held, as is usually the case, in the Victoria Hall. This year's schedule contained a list of the presidents of the Society dating from 1829, in which year Lord Clifford was president. The Society, therefore, claims to be one of the oldest of those now existing. Hardy fruit made, as might be expected, a fine display, Apples especially being shown in large numbers, and of high colour. There were about 600 dishes displayed. Plants were of only moderate quality, and cut blooms formed the principal part of the floral display, and were generally very fine examples.

Japanese varieties seem to receive much encouragement from the Society, and a Silver Cup was offered for thirty-six distinct varieties, which was the means of bringing seven competitors into the lists. Mr. G. Hawkins, gr. to W. H. Fowler, Esq., Claremont, Taunton, won rather easily with a magnificent collection of leading varieties, well staged and very legibly named; especially good were the varieties Stanstead White, W. W. Coles, Viviani Morel, Mrs. A. Hardy, Mrs. E. D. Adams, Sunflower, and Lord Brooke. Mr. G. Foster, gr. to H. Hammond Spencer, Esq., Glendanaugh, Teignmouth, was a good 2nd.

For eighteen distinct Japanese varieties, a keen competition took place. Mr. Connelly, gr. to J. C. P. Talbot, Esq., Exeter, was an easy 1st, with magnificent blooms; 2nd, Mr. Fowler.

For twelve distinct Japanese, Mr. Searle, gr. to Miss Boyd, Gnaton, Torquay, was 1st, with a good stand of bloom; 2nd, Mr. J. Bishop, gr. to the Rev. F. C. Drake, Henlade, Taunton.

Mr. Connelly won the premier award for any white variety with blooms of Florence Davis, which were in prime condition.

The best yellow Japanese was Sunflower, shown by Mr. Connelly in the class for six of one variety. Mr. Fowler won in another class with Viviani Morel.

The incurved blooms were not equal to the Japanese in point of quality, still, they were staged in considerable numbers. Mr. Foster was 1st for twenty-four distinct varieties, and Mr. Stiles 2nd. For twelve distinct varieties, Mr. J. Bishop was 1st,

with what was, perhaps, the best stand in the show; and Mr. Connelly took 2nd place.

The quality of Anemone-flowered varieties was remarked to be very fine, and Mr. Prothero, gr. to W. McKenzie Bradley, Esq., Exmouth, was clearly 1st; and Mr. Veale, gr. to the Rev. H. Sims, Newton Abbott, 2nd. Single-flowered varieties and Pompons were best shown by Mr. Bond, gr. to F. Knapman, Esq., Exeter. The premier incurved bloom at the show was deemed to be a Golden Queen of England, shown by Mr. Connelly; and that for Japanese varieties, one of Stanstead White, found in Mr. Fowler's stand set up in the cup competition.

The best groups of Chrysanthemums, and also of miscellaneous plants arranged for effect, was contributed by Mr. W. Rowland, gr. to W. Brock, Esq., Exeter.

The numerous plants for table decoration, Poinsettias, Cyclamen, Bouvardias, and Violets, added considerably to the attractiveness of the show.

Fruit.—For twenty-four varieties of Apples, 1st, Mr. H. C. Williams; 2nd, Mr. Garland, gr. to the Hon. Sir J. D. Auckland, Exeter.

For twelve dishes, 1st, Mr. J. Gibbons, gr. to Rev. J. D. Gibbs, Exeter, with a very superior lot of fruit; and Mr. Martin, gr. to Lord Poltimore, Poltimore Park, Exeter, was 1st for six dishes and varieties of dessert Apples.

Excellent Grapes were shown by Mr. J. B. Payne, gr. to the Bishop of Bath and Wells, who was 1st with three bunches, and Mr. Martin 2nd.

Mr. Connelly was 1st for a like number of Muscat of Alexandria.

Mr. J. Wensby, gr. to J. H. Miller, Esq., Exeter, in the any other class competition, was 1st with Lady Downes, in grand condition.

Messrs. R. Veitch & Sons, nurserymen, Exeter; Jarman & Son, Chard and Godfrey, Exmouth, made noteworthy additions to the non-competitive exhibits, in the form of fruit and flowers.

MANCHESTER CHRYSANTHEMUM SHOW.

NOVEMBER 15.—The November show of flowers and fruit, under the auspices of the Royal Botanic Society, was held in the Town Hall. The Chrysanthemums, taken upon the whole, were a very goodly lot, and were keenly scanned by the promenaders throughout the day. There were over 1000 excellent cut flowers staged in the various classes, chief honours falling to Mr. E. Behrens, Whitechurch, who carried off the Gold Medal for thirty-six, closely followed by Mr. H. T. Robinson, Woolton, the Earl of Harrington, Mr. T. H. Sykes, Cheadle, and the Duke of Sutherland. Mr. B-hrens was also successful in the incurved and in the Japanese classes. Other excellent contributions were staged by Mr. Heine, Fallowfield, Mr. T. Brocklebank, Woolton, Mr. Cross, Bolton, and Mr. E. Cockburn, Birkenhead.

The most prominent blooms over the whole of the stands were among incurved Lord Alcester, Alfred Salter, John Lambert, Queen of England, in both gold and white; Mrs. Robson, John Doughty, Mrs. Heale, Prince of Wales, John Salter, &c.

Among Japanese, Mrs. Laing, Wm. Lonsdale, Sunflower, Madame Mézard, Mrs. Wheeler, W. H. Lincoln (extra fine), Sarah Owen, Edouard Audiguier, Viviani Morel, Jeanne Delaux, stood out prominently.

Pot Chrysanthemums were in fully better condition than we have seen them; the best groups came from Mr. J. C. Charlton, J. A. Blick, both of Didsbury, followed in some respects by Mr. Eaddam, Fallowfield, and Mr. T. Harker. Mr. J. Brown, Heaton Mersey, had the best group of Pompons.

Messrs. Clibran, Altrincham, had a very choice group of cut blooms of all the sorts, from single up to intensely formal incurved, and they looked well, set amongst Maidenhair Ferns, and backed up by choice noble Palms. Dickson, Brown & Tait made up a good group of Cyclamens, Cinerarias, Ferns, and Palms; and Dickson & Robinson had also a neat group, something after the same style. Mr. Chas. Moyes, Pendleton, put up a group of miscellaneous plants very effectively. Some few choice Orchids were tabled by Heath & Son, Cheltenham, comprising Cattleyas, Dendrobies, and Ladies' Slippers. Caldwell & Sons, Knutsford, had a miscellaneous group, and Mr. S. Allen, Sale, put down a very effective combination as a screen at the entrance hall. Mr. Browne sent some sweet-smelling cuttings from Llandudno, nothing finer than the yellow Wallflower, the varied Primroses, lots of Michaelmas Daisies, and some late-blooming annuals.

The fruit was well-coloured, but rather deficient in size. Mr. Barker staged thirty-six dishes of Pears and eighty-four of Apples, which were much admired. In the competition classes Lord Harrington took the leading position, followed by Mr. Barker and by Mr. C. Lee Campbell of Ross.

One word in favour of Mr. Mason's style of making up bouquets. They were not only loosely put up, so as to individualise the Roses, the Orchids, the Carnations, and such like of which they were composed, but they "cut at" the dumpy plum-pudding form which was wont to rule, and the educated eye was all the more gratified.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending November 12.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
		Above 42°, for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		Ins.			
0	5 +	32	0	— 132	+ 243	2 —	222	42.7	10	26
1	2 +	30	13	— 332	+ 290	4 —	177	25.4	21	31
2	1 +	26	8	— 226	+ 226	2 —	173	23.9	9	31
3	0 aver	25	12	— 198	+ 216	5 —	162	24.9	9	36
4	1 +	36	16	— 167	+ 293	6 —	153	21.3	26	35
5	1 +	34	5	— 169	+ 145	5 —	139	21.1	21	40
6	3 +	32	2	— 243	+ 230	0 aver	177	40.7	17	34
7	1 +	28	2	— 173	+ 180	3 —	178	33.0	12	34
8	1 +	39	4	— 150	+ 136	8 —	163	26.5	33	41
9	2 +	32	4	— 192	+ 145	4 +	196	33.4	20	31
10	1 +	39	4	— 135	+ 159	1 +	170	33.2	24	34
*	1 +	57	0	— 7	+ 42	6 —	164	25.6	25	47

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

THE following summary record of the weather for the week ending November 12, is furnished from the Meteorological Office:—

"The Weather during this period was extremely gloomy, damp, and foggy over the greater part of England (especially in London and its neighbourhood), and cloudy or dull over Ireland and Scotland. In the latter regions rain fell frequently, and in Ireland the falls were occasionally heavy.

"The temperature just equalled the mean in 'England, E.,' but in all other districts it was slightly in excess; in 'Scotland, N.,' however, the excess was as much as 5°. The highest of the maxima were registered on somewhat irregular dates, and ranged from 62° in 'Scotland, W.,' and 58° in 'Ireland, S.' and the 'Channel Islands,' to 52° in 'England, N.E.' The lowest of the minima were recorded between the 7th and 9th, and ranged from 25° in the 'Midland Counties,' and 26° in 'Scotland, E.,' to 34° in 'Scotland, N.,' and to 38° in the 'Channel Islands.'

"The rainfall was more than the mean in Ireland, and just equal to it in 'Scotland, W.,' but in all other parts of the kingdom there was a deficit; over the central, southern, and eastern parts of England the fall was very slight.

"The bright sunshine was very deficient generally, especially over northern and eastern England. The percentage of the possible amount of duration ranged from 9 in 'England, E. and N.E.,' and 10 in 'Scotland, N.,' to 26 in the 'Midland Counties,' and to 33 in 'England, S.W.' The lowest percentages of all were 2 at Stonyhurst, and 3 at Geldeston."

MARKETS.

COVENT GARDEN, November 17.

Market quiet. Prices unaltered. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 0-3 6	Melons, each ... 0 6-1 3
— Nova Scotia, per barrel ... 10 0-17 6	Pine-apples, St. Michael ... 4 0-8 0
Cobs, per 100 lb. ... 100 0	Oranges, Florida, per case ... 16 0-20 0
Grapes, per lb. ... 0 6-1 6	
Lemons, per case ... 15 0-35 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ferns, various, doz. 4 0-9 0
Aspidistra, per doz. 15 0-30 0	— per 100 ... 5 0-8 0
— specimen, each 7 6-21 0	Ficus elastica, each 1 6-7 6
Begonia, per doz. ... 6 0-12 0	Heliotrope, per doz. 3 0-6 0
Chrysanthemums, p. doz. ... 4 0-12 0	Marguerite, per doz. 6 0-12 0
— large plants, ea. 1 6-2 6	Mignonette, doz. pots 6 0-12 0
Cyperus, per dozen 4 0-10 0	Palms, various, each 2 0-10 0
Dracena, each ... 1 0-5 0	— specimens, each 10 6-84 0
Erica, various, per dozen ... 9 0-18 0	Pelargoniums, scarlet, p. doz. ... 4 0-6 0
	Solanums, per doz. 9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 3 0-6 0	Orchids:—
Asters, p. doz. bun. 6 0-9 0	Cattleya, 12 blms. 6 0-12 0
Bouvardias, per bun. 0 9-1 0	Odonatoglossum crispum, 12 blms. 2 0-6 0
Carnations, 12 blms. 1 0-3 0	Mignonette, 12 bun. 3 0-6 0
Chrysanthemums, p. doz. blooms 1 6-6 0	Pelargonium, scarlet, per 12 bun. 5 0-8 0
— p. doz. bunches 4 0-10 0	12 sprays ... 0 9-1 0
Eucharis, per dozen 3 0-6 0	Pr. mulla, double ... 0 6-0 9
Gardenia, per dozen 2 0-4 0	Pyrethrum ... 2 0-4 0
Heliotrope, per doz. sprays ... 0 6-0 9	Roses, Tea, per dozen 1 0-2 0
Hyacinth, Roman, doz. sprays 0 6-1 0	— coloured, dozen 1 6-3 0
Lilac, white French, per bunch 5 0-6 0	— yellow (Maréchal), per doz. 2 0-5 0
Lilium Harrisii, doz. 9 0-12 0	— red, per dozen 1 0-2 0
— various, do. ... 2 0-4 0	Stephanotis, 12 sprays 4 0-6 0
Lily of the Valley, doz. sprays 9 0-12 0	Tuberose, 12 blms. 0 3-0 9
Maiden Hair Fern, 12 bunches ... 4 0-6 0	Violets, Parme French, per bunch 3 0-4 6
Marguerite, per doz. bunches ... 3 0-4 0	— Czar, French, per bunch 1 6-2 0
Mimosa, French, per bunch ... 1 0-2 0	— small French, p. doz. bunches 1 6-2 0
	— small English, p. doz. bunches 2 0-3 0

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-2 0
Beans, French, lb. ... 1 0-1 6	Mustard and Cress, punnet ... 0 4-0 4
Beet, red, per dozen 2 0-3 0	Parsley per bunch ... 0 3-0 6
Carrots, per bunch ... 0 4-0 6	Shallots, per lb. ... 0 6-0 6
Cauliflowers, each ... 0 3-0 6	Spinach, per bushel 3 6-0 0
Cucumbers, each ... 0 4-0 8	Tomatoes, per lb. ... 0 6-1 0
Endive, per dozen ... 2 0-3 0	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOES.

Market still continues firm for best samples, 75s. to 85s.; dark soil, 52s. 6d. to 57s. 6d. *J. B. Thomas.*

SEEDS.

LONDON: Nov. 16.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., state that as regards American Red Clover Seed, which still constitutes the most interesting feature of the trade, last Monday's sudden advance on the other side of £4 per ton has enabled early English and French purchasers to sell under current trans-Atlantic rates. There is no change this week in either Alsike, White or Trefoil. In Rye-grasses the tendency is still upwards. For Winter Vetches there is just now very little inquiry. Koenigsberg Tares, being cheap and good, attract increased attention. Blue Peas are steady. Some choice new Dutch Haricot Beans are now obtainable at very tempting figures. Canary seed is featureless. Hemp seed keeps strong at the late advance. Very full prices are realised for Mustard. Rape seed continues cheap.

FRUITS AND VEGETABLES.

SPITALFIELDS: Nov. 15.—Quotations:—Cauliflowers, 2s. to 5s.; Savoy, 2s. to 3s. 6d.; Collards, 2s. to 2s. 6d. per tally; Seakale, 6d. to 1s. per punnet; Curly Kale, 1s. to 1s. 6d.; Spinach, 1s. to 1s. 6d. per bushel; Brussels Sprouts, 1s. 3d. to 1s. 9d. per half-sieve; Beetroot, 1s. to 2s. per sieve; Turnips, 2s. to 2s. 6d.; Carrots, 1s. 9d. to 2s. 6d.; Greens, 1s. to 1s. 6d.; Parsley, 1s. 6d. to 2s. per dozen bunches; Endive, 6d. to 1s.; Cabbage Lettuce, 4d. to 6d.; Leeks, 2s. to 2s. 6d. per dozen; Cos Lettuce, 6d. to 1s. per score; Celery, 6d. to 1s.; Horseradish, 1s. to 1s. 2d. per bundle; Mustard and Cress, 1s. 6d. to 1s. 9d. per dozen baskets; Onions, English, 5s. 6d. to 6s. per cwt.; do., Spanish, 5s. to 6s. 6d. per case; do., Dutch, 4s. 8d. to 5s.; do., Belgian, 4s. 6d. to 5s. per bag of 110 lb.; Carrots, 30s. to 50s. per ton; English Apples, 2s. to 6s. per bushel; American, do., 12s. 6d. to 18s. per barrel; English Tomatoes, 4s. to 5s. per peck.

BOROUGH: Nov. 15.—Quotations:—Cabbages, 3s. 6d. per tally; Cauliflowers, 9d. to 1s. 3d. per dozen; Brussels Sprouts, 1s. to 1s. 3d. per half-sieve; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 1s. 6d. per dozen bunches; English Onions, 6s. to 6s. 6d.; Dutch do., 5s. per cwt.; Horseradish, 2s. to 2s. 3d.; foreign do., 1s. 6d. per bundle; English Apples, 2s. 6d. to 10s. per bushel.

STRATFORD, Nov. 16.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 2s. to 4s. per tally; Savoy, 2s. 6d. to 4s. 6d. do.; Greens, 9d. to 1s. 3d. per sieve; do., 1s. to 1s. 6d. per dozen; Cauliflowers, 6d. to 1s. do.; do., 2s. 6d. to 4s. per tally; Turnips, 1s. 6d. to 2s. per dozen bunches; do., 25s. to 40s. per ton; Carrots, household, 42s. 6d. to 50s. do.; do., cattle-feeding, 32s. to 38s. do.; Parsnips, 9d. to 1s. per score; Mangolds, 16s. to 20s. per ton; Swedes, 20s. to 22s. do.; Onions, English, 100s. to 130s. per ton; do., Dutch, 4s. to 4s. 6d. per bag; do., Bordeaux, 6s. to 6s. 6d. per case; Apples, English, 2s. to 5s. per bushel; do., American, 12s. to 20s. per barrel; Brussels Sprouts, 1s. to 1s. 6d. per half-sieve; do., 2s. to 2s. 6d. per bushel; Celery, 9d. to 1s. 2d. per roll; Horseradish, 1s. to 1s. 6d. per bundle.

FARRINGTON: Nov. 17.—Quotations:—Turnips, 45s. to 50s. per ton; Sprouts, 1s. to 1s. 3d. per half-sieve; English Onions, 7s. per cwt.; Spanish do., 5s. 6d. to 6s.; Beetroot, 4s.; Carrots, 3s. to 3s. 3d. per cwt.; Apples, Canadian, 12s. to 16s.; English King Pippins, 4s. 6d. per bushel; Tomatoes, 2d. to 4d. per lb.; Grapes, 12s. to 16s. per barrel.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending November 12, and for the corresponding period last year:—1892: Wheat, 28s. 3d.; Barley, 27s. 4d.; Oats, 18s. 1891: Wheat, 37s. 2d.; Barley, 30s. 11d.; Oats, 21s. 4d.

NOTICES TO CORRESPONDENTS.

*** PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of readers.

ASPARAGUS: C. W. W. Having bought the roots, they will be best planted without delay, unless you are possessed of a lot of cold frames, when you might place them close together in light soil, and plant them in March. Of course, there must be no coddling of the roots, only keep them moist, and protected from frost by means of the lights. In the case of roots planted so late as November, all the injured roots rot more and more, and cripple the plants for a year.

BOOKS: J. H. *The Nursery Book*, by L. H. Bailey (New York Publishing Co.)—CHEMICAL MANURES: J. H. M. G. Ville's *Artificial Manures*, translated and edited by Wm. Crookes, F.R.S. (London: Longmans, Green & Co.)

CARNATION FUNGUS: H. G. This was first described and figured in our columns in 1870, p. 382, and since that time has been repeatedly figured. In

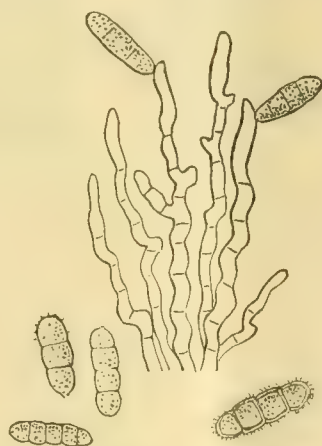


FIG. 94.—CARNATION LEAF DISEASE.

the *Carnation Manual*, Mr. C. Blick is stated to have got rid of the plague by frequent sponging the plants with weak solution of Gishurst Compound.

CARROTS: C. E. H. If these roots contain a poisonous property, which we doubt, it must be an infinitesimal quantity.

CATTELEYA: W. Cobb. We should suppose this Cattleya to be the Costa Rica C. Dowiana, and if that is so it is nothing extraordinary. If it came with C. Dowiana aurea from the C. Warszewiczii

country, then it is a departure. But even then it only serves to show that C. Dowiana and C. aurea are one and the same thing.

CEDARS: X. You will find that Solomon was not only a consumer of timber, but a planter also; see II. Chronicles, i., 15:—"And Cedar trees made he as the Sycamore trees that are in the vale for abundance." Such a proceeding was necessary, considering the wholesale felling that went on by his orders.

CHRYSANTHEMUM ETOILE DE LYON: J. H. A Japanese variety, raised by M. Boucharlat, in 1888. We have no information as regards the size to which a bloom of it has been grown.

CORRECTIONS: p. 594, for Grignon read Grimm; p. 581, for turf-road read turf-land.—N. C. S. Show, Mr. A. Ives, gr. to E. C. Jukes, Esq., should have been credited with showing La Deuil, a rosy red Japanese, and not Mr. Blick. The new incurved variety, Lucy Kendall, shown by Mr. Owen, of Maidenhead, and raised by Mr. J. P. Kendall, gr., Templeton, Roehampton, is a sport from Violet Tomlin, of a chestnut-red colour, and not a purple-red Japanese, as was stated in our report.

GRAPES FALLING FROM THE BUNCHES: J. W. If your Grapes are not very badly shanked, we should suppose that you may have watered the border heavily, or left it exposed to the late heavy rains. If the stalks of the berries are thin, brown, and shrivelled, and the juice sour, it is shanking, and you must examine the border for bad drainage, soured soil, or roots at a great depth.

GRUB: J. H. That of the smaller species of cockchafer. Turn over the ground with a digging-fork several times, the birds will then find them.

HORTICULTURAL EDUCATION: A. H. C. The Horticultural College, Swanley, Kent.

IRON STAKES: C. W. & Sons. The action of rusty iron has no effect on plants in contact with it, other than what might be caused by rubbing against it. That wounds caused in the rind of stem or shoot will, in bad cases, cause the loss of the shoot; but if the cause is timely removed, no evils will result. Iron, except in the form of soluble salts, has no value as a plant-food.

NAMES OF FRUITS: T. C. 1, Aromatic Russet; 2, Hornead Pearmain. Spray did not arrive.—Walter Parker. 1 and 5, Beurré Rance; 6, Beurré Diel; 7, Comte de Lam; 8, Easter Beurré; 11, Vicar of Winkfield; 12, Knight's Monarch; 15, Winter Nelis; 13, Lane's Prince Albert; the others are too small to be identified.—Amicus. 1, Beurré Diel; 2, Beurré Bachelier; 3, Duchesse d'Angoulême; 4, Josephine de Malines; 5, Winter Nelis; 6, Jules d'Airolles; 7, King of the Pippins; 11 and 12, Scarlet Nonpareil.—J. B. D. H. 1, Duke of Beaufort; 2, Royal Somerset; 3, not identified; 4, Warner's King; 7, Brabant Bellefleur; 5, not sure of.—Wm. Withes. Apple: Blenheim Orange.—Wm. Higgie. Apple: Col. Vaughan.—H. & Sons. The Damsons are too small for recognition. Send shoots and leaves with fruit another year.

NAMES OF PLANTS: D. Davis. Physalis Alkekengi, Winter Cherry.—Worksop. The scarlet-fruited Thorn, Crataegus coccinea.—E. D. L. 1, Doodia caudata; 2, Dicksonia punctilobula; 3, Sericographis Ghiesbreghtiana; 4, 5, and 6, next week.—H. J. R., Florence. Pleione Wallichiana.—C. H. 1, Adiantum tenerum; 2, Cyrtomium Caryotidum; 3, Blechnum occidentale; 4, Gymnogramma ochracea; 5, Davallia bullata; 6, Davallia Tyermanii. The damp moss had almost obliterated the numbers.—B. Williams. We do not undertake to name florists' flowers.

PARSNIP EATEN BY INSECTS: T. B. Wireworms, or grubs of the cockchafer, or weevil. The insect sent had escaped. Dress the land with gas-lime some months before putting a crop on it, or dig it over frequently, so as to bring the grubs within reach of the birds.

PEA HAULM 15 FEET HIGH: G. B. A very unusual height for a culinary Pea to grow.

PRUNING: W. W. Raspberry Canes.—The best of these should be left, to the number of four to seven, on a stool, cutting the remainder away at the ground level. If the stools are 5 feet apart, the canes may have their tips cut off, and be slightly twisted together, and brought over the half of the canes from each stool, and tied to a stout stake driven into the soil midway between the stools. The fruit will then have full sun-

shine, and is readily gathered. There are some modifications of this method. Sometimes Raspberries are planted 1 foot apart, and fastened to two or three lines of iron wire. Market growers use no stakes, but top the plants at about 4 feet from the ground, and as field-grown canes are usually shorter and stouter than those grown in gardens, this method answers well enough. Apples on espaliers—need at this season to have the summer shoots, that were shortened somewhat in July, cut back to within half to 1 inch of their base, but all or most fruit buds should be reserved. The unripe tips of the leading branches should be cut off, unless rapid extension is desired. Some varieties of Apples have long fruit spurs terminating, say, from 3 to 5 inches. These should not be cut back; it is easy to recognise them by the plumpness of the terminal buds. Summer pruning consists in the shortening back of the current season's growth to half its length, entirely cutting out that which is weak. If fruit spurs are closer together on the rods than 6 inches, cut off where most crowded down to the old wood, making quite smooth wounds, and if the spurs are very long, as they will often be from age, cut every one off smoothly, and the branches will bristle with shoots the next year, when you must choose those to be retained, cutting the other clean away. Apricots.—The tree should have the greatest part of its pruning done in the summer, with the finger and thumb, never using the knife if you can help it. It bears on spurs like sweet Cherries or Apples, and on 1-year old wood. This 1-year-old wood may be shortened at the winter pruning if it be too long, or there is a want of wood somewhere about the base of these shoots. Much diligence is required in the summer in keeping Apricots in order by stopping shoots that are not wanted, and laying in those that are.

ROSES: *W. G. Rosa canina* is a British species, raised from seed, cuttings, or suckers. *Rosa Manetti* is a seedling from some garden variety raised by Signor Manetti, of the Botanic Garden, Monca, and introduced to this country by the late T. Rivers, of Sawbridgeworth, about forty-five years ago.

ROSES FOR PLANTING UNDER GLASS: *G. S. Yellow:* Maréchal Niel and *W. A. Richardson;* *White:* Lamarque; *Red:* August Rigotard; *Pink:* Cheshunt Hybrid and Catherine Mermet.

SPELLING: *W. M. & Co.* The best authorities spell the words Gros Colman, others Gros Colmar, and Gros Golman. All of these are probably French corruptions of the German Gros Kölner or Grosser Koelner.

TOMATOS: *X.* You will find an attempt at a classification of the Tomatos on p. 273 of our Number for August 29, 1885, with illustrations. We have not pursued it further, but it might be useful to use as a basis.

TOMATO IMPORTATION: *R. G. W.* There are no data as to the quantities imported, and for prices we must refer you to our market reports.

TREES FOR EXPOSED PARTS OF THE COTSWOLDS: *N. Bell.* Austrian Pine, Abies Pinsapo, Pinus Pinaster, *P. resinosa*, common Beech, Hornbeam, Pseudotsuga Douglasii, where sheltered by the outer lines of trees; Yews of all kinds; Cupressus macrocarpa and its varieties; *C. Nutkaensis*, *C. sempervirens*, where sheltered by other trees; Crab, Sloes, Bullace, common Oak and Firze if sown; Elder, and Beech grown as copse wood, and cut down to a stool when it reaches 15 to 20 feet, should form with Austrian Pine the outer lines of plantations. Dig the ground, breaking up the subsoil with a pickaxe, but not burying the fertile top soil. Plant thickly and thin out early.

COMMUNICATIONS RECEIVED.—*A.* Outram.—*R.* Hollister.—*C. H. G.*—*C. A. M.*—*C. W. W.*—*O. T.* Wandsbeck.—*G. W. S.* Granada.—*H. P.* New Orleans.—*A. de M.* Ghent (previously published).—*A. D.*—*J. W.*—*W. H.*—*W. E. G.*—*Messrs. Sutton & Sons.*—*T. T.*—*A. D.*—*J. J.*—*W. E. D.*—*J. D. S.*, Baltimore.—*W. R.*—*J. O. B.*—*C. T.* & Sons.—*J. R.*—*A. P.*—*Vicomte de St. L.*—*W. W.*—*M. E. M.*—*Chas. De B.*—*J. Towler.*—*Ed. Webb & Sons.*—*C. D.*—*Powell* (too late).—*W. E. D.*—*J. J. W.*—*J. C. W.*—*Fisher.*—*T. C.*—*J. H.*—*S. P. O.*—*J. E. S.*—*Pulham & Sons.*—*W. D.*—*A. F.*—*J. S.*—*Whitehead Cousins.*—*J. B. W.*

PHOTOGRAPHS RECEIVED, WITH THANKS.—*J. G.* Bawtry.—*F. S.*, Bishop Auckland.—*H. P.*, New Orleans.—*W. E. D.*—*C. W. H. G.*—*J. D. S.*, Baltimore.

SPECIMENS RECEIVED.—*W. S.*—*G. B.*

FRUITS RECEIVED.—*J. E. N.*—*E. G.* Allen.—*C. W. S.*—*F. D. & J.*



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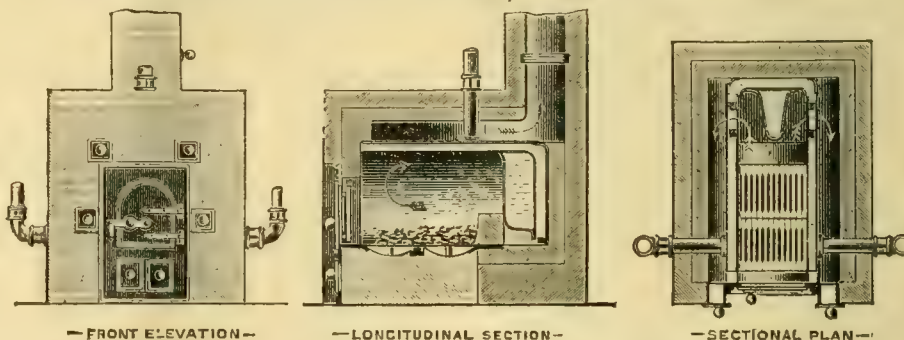
And others with SHELVES, and HOLLOW or ORDINARY CAST-IRON GRATE BARS.

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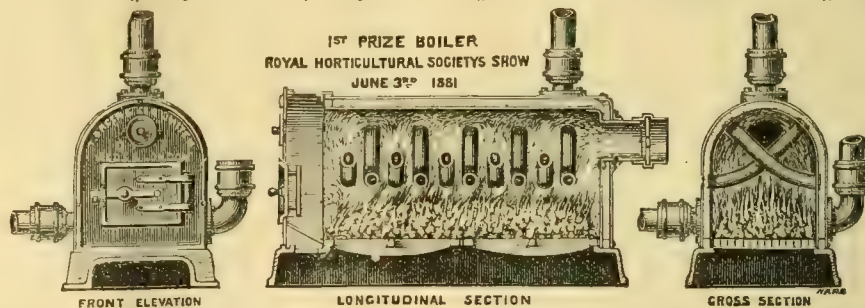
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M B 1	4 0 " by 2 0 " by 2 0 "	Calculated to	1280	" 21 0 0
M B 2	5 0 " by 2 3 " by 2 6 "	heat 4-in. piping	2200	" 31 0 0
M B 3	6 6 " by 3 0 " by 3 0 "	as follows:—	4000	" 60 0 0
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C	1 9	by 3 6	by 2 0	800	22 0 0
D	1 9	by 4 0	by 2 2	1100	29 0 0
E	2 0	by 4 6	by 2 4	1400	38 0 0
F	2 3	by 5 0	by 2 6	1750	43 0 0
G	2 6	by 5 6	by 2 6	2040	50 0 0
H	2 9	by 6 0	by 2 6	2500	60 0 0
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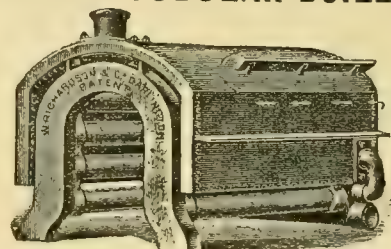
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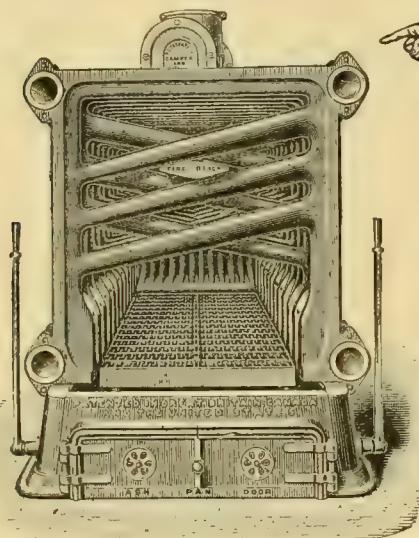
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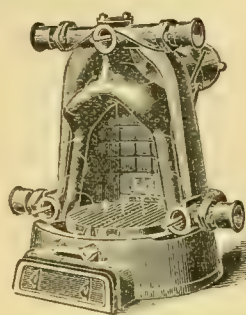
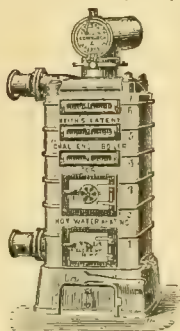
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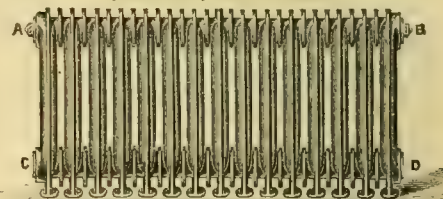
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Monday Next.

3.4 AZALEA INDICA, of sorts, including a few extra fine plants; 100 AZALEA MOLLIS, RHODODENDRONS and other Plants from Belgium, STOVE and GREENHOUSE PLANTS in variety, 200 Dwarf ROSES, an assortment of NARCISSUS and HARDY BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, November 28, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Tuesday Next.—The Celebrated Maplewell Collection of MASDEVALLIAS.

and a few other choice ESTABLISHED ORCHIDS. IMPORTANT UNRESERVED SALE by order of the executors of the late Sir William Salt, Bart.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 29, 1892, at half-past 12 o'clock precisely, the ENTIRE COLLECTION of MASDEVALLIAS, probably the most complete that has ever been submitted to the hammer, and comprising many rarities. The plants are in perfect health, and consist for the most part of fine examples. Amongst them will be found the following:—

Masdevallia racemosa	Masdevallia fulvescens
„ platyglossa	„ glaphyantha
„ elephanticeps	„ Mearesiana
„ pachyantha	„ falcata
„ ignea Echardi	„ gargantua
„ Davis	„ Gaskelliana
„ Schröderiana	„ Goireana
„ Heathi	„ gemmata
„ Mooreana	„ Roelzi auriferum
„ muscosa	„ Carderi
„ Hinksiana	„ Wendlandiana
„ Ellisiana	„ Harryana, including the
„ Lauchiana	„ very finest varieties,
„ Rolfeana	„ such as rotundifolia,
„ Geleniana	„ Thompson's Scarlet,
„ cucullata	„ armenica, grandis,
„ Armini	„ Bull's Blood, mirabilis,
„ Courtauldiana	„ Comet,

and OTHERS.

Also an assortment of choice CATTLEYAS, LELIAS, ODONTOGLOSSUMS, ONCIDIUMS, and other Orchids.

On view morning of Sale, and Catalogues had.

Wednesday Next. Plants and Bulbs.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on WEDNESDAY NEXT, 30 lots of KENTIAS and ASPIDISTRAS from an English Nursery, a very fine assortment of the best known English-grown LILIES, including Brownii, Szovitzianum, and many others; SPIREAS, Chinese Sacred LILIES, LILY OF THE VALLEY, Double SPIREAS COMPACTA MULTIFLORA, DIELYTRAS, TRITOMA UVARIA, and 1000 LENT LILIES, 1000 LILIUM CANDIDUM, splendid Bulbs, all English-grown.

Wednesday Next.

JAPANESE LILIES.—GREAT CONSIGNMENT OF 200 Cases of LILIUM AURATUM

and other sorts, comprising

10,600	LILIUM AURATUM
420	„ SPECIOSUM MELPOMENE
1400	„ „ RUBRUM
560	„ „ ALBUM
2580	„ LONGIFLORUM
500	„ KRAMERI

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 30.

On view morning of Sale, and Catalogues had.

Cliffe, near Rochester.

SECOND PORTION of Mr. Horne's Immense STOCK. IMPORTANT TO FRUIT GROWERS, MARKET GARDENERS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions to hold a Great FRUIT TREE SALE, on the Premises, Perry Hill, Cliffe, near Rochester, on WEDNESDAY NEXT, November 30, comprising:—

- 2,500 of the New Dessert APPLE Beauty of Bath.
- 500 one and two-year Bismark's (New) APPLE.
- 20,000 Standard, Half-standard, and Maiden APPLES.
- 25,000 Bob and Lad GOOSEBERRIES.
- 25,000 Baldwin BLACK CURRANTS.
- 2,400 John Ruskin STRAWBERRIES, for forcing.
- 75,000 Paxton, Noble and John Ruskin STRAWBERRIES, from open ground.
- 30,000 Sir John Fal-taff, Carter's Prolific, and Semper Fidelis RASPBERRIES.
- 25,000 three-year Connover's Colossal ASPARAGUS, &c.

May be viewed. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Hounslow, re J. & G. Bannister.

ABSOLUTE SALE of the LEASE, STOCK, and FURNITURE, by order of the Official Receiver.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises The Nurseries, Staines Road Station (ten minutes' walk from Hounslow and Heston stations), on WEDNESDAY, November 30, at 12 o'clock, without reserve, 5800 PALM LARGONIUMS, 4000 FUCHSIAS, 2100 CHRYSANTHEMUMS, 2000 PTERIS CRISTATA, and other PLANTS Useful Bay Mare, Spring Market Van, Tumbler Cart, and Set of Harness. Also, in one lot, the Lease for 95 years of the Nursery, comprising about 2 acres of ground, newly-erected Greenhouse, 550 feet in length, with about 1450 feet of 4-inch piping. Also 50 lots of useful Household Furniture, Cottage Pianoforte, Walnut Drawing Room Suite, &c.

May now be viewed. Catalogues had on the Premises, of C. Mercer, Esq., Official Receiver, 95, Temple Chambers, Temple Avenue, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Thursday Next.

KENTIAS and other PALMS in pots for Decoration and the Conservatory; Choice STOVE and GREENHOUSE FERNS; 200 Dwarf ROSES; CHINESE PEONIES; CARNATIONS, HARDY BULBS in great variety, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, December 1, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Expiration of Lease.

THIRD CLEARANCE SALE of CHOICE ORCHIDS.

UNRESERVED SALE.

From Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, Yorks, and Clapham, S.W., comprising—

CATTLEYA LABIATA, with sheaths; LELIA PURPURATA, LELIA GRANDIS TENEBROSA, the true variety; ODONTOGLOSSUM CRISPUM (ALEXANDRE), Pachio type; O. PESCATOREI, ODONTOGLOSSUM in varieties, ONCIDIUMS, MASDEVALLIAS, CYPRI-PIDIUMS, &c.

FOR SALE by AUCTION, by

MESSRS. PROTHEROE AND MORRIS, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, December 2, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next—Orchids in Flower.

MESSRS. PROTHEROE AND MORRIS will include in their SALE, on FRIDAY NEXT, 100 lots of ORCHIDS IN FLOWER, from two private Collections, including well-grown Plants and Choice Varieties.

Tuesday, December 6.

IMPORTED ORCHIDS from Mr. F. Horsman.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Rooms, on TUESDAY, December 6, an importation of Orchids, of about 400 lots.

Teddington—Freehold Nursery.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on WEDNESDAY, December 7, the Freehold Nursery, situate in the rear of Walpole Road, Teddington, with three Greenhouses, heated by hot-water-piping, stabling, and sheds standing thereon, let to Mr. Pollington, on lease, at £25 per annum.

Particulars may be had at the Mart; of Messrs. KERLEY SON AND VERDEN, solicitors, 14, Great Winchester Street, E.C.; and of the Auctioneers, 67 & 68, Cheapside, London, E.C.

GREAT NORTHERN RAILWAY.

10,000 ORCHIDS,

AMONG THEM MANY SPECIMENS OF EXTRAORDINARY SIZE. THE WHOLE IN SUPERB CONDITION.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. F. Sander & Co., St. Albans, to SELL by AUCTION, on FRIDAY, December 9, about

10,000 ORCHIDS.

The whole are extra fine plants and among them are specimens of unusual size and value.

In consequence of the erection of a Railway Station on the Nursery Premises by the Great Northern Railway Company, Five Orchid Houses are being pulled down—and hence this enormous lot of Orchids are offered WITHOUT THE LEAST RESERVE.

Thousands of Cattleyas and Odontoglossums will be included, and a host of rare Orchids and big specimens, a list of which will be published next week.

Dutch Bulbs.—Great Unreserved Sales.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, and SATURDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY DAY NEXT WEEK, at 12 o'clock, large consignments of first-class—

NARCISSUS, CROCUS, HYACINTHS, TULIPS, and other Bulbs from Holland. Lotted to suit the Trade and Private Buyers. About 3500 lots, without reserve.

On view morning of Sale, and Catalogues had.

Cheshunt.—Great Sale of Fruit Trees.

Important to FRUIT GROWERS, MARKET GARDENERS, and GENTLEMEN requiring FRUIT TREES for planting to bear next season.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. T. & G. Oyler (who are compelled to clear the ground), to SELL by AUCTION, on the Premises, the Elms Fruit Ground, Park Farm, Cheshunt, 1½ mile from Cheshunt Station, on TUESDAY, December 13, at 12 o'clock precisely, 17,000 clean-grown Bush and Standard FRUIT TREES, 4 to 6 years old, all in splendid condition for transplanting, consisting of Lord Suffield, Wellington, Early Julian, Keswick Codlin, King Pippin, Hawthornden, Warner's King, and many other Apples; 300 Pond's Seedling Plum, Victoria, New Orleans, and other varieties; and about 6000 William, Hazel, Calabash, Beurré de Capiaumont, and other Pears.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; of Messrs. T. AND G. OYLER, Spitalfields Market; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The Auctioneers desire to call attention to this important Sale. The trees have been grown by Messrs. Oyler expressly for planting in their own grounds, and consist of such varieties as they have found from their experience to be most profitable for market purposes. The trees have been specially prepared for removal to the new Farm which the Vendors were about to take, but the negotiations having fallen through, with regard to planting it with trees, Messrs. Oyler are compelled to sell them for want of room.

Choice Bulbs from Holland.

MR. J. C. STEVENS will SELL by AUCTION, every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY, at his Great Rooms, 38, King Street, Covent Garden, W.C., grand importations of choice BULBS arriving daily from renowned Farms in Holland, in excellent condition, and lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Tuesday Next.

SPECIAL SALE OF DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, November 29, at half-past 12 o'clock precisely, a large importation of BULBS from Holland, specially lotted for all Buyers, comprising choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, ANEMONES, &c.; 1000 SPIRÆA JAPONICA, LILIUMS, GLADIOLI, LILY OF THE VALLEY, PEONIES, &c.

On view morning of Sale, and Catalogues had.

Wednesday Next.

LILIUMS FROM JAPAN, &c.

750 Grand Bulb of LILIUM AURATUM, from 12 to 15 inches circumference; 1000 smaller, ditto; 1500 L. LONGIFLORUM EXIMUM (extra large); 600 L. KRAMERI, L. SPECIOSUM ALBUM and L. S. RUBRUM, just received in splendid condition; 40,000 Berlin LILY OF THE VALLEY Crowns; 2000 Clumps of ditto; 5000 SPIRÆA JAPONICA, 1000 DIELYTRA SPECTABILIS, 200 DWARF ROSES, BORDER PLANTS, Choice IKIS, DAFFODILS, PEONIES, EICUS ELASTICA, and AZALEA MOLLIS, from Ghent, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 30.

On view morning of Sale, and Catalogues had.

Tottenham.—To Nurserymen, Florists, and Others.

By Order of the Mortgagee.

Long LEASEHOLD DWELLING-HOUSE, known as No. 1, Percy Villas, Northumberland Grove, close to two stations on the G. E. R., containing 7 Rooms and Domestic Offices. Also the NURSERY IN REAR, well-stocked with matured Fruit Trees, with TEN Well-heated GREENHOUSES, containing in the aggregate 500 feet run, with Vines, &c., in full bearing; Coach-house, Stable, and Shed. The whole embracing an area of about 1 Acre; Lease 14½ years unexpired.

Rent £35 per annum; Po session on completion.

MR. ALFRED RICHARDS will SELL the above by AUCTION, at the "Rose and Crow Inn," Tottenham, on WEDNESDAY NEXT, November 30, at 7 o'clock precisely.

Particulars of Messrs. PYKE AND VOULES, Solicitors, 85, Gracechurch Street, E.C.; and of the Auctioneer, 816, High Road, Tottenham, and 18, Finsbury Circus, London, E.C.

By Order of the Executors of the late

JOHN GODDARD, Esq.

About 1200 ORCHIDS, including fine specimens of the following varieties, Cattleya crispa, C. Gaskelliana, C. Skinneri, C. Mendeli, C. Amethystoglossa, Lelia purpurata, Cologne cristata, Dendrobium densiflorum, Brassava Digbyana, Oncidium Cavendishianum, O. obyzantum, Epidendrum Stamfordiana, Odontoglossum Alexandria, O. Karwinski, and many others.

MESSRS. BAXTER, PAYNE AND LEPPER have received instructions to SELL by AUCTION, on the Premises, Elmer Lodge, Croydon Road, Beckenham, on FRIDAY, December 2, at 10 for 11 o'clock, the above-named ORCHIDS, and a quantity of GREENHOUSE PLANTS, and other Effects.

May be viewed, and Catalogues obtained of BAXTER, PAYNE AND LEPPER, Land Agents and Surveyors, Bromley and Beckenham, Kent; and 69, King William Street, E.C.

WANTED, a PARTNER, in the SEED

TRADE.—Exceptional advantages offered to any Gentleman with Capital.—Full particulars of "SEEDS," *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

WANTED, TO RENT, on LEASE, with

OPTION OF PURCHASE, 1 or 2 Acres of GRASS LAND.—State particulars, and distance from rail, to A. M., 47, Aberdeen Road, Upper Edmonton.

WANTED TO RENT, about an ACRE of

GROUND, with a few GREENHOUSES, well heated; and small Dwelling-house, from 8 to 12 miles from Covent Garden.—S. T. C., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a HEAVY ROLLER, suitable

for two Men to handle, for Lawn purposes.—Address, LAVINGTON, Putney Heath, S.W.

TO NURSERYMEN.—Advertiser is open to

INVEST CAPITAL in a thoroughly genuine Nursery Business.—Address, C. P. J., Brooklet, Hamworth Road, Hampton.

Warwickshire.—Erdington Hall Estate.

TO BE LET, an excellent FARM, situate within 3 miles of Stephenson Place, Birmingham. There is a large House and extensive Buildings, and the Land is well adapted for Market Gardening, being close to the City. It consists of Arable and Pasture Land, and is about 173 Acres.

For Rent and Particulars, apply to Messrs. J. C. FOWKE AND SON, Solicitors, 120, Colmore Row, Birmingham.

TO BE LET, or SOLD, with Immediate Pos-

session, at a great sacrifice, a compact OLD ESTABLISHED NURSERY. Nine Houses. Low Rent. Long Lease. Pony and Van.—Apply, Grove Street Nursery, Upper Edmonton.

TO LET, owing to ill-health, a Genuine SEED

and FLORIST BUSINESS, in good Market Town, 21 miles from London. Splendid position in main street. Small Nursery, containing four Greenhouses. Stock and Goodwill at valuation.—W. G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

EXPIRATION OF LEASE.

THIRD CLEARANCE SALE OF CHOICE ORCHIDS.

(UNRESERVED SALE.)

From Messrs. CHARLESWORTH, SHUTTLEWORTH & CO.,
Of HEATON, BRADFORD, YORKSHIRE, and CLAPHAM, S.W.,

COMPRISING

CATTLEYA LABIATA, with Sheaths; LÆLIA PURPURATA, LÆLIA GRANDIS
TENEBROSA, the true variety; ODONTOGLOSSUM CRISPUM (ALEXANDRÆ),
Pacho Type; O. PESCATOREI; ODONTOGLOSSUMS in varieties; ONCIDIUMS,
MASDEVALLIAS, CYPRIPEIDIUMS, &c.

FOR SALE BY AUCTION, BY

MESSRS. PROTHEROE AND MORRIS, at their Central Sale Rooms,
67 & 68, Cheapside, E.C., on FRIDAY NEXT, December 2, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

NURSERY TO LET, 8 miles from Covent
Garden; 6 Greenhouses, heated with hot water, and
a quarter of an acre of Land.—Apply to G. E., *Gardeners'*
Chronicle Office, 41, Wellington Street, Strand, W.C.

TO BE LET, in the neighbourhood of Finchley,
close to station, 2 Acres of good GARDEN, containing
many Greenhouses, Stables, Potting Sheds, Toolhouses, &c.
Rent, £45.

V., 49, Southampton Row, London, W.C.

TO BE SOLD, EIGHT YEARS' LEASE,
8-Roomed House, Rent £26; 40 feet Vinery and other
Glass; Stable, Plants, Trees, and Small Gardening Business.
No reasonable offer refused if sold at once.—A. B., Mr. Fuller,
Newsagent, North Finchley.

Fruit-Grower and Nurseryman's Business.

SALE or PARTNERSHIP.—Important Town.
Three acres of choice Freehold Land; about 560 feet
run of Glass-houses, besides Pits, all heated. Price, including
Freehold, £1500; half-share, £800 to £1000; or would Let on
Lease. Stock, about £150. Good trade.—Address X., *Gardeners'*
Chronicle Office, 41, Wellington Street, Strand, W.C.

OFFERS INVITED for a quantity of 15-oz.
English-made GLASS, in panes, 8½ x 6½, 9½ x 6½, 10 x 8,
and 12 x 10. New.
WINTER, Mill Hill Road, Acton, London, W.

Chrysanthemums.

ROBERT OWEN, F.N.C.S., Floral Nursery,
Maidenhead, Importer, Raiser, and Grower of
NEW AND CHOICE CHRYSANTHEMUMS.
The Largest and Best Collection in Europe.
Awarded 150 First-class Certificates and Eight Medals.
Catalogue Free.

All Latest Novelties distributed in early Spring.

Lists ready early in January.

400 SPRUCE FIRS, in best possible
condition for planting, or Christmas Trees, 2 to
2½ feet, 20s.; 2½ to 3½ feet, 25s. per 100; per dozen, 4s. and 5s.,
free on rail.
J. PAYNE, Florist, Ash Vale, Aldershot.

CHRYSANTHEMUMS.—Fifty best sorts,
for cutting, true to name. Cuttings, 1s. 6d. per dozen.
Sample blooms, 1s. 3d. per dozen, post-free.

J. PAYNE, Florist, Ash Vale, Aldershot.

DOBBIE'S ROSES, CHRYSANTHEMUMS,
and DAHLIA POT ROOTS.—A special CATALOGUE
of these is Now Ready, and can be had post-free on application.
Growers would find it to their advantage to see this before
placing their orders.—DOBBIE AND CO., Florists, Rotherham.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD AND NURSERIES,
CARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS,
FERNS, &c., &c.

CATALOGUES, with full particulars, post free
on application.

Special Quotations to the Trade.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to SANDER'S, St. Albans. The finest
stock of Orchids in the World.—30 minutes from St. Pancras.

ROSES.—Standard, Dwarf, and Climbing for
Conservatories, of the finest quality.
FRUIT TREES of best varieties. CLEMATIS of leading kinds.
EVERGREENS for planting.

CUPRESSUS, grown in wire baskets, to ensure safe removal.

LAURELS, 5 to 7 feet high, and heavy.

Specimen SPANISH CHESTNUTS and WALNUTS, and

Dwarf-trained Victoria PLUMS, 8 feet by 10 feet.

Mountain ASH, Forcing RHUBARB, GOOSEBERRY and

CURRANT TREES at lowest prices.

JOHN PEED AND SONS, Streatham, S.W.

OLD CRIMSON CLOVE and GLOIRE DE
NANCY CARNATIONS.—Several thousand strong
rooted layers, Cheap.
C. JOHNSON AND CO., The Nurseries, Hampton, Middlesex.

CARNATIONS.—Germania, 65s.; Mrs.
Reynolds Hole, 35s.; Baby Castle, 15s.; Wallace Bond,
3s.; Old Crimson Glove, White Glove (Lord Salisbury), 12s. 6d.
Gloire de Nancy, 35s. per 100.
HOPKINS, Mere, Knutsford.

FOR SALE, Five Dozen POINSETTIA
HEADS, very fine.

HEAD GARDENER, Hillcrest, Market Harborough.

ROSES FROM DEVONSHIRE.
Finest Bush Hybrid Perpetuals, 6s. per doz. Strongly
rooted.

Sellers' selection, strongest plants. Carriage and postage free.
Cash with order. ROSE CATALOGUE FREE on application.
Buyer's selection at Catalogue prices.

CURTIS, SANFORD AND CO., Devon Rosery, Torquay.

CHEAP BULBS AND SEEDS.—Single
Daffodils, 8s. and 5s.; Double Snowdrops, 15s. and 10s.;
Single, 14s. and 9s.; Double White Narciss, 14s. and 9s.;
Biflorous Twin Narciss, extra large, 10s.; Star of Bethlehem
and Pheasant-eye Narciss, 8s. per 1000. Clayworth Pride Pink
Celery, 2s. 6d.; Retford Giant White, 3s. 6d.; Grove Red,
2s. 6d. per lb. These are the three best varieties out.
Telegraph Cucumber (stock can warrant), 2s. per 100, 14s.
per oz.; Clumber Seedling, 2s. 6d. per 100, 16s. per oz. Cash
with order.—G. YORKE, Bulbist and Seedsman, Retford.

PANCRATIUMS.—10,000 grand Bulbs, just
arrived: P. Guianense, P. Amœnum, P. grandiflorum,
40s. per 100; 6s. per dozen. LILY OF THE VALLEY, half a
million, best Berlin 3-yr. old Crowns, for forcing, 33s. per 1000;
3s. 9d. per 100. FRESIA REFRACTA, half a million, just
imported, splendid bulbs, 30s. per 100; 3s. 9d. per 100. All
other Bulbs at Wholesale Prices. LISTS free.

J. JAMES, Importer, New Malden, Surrey.

CHEAP
PALMS.—PALMS.—PALMS.
150,000 ON VIEW.

J. W. SILVER begs to call attention to his
immense Stock of PALMS and ASPIDISTRAS, in all
the leading kinds, and in all sizes. Many fine specimens to offer.
SILVER'S CELEBRATED COLLECTIONS of 18 PALMS, in
6-inch pots, for 18s., and in 3-inch pots, for 6s.—all splendid kinds,
healthy, and well established—is the greatest bargain ever
offered. Wholesale and Retail. Catalogues free.

J. W. SILVER, Streatham & Norbury Nurseries, S.W.

ROSES, 30,000.

GUARANTEED BEST SORTS GROWN,
and true to name. These will thrive and bloom satisfactorily
where those tried on the Manetti stock do not exist.

12 good H.P. Roses on seedling Briar, my selection, 5s. 6d.;
24, 10s. 6d.; 100, 37s. 6d. 12 Teas, 9s. Extra good Maréchal
Niels, 1s. 6d.; 6 for 10s.

Carriage free for cash with order. Catalogues on application to

R. W. PROCTOR,

ROSE GROWER, CHESTERFIELD.

EXHIBITIONS.

KINGSTON and SURBITON CHRYSAN-
THEMUM SOCIETY.

President: G. C. SHERRARD, Esq., J.P.

The SEVENTEENTH ANNUAL EXHIBITION will be held
on TUESDAY and WEDNESDAY, November 7 and 8, 1893.

GEO. WOODGATE, Hon. Sec.

FOR SALE, a quantity of fine Specimen
SPRUCE and SCOTCH FIRS for Christmas Trees,
cheap.—E. TANNER, Groombridge, Tunbridge Wells.

2,000 Covent Garden Favourite Cucumber
Seeds for Sale. Warranted true Stock. Price on
application to SOUTHGATE, Victoria Gardens, Chelmsford.

CYPRIPEIDIUM INSIGNE.—For Sale, a
Bargain, thirty fine plants, twenty will shortly flower.
What offer?—NIX, Hillsboro Nursery, Landell's Rd., Dulwich.

ROSES—ROSES—ROSES.
10,000 to select from, strong healthy plants, in 60 sorts.
GRAY AND SON, Brox Nursery, Chertsey.

SEAKALE for Forcing, superior selected
Crowns, 8s. per 100; strong Crowns for Planting, 6s. per
100.—J. DIXON AND SON, Spencer Park Nursery, North Side,
Wandsworth Common, S.W.

To the Trade.

OAKS.—20,000 1-yr., stout, 5s. per 1000.
Do., 10,000 15 in. to 2 ft., transplanted, 12s. 6d. per 1000.
ACORNS, 4s. 6d. per cwt., 80s. per ton. Cash.
THOS. BEAUCHAMP, Woodfalls, Downton, Salisbury.

SEAKALE, BAGLEY'S INCOMPARABLE.
—For forcing, this is really grand stuff. Sample only
need be sent for to ensure order. Special quotations for large
quantities.—Apply to W. BAGLEY, Millsot Farm, Fulham.

BERLIN LILY OF THE VALLEY for
Forcing, quality unsurpassed in the Trade, 35s. per 1000,
4s. per 100. LILIAM AURATUM, direct importation from
Japan, 30s. per 100; 5s. per dozen.
WALSHAW AND SON, Scarborough.

WINTER FLOWERING PLANTS. { HEATHS, EPACRIS,
LILACS, GENISTA, CYCLA-
MENS, PRIMULAS, BOUVARDIAS,
CAMELLIAS, AZALEAS, &c.
Splendidly set for Bloom.

PRICES ON APPLICATION.

DICKSONS NURSERIES CHESTER
(LIMITED)

SPECIAL TRADE OFFER,
at reduced prices, as follows, all fine healthy trees:—

500,000 RHODODENDRONS, from 2 to 4 feet.
ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet,
9 to 10 feet.

Mountain, 3 to 4 feet, 6 to 7 feet, 9 to 10 feet, 10 to 12 ft.

BEECH, Common, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 10 to 12 ft.

BIRCH, 9 to 10 feet, and 10 to 12 feet, fine.

CHESTNUTS, Horse, 3 to 4 feet, 5 to 6 ft., 8 to 9 ft., 9 to 10 ft.

ELM, 3 to 4 feet, 6 to 8 feet, 9 to 10 feet, stout.

LIMES, red twigged, 6 to 7 feet, 8 to 9 feet, 9 to 10 feet.

PLUMS, Weymouth, from 2 to 6 feet, various sizes.

POPLARS, 3 to 4 feet, intermediate sizes up to 10 feet.

PRIVET, oval-leaf, 2 and 3 feet; evergreen, 3 to 4 feet.

THORN QUICK, many hundred thousand, from 4 to 6 years
old, very strong; SYCAMORE, 6 to 10 feet; LILACS,
PINES, Austrian, from 3 to 6 feet, fine trees; AUCUBAS,
LAURELS; HOLLIES, various; BERBERIS AQUI-
FOLIA, 1½ to 2½ feet; BOX, YEW, ELDER, golden;
IVIES, and General NURSERY STOCK.

For prices, &c., apply to ISAAC MATTHEWS AND SON,
The Nurseries, Milton, Stoke-on-Trent.

N.B.—Rhododendrons, early-flowering varieties, from 15 in.
to 2½ feet, full of buds, at special low prices, for forcing. Over
50,000 to select from. Inspection invited.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES
OF THE VALLEY in the Kingdom, offers 3-year-old
flowering Crowns for forcing, and 2 and 1-year-old Crowns for
planting out, of unsurpassed quality. Hundreds of testi-
monials. Time of sending out, November 1 to May 1. Prices
and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appoint-
ment to H.R.H. the Prince of Wales), Dersingham, King's
Lynn, Norfolk.

NEW CHRYSANTHEMUMS.

NORMAN DAVIS

Begs to intimate that he has among the New
Chrysanthemums of the present season, several
of exceptionally fine quality, including the two
magnificent New Crimson Japanese—

WILLIAM SEWARD & J. SHRIMPTON,

the finest introductions of recent years, and which
will be distributed by him during the coming
spring. CATALOGUE ON APPLICATION.

CHRYSANTHEMUM NURSERIES,

LILFORD ROAD, CAMBERWELL, LONDON, S.E.

London County Council.
PARKS AND OPEN SPACES DEPARTMENT;
ASSISTANT TO THE CHIEF OFFICER.

THE LONDON COUNTY COUNCIL is about to APPOINT an ASSISTANT to the Chief Officer of the Parks and Open Spaces Department. The duties attached to this post will be to Assist the Chief Officer in matters relating to Horticulture in the various Public Parks and Gardens in London, and in Supervising and Directing the Management of the Open Spaces, and the Laying-out of New Grounds, and generally to act in Outdoor-work, under the direction of the Chief Officer. Applicants must therefore possess a thorough knowledge of the science and the practice of Horticulture, and general experience in the Management of Parks and Gardens.

The salary attached to the office is £300 a year, but there will be no superannuation or pension. The office will be held during the pleasure of the Council, and the holder will be required to give his whole time to the duties of his office and will not be allowed to take any private business, to hold any other appointment, or to occupy any other paid position. Applications, containing particulars of the qualifications and experience of the applicant must be on the forms to be obtained at this office, and must, with copies of recent testimonials attached, be addressed to "The Clerk of the London County Council, Spring Gardens, S.W.," and be endorsed on the outside "Assistant Superintendent, Parks."

They must be delivered here not later than 10 A.M. on the morning of December 9, after which time no application will be received. Any application which does not contain all the particulars above-mentioned, or which in any other respect fails to comply with the terms of this advertisement, will not be laid before the Council. Personal canvassing is strictly prohibited.

H. DE LA HOOKE, Clerk of the Council,
Spring Gardens, S.W., November, 1892.

PEACHES and NECTARINES.

A Private Gentleman has a Collection of magnificent Dwarf-Trained and Standard-Trained Peaches and Nectarines for Disposal. The heads vary from 7 feet to 12 feet across, and are in the finest possible condition and shape. For those about to plant, this is a very rare opportunity to acquire really grand Trees of Best Varieties, Cheap. Measurements, &c., will be furnished on application.

C. E. J., Messrs. Homer, Price, & Co., 14, Castle Street, Long Acre, London, W.C.

H. LANE & SON

Beg to call the attention of intending Planters to their extensive Stocks of TREES and SHRUBS for immediate effect, extending over 150 acres, including the following, all uninjured by frost.

EVERGREENS.

AUCUBAS, BERBERIS, BOX, COTONEASTERS, HOLLIES (Green and Variegated), LAURELS, PORTUGAL LAURELS, MAHONIAS, GOLDEN YEW (fine specimens, 6 feet in diameter), and Thousands of smaller Seedling Varieties, in different shades of colour, variety, and form.

FLOWERING SHRUBS.

DEUTZIAS, ELDER (Golden and Variegated), GUELDER ROSES, THORN in variety, LABURNUMS, LILACS, PHILADELPHUS, RIBES, SPIRÆAS, WEIGELAS, &c.

DECIDUOUS TREES.

MAPLES, SYCAMORES, BEECH, Black NORWEGIAN BIRCH, CHESTNUTS, ELMS, LIMES, PURPLE-LEAVED PLUM, WEEPING TREES, &c.

CONIFERS.

ABIES DOUGLASSII, ARAUCARIAS, CEDRUS DEODARA (splendid Specimens), CUPRESSUS, PICEA NOBILIS and NORDMANNIANA, &c.; PINUS AUSTRIACA, &c.; RETINOSPORA in variety, THUJA LOBBII and others, THUJOPSIS BOREALIS and DOLABRATA (fine Specimens).

RHODODENDRONS, fine named sorts, well set with bloom. Ponticum and Hybrid Seedlings, Azalea mollis, &c. FOREST TREES, ROSES, and FRUIT TREES.

CATALOGUE FREE ON APPLICATION.

THE NURSERIES, BERKHAMSTED, HERTS.

HARDILY - GROWN

FRUIT TREES

TRUE TO NAME:
LARGEST STOCK
IN THE KINGDOM,
Including all
the most Popular and
Profitable
Kinds in Cultivation.

Descriptive Priced List Free on application.

DICKSONS The Nurseries, **CHESTER**
(Limited).

NOW IS THE TIME TO PLANT

SEND FOR OUR
NEW DESCRIPTIVE

AND
PRICED CATALOGUE

Of Fruit Trees, Roses, Conifers, Shrubs, Forest Trees, Climbers, &c. An immense Stock grown.

LANDSCAPE GARDENING
A LEADING FEATURE.

GEO. JACKMAN & SON,

Woking Nursery, Woking, Surrey.

ESTABLISHED 1810.]

[AREA, 150 ACRES

For **PLEASURE and PROFIT.**

FRUIT. Nothing so Profitable and Easy to Grow.
74 ACRES IN STOCK.

See CATALOGUE for Simple Instructions, and kinds of Trees to suit all Soils.

ROSES. Hundreds of Thousands.

BUSHES, Packing and Carriage Free for Cash with Order.
8s. per dozen, 60s. per 100.

ROSES in Pots, from 15s. per dozen.

ORNAMENTAL TREES, 91 ACRES.

4 ACRES of GLASS.

CLEMATIS (80,000), from 15s. per dozen.

N.B.—Single Plants are sold at slightly increased prices.

SEEDS & BULBS { VEGETABLE, FLOWER and FARM.

DESCRIPTIVE LISTS, FREE.

RICHARD SMITH & CO., WORCESTER.

SMALL SHRUBS and CONIFERÆ.—Abies

Albertii, 2-yr., 6 to 8 inches, 4s. per 100; A. Douglasii, 1-yr., 20s. per 1000; do., 1-yr., 1-yr. transplanted, 6 to 8 inch, 4s. per 100; A. orientalis, 2-yr. transplanted, 30s. per 1000; Black A. Spruce, 2-yr. transplanted, 6 to 9 inch, 30s. per 1000; Cupressus macrocarpa, 1-yr., fine, 20s. per 1000; do., transplanted, 8 to 9 inch, 8s. per 100; C. erecta viridis, transplanted, 6 to 8 inch, 40s. per 1000; C. Allionii, 6 to 8 inch, 60s. per 1000; C. gracilis, 6 to 9 inch, 6s. per 100; Grac. Pampas, fine, 30s. per 1000; Aucuba japonica, green, 6 inch, 8s. per 100; Cedrus deodara, 1-yr., 6s. per 100; Ivy, Irish, 2-yr., 4s.; Jasminum, white, 6s. per 100; Lilac, purple, 3-yr., 4s. per 100; Laurestinus, 6 to 8 inch, 7s. per 100; Laurel Colchic, 1-yr., 25s. per 1000; Olearia Haastii, 6 in., 8s. per 100; Pinus cembra, transplanted, 6 to 9 in., 40s. per 1000; P. Nordmannia, 2-yr., 2-yr. transplanted, 6s. per 100; P. nobilis, 2-yr., 2-year transplanted, 6s. per 100; Pittosporum undulatum, fine, transplanted, 8 inch, 12s. per 100; Privets, oval, 8 to 9 inch, 8s. per 1000; do., golden, new, 8s. per 100; Retinospora plumosa, 4 to 6 inch, 40s. per 1000; 2-yr. transplanted, 60s. per 1000; R. squarrosa, 4 inch, 40s.; 2-yr. transplanted, 8 inch, 8s. per 100; R. plumosa aurea, 4 to 6 inch, 70s. per 1000; Rhododendron ponticum, 4 to 6 inch, 40s. per 1000; do., 6 to 8 inch, 60s. per 1000; Thuja Lobbi, 10 to 12 inch, 40s. per 1000; do., 15 to 18 inch, 50s. per 1000; Veronica Traversii, 9 inch, 8s. per 100; V. Pingifolia, 9 inch, 10s. per 100; Yew, English, 3-yr., 26s. per 1000; Yucca gloriosa, pots, 9 to 10 inch, 1s. per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

THREE STERLING ARTICLES for SEED LISTS, 1893.

To the Trade.—Price per dozen and 100 packets, on application. Hartland's Snowdrift Double white flimbrated Poppy. Hartland's April Queen Late Broccoli.

Cosmos bipinnatus, The Pearl.—This latter, for winter blooms and white flowers. Grown in pots and placed out of doors with Chrysanthemums, and then removed to a temperature of 55° or 60°, when a most continuous display of lovely white Queen Dahlia-like flowers can be cut until Christmas.—WM. BAYLOR HARTLAND, F.R.H.S., Seedsman, 24, Patrick Street, Cork.

FRUIT TREES
For Market and Private Growers.

ORNAMENTAL TREES, SHRUBS, ETC.

Descriptive CATALOGUES Post-free.

J. CHEAL & SONS
Crawley, Sussex.

DOUBLE NEAPOLITAN VIOLETS.

Splendid large Clumps, crowded with Bloom Buds. Will Flower all the Winter and Spring. Beautifully sweet. First size clumps, 12s. per dozen; second size, 6s. per dozen. Large Czar Violets, half above prices.

FOREMAN, Stanmore Park Gardens, Middlesex.

VICTOR POTATOS

(SHARPE'S).

This favourite first early Potato, suitable for any Garden, indispensable for Forcing and Early Borders, and likely to take the first rank amongst first earlies for market use. Quality and yield all that could be desired. One well-known market grower has this year had a yield of 15 tons per acre on a large acreage. London and Manchester salesmen speak highly of their quality, and report that Victors will keep their bloom and have a fresh appearance after being in the market some days, when other early Potatoes have become discoloured and unsaleable.

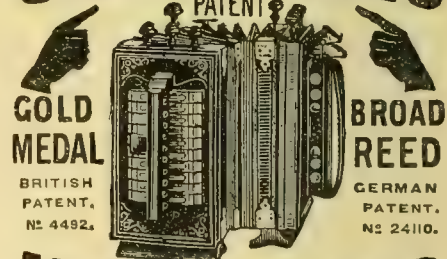
The stock we offer is the true yellow-fleshed variety and not the white variety, which is often substituted.

Price per cwt. and ton. State requirements to

W. W. JOHNSON & SON,
Seed Growers and Merchants Boston, Lincolnshire.

MUSIC IN THE HOUSE
MAKES
CHEERFUL HAPPY HOMES

CAMPBELL'S
PATENT



MELODEONS

With Organ and Celestial Tone and Charming Bell Accompaniments. No home should be without one. The Solemn Psalm, the Soul-stirring Hymn, the Cheerful Song, and the Merry Dance can all be played on these charming instruments. They have the largest Sale of any Musical Instrument in the World.

NO KNOWLEDGE OF MUSIC REQUIRED BY THE PLAYER.

Highest Awards, Grand Diploma, and Gold Medal, 1891.

£150,000 TESTIMONIALS.

MONEY RETURNED IF NOT SATISFIED.
The Gardeners' Chronicle Coupon.
CAMPBELL'S "PICCOLO" MELODEON, 3/9.
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CAMPBELL'S "MINIATURE" MELODEON, 10/-.
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Worth double the Money.
Either of the above sent CARRIAGE PAID in Great Britain, on receipt of P.O.O.

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NO DECEPTION HERE.

Important Testimonial from Professor Brown, the Champion Melodeon Player of Great Britain, Ireland, and Wales:—"CAMPBELL'S Patent Melodeons are the finest instruments that have ever come under my touch, and only require a trial to advertise themselves." CAMPBELL'S PATENT MELODEONS are the only genuine Melodeons in the Market. Beware of worthless imitations.

N.B.—All lovers of music should at once send for our New Illustrated Privileged Price List for Season 1893, now ready. 100,000 of these valuable lists sent out yearly. Send 1d. stamp to

CAMPBELL & CO.,
116, TRONGATE, GLASGOW.
ESTABLISHED 50 YEARS.

THOS. W. ROBINSON

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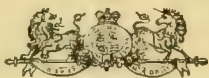
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FOR HOT WATER JOINTS

HEATING APPARATUS FIXED COMPLETE

DENNIS PARK IRON WORKS

STOURBRIDGE



THOMAS GREEN & SON, LTD., LEEDS and LONDON,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered and Tubular

HOT-WATER BOILERS,

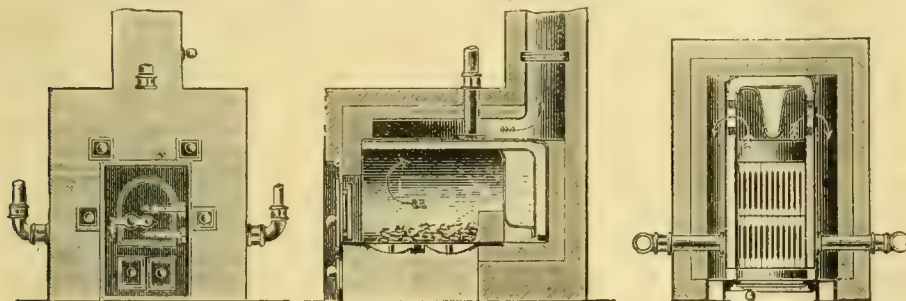
And others with SHELVES, and HOLLOW or ORDINARY CAST-IRON GRATE BARS.

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.

MUNICIPAL PATTERN BOILER, THE BEST EXTANT.



— FRONT ELEVATION —

— LONGITUDINAL SECTION —

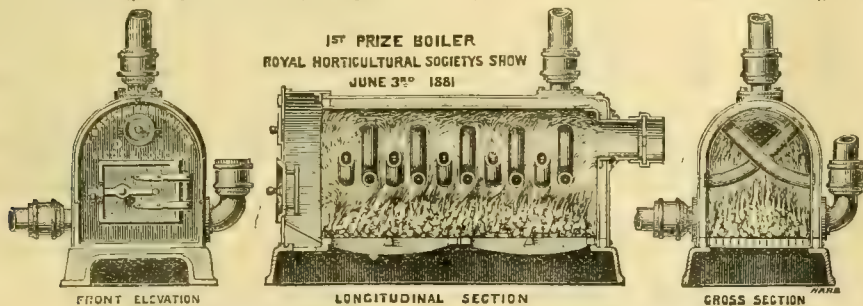
— SECTIONAL PLAN —

The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box, water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

SIZES AND PRICES.

	3 ft. 2 in. long by 2 ft. 0 in. wide by 2 ft. 0 in. deep	1000 ft.	Price
M B 1	3 ft. 2 in. long by 2 ft. 0 in. wide by 2 ft. 0 in. deep	1280	£15 0 0
M B 2	4 0 " by 2 0 " by 2 0 "	2200	" 21 0 0
M B 3	5 0 " by 2 3 " by 2 6 "	4000	" 32 0 0
M B 4	6 6 " by 3 0 " by 3 0 "	4000	" 60 0 0
M B 5	8 6 " by 4 0 " by 3 9 "	7000	" 85 0 0

Calculated to heat 4-in. piping as follows:—



1ST PRIZE BOILER
ROYAL HORTICULTURAL SOCIETY'S SHOW
JUNE 3rd 1881

FRONT ELEVATION

LONGITUDINAL SECTION

CROSS SECTION

Sizes & Prices, including Sole-Plate, Grate-Bars, Fire Door, Dampers, & one Flow and one Return, complete.

Boilers.	Width.	Length.	Height.	Length of 4-inch Piping calculated to heat	Price.
	ft. in.	ft. in.	ft. in.	feet.	£ s. d.
B	1 6	by 3 0	by 2 0	600	16 0 0
C	1 9	by 3 6	by 2 0	800	22 0 0
D	1 9	by 4 0	by 2 2	1100	29 0 0
E	2 0	by 4 6	by 2 4	1400	36 0 0
F	2 3	by 5 0	by 2 6	1750	43 0 0
G	2 6	by 5 6	by 2 6	2000	50 0 0
H	2 9	by 6 0	by 2 6	2500	60 0 0
I	3 0	by 6 6	by 2 6	3.00	70 0 0

TESTIMONIALS.

Re HEATING APPARATUS.

Borough Engineer's Office, Municipal Buildings, Leeds, January 9, 1886.

MESRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings.

The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1½ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.

Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly,

THOS. HEWSON, Borough Engineer.

Morley House, Bagot, St. Saviour's, Jersey, November 10th, 1886.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

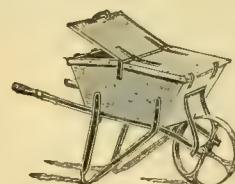
I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

MESRS. THOS. GREEN AND SON, LTD., LEEDS.

Yours faithfully, (Signed) G. W. BASHFORD.

And HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

BOULTON & PAUL, Manufacturers, NORWICH.



WROUGHT-IRON ASHES or OFFAL BARROW, Garden Barrow & Cinder Sifter combined.

CASH PRICE.
Painted ... 30/-
Body galvanised ... extra 7 6
If fitted with registered Cinder Sifter ... 5/-
Portable Sanitary Dust Bins and Swing Barrows.

Send for Illustrated CATALOGUE, post-free on application.

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STAFFORDSHIRE,

And 118, QUEEN VICTORIA STREET, LONDON, E.C.

NEW PATTERN

TREE GUARD, "The Porcupine."

The maximum of utility and the minimum of cost.

Constructed of Strong Iron Uprights and Galvanised Barbed Steel Wire.

Price 10s. 6d.

TESTIMONIAL.

"The Whittern, Herefordshire, Dec. 28, 1887.

"DEAR SIR,—I have now had an opportunity of trying your PORCUPINE TREE GUARDS, and they seem quite to answer my purpose, so you may send me 50 more as before. I enclose cheque for your account.

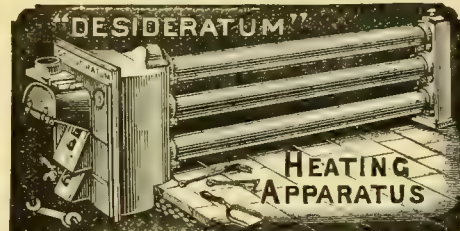
Yours truly,

RICHD. GREEN.

Messrs. Hill & Smith.

JONES & ATTWOOD.

STOURBRIDGE,



For GREENHOUSES and OTHER BUILDINGS.
CATALOGUE AND ESTIMATES FREE.

ROBERTS'S (IMPROVED) PATENT

STOVES

TERRA-COTTA! PORTABLE! FOR COAL!

Pure and ample heat, 24 hours for about 1d., without attention.

For Greenhouses, Bedrooms, &c.

GREENHOUSES Heated 24 Hours for about One Penny. Pamphlets, Drawings, and authenticated Testimonials sent. See in use at Patentee's.

THOMAS ROBERTS, 34, Victoria St., Westminster.

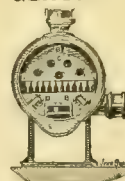
The Original and Only Makers of the GENUINE RIVETED TRENTHAM BOILERS

WITH SOLID ENDS. Also—

SILVESTER'S PATENT TRENTHAM, With Special Provision for Cleaning the Inside thoroughly (a Most Important Point).

These Boilers, after long experience, have proved themselves the Most Efficient, Economical, and Lasting Boilers extant.

Every other kind of Boilers, Sockets, Flanges, and Expansion-Joint Pipes and Fittings, for all kinds of High and Low-Pressure Heating.



FRED SILVESTER & CO.,

General Engineers, Founders, and Boiler Makers, CASTLE HILL WORKS, NEWCASTLE, STAFFORDSHIRE.

ANTHONY WATERER

Invites an inspection from intending Planters to the following well-grown TREES, having stout, clean stems, with handsomely-furnished, well-balanced heads, and from frequently transplanting are splendidly rooted; the girth of the stem is taken at 4 feet from the ground:—

ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
 " WIERI LACINIATUM, 10 to 14 feet, girth 3 to 5 inch.
 " NEGUNDO VARIEGATUM, Standards, 8 to 10 feet.
 " REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.
 " SCHWEDLERI, 12 to 18 feet, girth 3 to 5 inches.
 " WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
 ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
 BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
 BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
 CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.
 CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
 " Double White, 14 to 16 feet, girth 6 to 8 inches.
 " Scarlet, 12 to 18 feet, girth 4 to 10 inches.
 " Spanish, 12 to 14 feet, girth 4 to 5 inches.
 ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
 " Guernsey, 16 to 18 feet, girth 7 to 9 inches.
 LINES, 12, 16, and 20 feet, girth 3 to 10 inches.
 " EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.
 " Silver-leaved (Tilia argentea), 12 to 14 feet, girth 5 to 6 inches.
 LIQUIDAMBAR, 6 to 10 feet.
 MAPLE, Norway, 12 to 16 feet.
 OAK, English, 12 to 14 feet, girth 4 to 5 inches.
 " Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
 PLANES (English-grown), 12 to 16 feet, girth 4 to 6 inches.
 POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
 SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
 " Purple, 14 to 16 feet, girth 6 to 7 inches.
 THORNES, Double Pink, 8 to 10 feet.
 " " Scarlet, 8 to 10 feet.
 " " White, 8 to 10 feet.
 TULIP TREES, 8 to 10 feet.
 WALNUT, Common, 10 to 12 feet.

WEeping TREES.

BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
 " Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
 BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
 " Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
 ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
 LARCH, Weeping, Pyramids, 8 to 10 feet.
 POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
 KNAP HILL NURSERY, WOKING, SURREY.



ORDER DIRECT—NO BRANCHES OR AGENTS.



PAULS', WALTHAM CROSS,
 For the Best Roses.

PAULS', WALTHAM CROSS,
 For the Best Bulbs and Seeds.

PAULS', WALTHAM CROSS,
 For the Best Fruit Trees and Grape Vines.

PAULS', WALTHAM CROSS,
 For the Best Evergreens, Park and Roadside Trees.

PAULS', WALTHAM CROSS,
 For the Best Camellias, Azaleas, Lapagerias, &c.

PAULS', WALTHAM CROSS,
 South Entrance four minutes' walk from Waltham Cross Station, Great Eastern Railway.
 West Entrance three minutes' walk from Theobald's Grove Station, Great Eastern Railway.

Inspection Invited. Prices Strictly Moderate.
 Priced Catalogues Free.

Goods packed by experienced hands for all parts of the world.

Gardeners of character and experience recommended.

Observe the Christian name—

WM. PAUL & SON,

Rose Growers by Appointment to Her Majesty the Queen,

TREE, PLANT, BULB and SEED MERCHANTS,

WALTHAM CROSS, HERTS.

FRUIT TREES.

ROSES and VINES
 OF UNSURPASSED QUALITY.

INSPECTION INVITED.

HUGH LOW & CO.,

The Nurseries, BUSH HILL PARK, N.

SPECIAL NOTICE.

BULBS

FOR SUCCESS ON THE EXHIBITION TABLE

SEND TO

MR. ROBERT SYDENHAM

(Of the Firm of Sydenham Brothers, Wholesale Jewellers),
BRISTOL ROAD, BIRMINGHAM,
 The Largest Amateur Importer in the Kingdom.

No Nurseryman in the Country can serve you better or cheaper for

REALLY GOOD BULBS & SEEDS

AT MODERATE PRICES.

FULL LIST POST-FREE ON APPLICATION.

SPECIAL CULTURE OF

FRUIT TREES AND ROSES.

A LARGE AND SELECT STOCK IS NOW
 OFFERED FOR SALE.

The Illustrated and Descriptive Catalogue of
 Fruits, post-free, 3d.

The Descriptive Catalogue of Roses, post-free.

THOMAS RIVERS & SON,
 THE NURSERIES,
 SAWBRIDGEWORTH, HERTS.

PLANTING SEASON.

HARDILY-GROWN

FOREST, FRUIT,

& ALL OTHER

TREES & PLANTS,

EVERGREENS, ROSES, &c.

NURSERIES 400 ACRES:

VERY EXTENSIVE STOCK. Inspection Invited.

Priced Catalogues Gratis & Post Free.

DICKSONS THE NURSERIES

(LIMITED) **CHESTER.**

BEAUTY OF BATH

(THE COMING APPLE).

THIS is the finest, New, First Early Dessert Apple introduced for many years. It has gained honours at every Exhibition where shown; First-class Certificate Royal Horticultural Society; and First Prize for the Best Dessert Apple in competition with thirty-five dishes staged, and was included in the First Prize Dish of Dessert Apples at the recent International Fruit Exhibition, Earl's Court, open to all England, August 26 and 27, 1892. Mr. Horne, of Perry Hill, Cliffe, near Rochester, holds the largest stock of this magnificent Early Dessert Apple in England.

CLIFFE, near ROCHESTER.

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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 26, 1892.

FERNS AT KEW.

IN these days, when the more profitable trade in what are called "Market" or "Decorative Ferns," which are easily raised from spores, has, in nurseries, absorbed the greater part of the space formerly devoted to collections of Ferns, it is pleasant to note that the matchless collection at Kew has of late years received an increased rather than a diminished amount of attention; and that its value, both from a botanist's and from a gardener's point of view, has increased in a corresponding degree, as the facilities for seeing rare and curious species elsewhere has decreased. But not only has the improvement been in the scientific interests of the Kew Ferns, but the plants themselves have gained in health and vigour, and especially in the large No. 2, or tropical Fern-house, where the cultural efforts of the staff must have been formerly severely handicapped by having to make the best of a structure glazed, in accordance with some "fad," with green glass. From a great part of the house, the green glass has been removed and replaced by the white glass in common use, and over that part the improvement of the specimens has been so marked and rapid, that it is difficult to understand why the remaining portion should not obtain the same relief. As it is, the fine collection of *Gymnogrammas*, which, one and all, require pure air and a clear light, have still to be grown under this green glass; and so also with other important genera. With the means at command, more could not be done than is done at present in the Kew collection, for everywhere is evidence that the smallest peculiarity or known liking of a plant is not neglected. Thus in the genus *Davallia*, we note that on each side of the door are placed two fine specimens of *Davallia elegans*, clothing from bottom to top the tall Fern stems placed for them to run over; while other species are grown in baskets or pots; and the lovely mass of the little *Davallia parvula* has a case constructed to receive it. So also with the *Adiantums*: some, like the elegant viviparous *A. lunulatum dolabriforme*, are suspended, and form spherical masses of delicate frondage; while others are grown in baskets or pots, as they may be adapted for them. In such an establishment, and with such a vast collection from all parts of the world, it must be remembered that, in the arrangement of the plants, many things have to be considered; and above all that, specimens should not be lost sight of in the efforts to create effect. And yet it would be difficult to improve the existing state of things in the tropical Fern-house, except in the matter of having the re-glazing of the roof seen to. There, grouped together, are the noble specimens of the *Platyneriums*, or stag-horn Ferns;

beyond, all together, a complete collection of Selaginellas, cultivated up to their best. Suspended over the Platyceriums are the quaint and gigantic tropical Lycopodiums, of which the most singular, perhaps, is *L. squarrosum*. Along the entire length of the structure, the pillars are densely clad by the different species of the climbing Lygodiums, the *L. dichotomum*, with its thick, deeply-cleft fronds, being specially effective. In a shady part of the house is the collection of Filmy Ferns; and, indeed, everything seems placed so as to look well, and thrive also. Among the countless rare species, are the singular *Lomariopsis buxifolia*; the trailing *Asplenium scandens*, which, requires a critical examination before one can realize that it is an *Asplenium*; the remarkable *Ophioglossum pendulum*, illustrated in the *Gardeners' Chronicle* recently; the strap-leaved *Vittarias*; the spiny Tree-Fern of Jamaica, *Alsophila armata*; the stately *Dicksonia Wendlandi*, *Lindsaya retusa*, *Brainea insignis*, *Pteris ludens*, and a number of others.

The new temperate Fern-house is now finished, and the plants placed in their new quarters, where they will have an immense advantage over what they had in the old, dark, and inconvenient structure, where it must have been impossible to carry many of the delicate *Nothochlænas* and *Cheilanthes* through our protracted winters; and, in their old station in the lofty Aroid-house, the tropical Tree Ferns mingle well with the Aroids, some of the scendant species twining round the stems of many of them.

There seems to be a growing love for Ferns; and, if more of our young gardeners would try and get a year in the Royal Gardens at Kew, it would, if they applied themselves diligently, give them more real knowledge of Ferns, and plants generally, which would be of service to them, than years of the desultory studies even the most intelligent of them pursue, where they have not the advantage of association with the plants themselves, which they would there enjoy.

CORDON PEARS.

ALTHOUGH this mode of cultivating the Pear is considered trifling by some, and does not meet the requirements or convenience of others, it has nevertheless irrefragable advantages in some respects, which are apparently becoming widely appreciated, if we may judge by the increased demand for trees of this form. To those possessing only a limited run of walls or trellises, who are desirous to obtain therefrom as long a succession of fruit as is possible, the cordon is invaluable, for it is certainly unequalled as a fruit-bearer, besides having other advantages, and the fruit that cordons bear whilst quite young are of the largest size and best quality. The management is simple, its rooting space very small, and it quickly covers walls, &c. The length of time that trees which have their growths much restricted will produce good crops, is a question often asked, and one which I admit I am not qualified by experience to answer, notwithstanding the fact that we have some 350 cordon Pears upon walls, the oldest which cover a wall 15 feet in height; but these have been planted only four years. At the same time having seen the noted trees at Holme Lacy in bearing, during the time Mr. Denning was in charge of them, I think I may safely assert that cordons can be kept in a satisfactory state for as long a time as any other form of tree that is confined to a given space.

Cordons are grown with a single or with two stems or branches, but the former if the stock is the Quince is usually preferred. Such plants should be set out 2 feet apart, if the finest fruit is looked for or expected; or they may be put at 18 inches apart, and trained either erect, obliquely, or horizontally,

as suits convenience or taste, although it has been said, for reasons that are apparent, that those fixed perpendicularly are not so fruitful as those which are inclined to one side or the other—but this is not substantiated by my experience. The Pear, like other fruits, pays for care in planting, and I planted the cordons here in the following manner:—Holes 3 feet wide, and the same in depth, were dug out at the foot of the walls, the borders being old, furnished years ago with tile drains. Brick rubble to the depth of 6 inches, and covered with turves, was



FIG. 95.—DIAMOND FENCE OF APPLES.

placed in the bottom of each hole, the remaining space being firmly filled to within 6 inches of the top with moderately-heavy maiden loam, but having no old mortar or lime mixed with it, because these were not at command. Upon this the trees, after cutting off the jagged ends of the roots, were placed in position; the roots spread out, and covered with about 4 inches of soil, fine particles being worked amongst them with the hands, and a mulching of stable-manure completed the planting. Of course, every one is not favoured with maiden soil at hand,



FIG. 96.—SPIRAL CORDON APPLE.

but that is not a vital matter, for the Pear can be grown well in most soils of a loamy character, be they light or heavy; one matter of importance must not, however, be overlooked—that of securing perfect drainage.

Pruning simply consists of shortening the shoots in July, and again in October, cutting these growths back to two leaves from their base, and removing unfruitful spurs, or those that are superfluous; while in order to preserve a balance between root and top, and thereby assist to keep the trees fruitful, the former, particularly those

of free-growing varieties, must be cut-in periodically, or as is found necessary. Feeding with liquid manure, or some other surface-mulching, should be practised, especially soils which are light or poor. Respecting aspect, I may mention that the trees in this garden are on south, east, and west aspects, and good fruit is gathered from each. The greatest enemy that we have are the spring frosts, which are intensified by our moist situation.

We have merely a good selection of varieties of Pears, and of these the following are the best bearers, and moderate growers:—Beurré d'Anjou, Doyenné du Comice, Durondeau, Easter Beurré, Josephine de Malines, Louise Bonne de Jersey, Marie Benoist, Marie Louise, Olivier de Sèrres, and Winter Nelis, all varieties of good quality. The more or less unfruitful ones, and the most luxuriant growers, are Beurré d'Amanlis, General Todleben, Bergamotte d'Esperen, and Beurré Hardy; the last, however, is studded with fruit-buds at the present time. Of these, Doyenné du Comice excels in point of flavour, and I should like to call attention to the good qualities of Beurré d'Anjou, and Marie Benoist, which, I think, are not so much cultivated as they deserve to be. T. Coomber, *The Hendre, Monmouth*. [See also "Hardy Fruit Garden," p. 645.]

BERLIN LETTER.

(Continued from p. 614.)

I HAVE already said that the present fashion in bouquets and florists' work generally, as distinguished from the past, permits the use of a number of subjects which were formerly not admitted into the better sort of bouquets. It may be of use if I specify what these are. The first are the novelties in Dahlias. Whilst the blooms of *Dahlia variabilis* always look stiff and formal, and can only be made use of in a loose, unconfined kind of arrangement, the blooms of *D. Juarezi*, on the contrary, notwithstanding their large size, possess grace and variety of form and colouring which few flowers of such a size can rival, that they are well suited to various forms of arrangement. I might say that they are the equals of the large-flowered *Clematis*.

The vermilion-red fruits of the Winter Cherry, *Physalis Alkekengi*, are much admired in baskets, &c., and very pretty these look when, as is often the case, the calyx is opened by four snips with the scissors, and its four sections spread out flat, showing the cherry-like fruit surrounded with four rays, just as the earlier painters used to depict the sun.

Autumn leaves, especially those of the different species of American Oaks, which possess lasting properties and tender tints, lend themselves excellently to the bouquet-makers' art. But what makes these leaves of special value is their noble forms, and not the least of the reasons for their general employment, is the great length of time which they will last when cut. Besides the autumn-tinted foliage of the Oaks are those of *Pæonies*, whose fine tones of colour make them excellent materials. There is little doubt that the quantity of autumn leaves used by bouquet-makers will, by next autumn, have assumed still larger proportions. Besides these variegated leaves, many various-tinted fruits are made use of. It is not rare to see the fruits of *Sorbus aucuparia*, *Mespilus Pyracantha*, *Ligustrum vulgare*, *Mahonia aquifolia*, *Ampelopsis hederacea*, &c., in bouquets. One of the most charming arrangements I have noticed was one sent by Herr Commercial Privy Councillor Veit, to a small exhibition of fruit at Steglitz near Berlin. It consisted of an oval table, about 1½ yard in diameter, upon which enormous bunches of Grapes out of H. Veit's vineries, were spread about, and were interspersed in the prettiest manner with autumn leaves and numerous fruit-bearing shoots of a great variety of shrubs and trees. I shall shortly have something to say concerning the park and the vineries of this amateur horticulturist.

Frequently the flowers of *Mina lobata* are made use of. This novelty in hardy climbing plants,

which in a sunny position out-of-doors, makes in one year an enormous bush, is in autumn bedecked with innumerable red and yellow flowers. Not of less value are the pretty cinnabar-red flowers of *Tritonia* (*Monbretia*) *crocosmiflora*, which are well adapted for similar purposes to the foregoing. The blooms of the small-flowering varieties of *Bouvardia* are likewise employed, and particularly the double-flowered *Alfred Neuner*, and a scarlet-coloured variety.

Amongst plants grown in pots for sale, mention should be made of those most in favour, viz., *Erica gracilis*, *E. hiemalis*, *Cyclamen persicum*, *Bouvardia Humboldtii*, *Primula sinensis*, small *Chrysanthemums*, and numerous varieties of *Fuchsias*; to these may be added, *Camellias*, *White Roman* and other *Hyacinths*; and *Gardenias*, not forgetting the immense quantity of *Violets*, which every day are sold, to the value of several thousand marks. *Dr. U. Dammer*.



FIG. 97.—SINGLE CORDON APPLE. (SEE P. 640)

CHRYSANTHEMUM JOTTINGS.

MESSRS. JNO. LAING & SONS.—Many a good display of the favourite autumn flower has been seen at Forest Hill, when Messrs. Laing & Son were amongst the well-known exhibitors, especially of groups. Since 1890, however, Mr. Laing, through pressure in other departments, has been obliged to give up growing *Chrysanthemums* for exhibition. However, some 500 plants have been grown this year, and a good display has been the result, although the requisite accommodation inside has been partially withheld for other purposes. Many of the plants had completed their work before our visit, and some dozens of them were being cut down and carried away at the very time. A goodly number, of course, were still in bloom, and amongst these were many good specimens. *Vivian Morel*, in good condition, was the first to attract our attention; and *Owen's Excelsior*, which—pretty colour as it is

different shades in bronze, is a good bloom, but the habit appears to be not of the best, growing some 7 feet high. *Sugarloaf*, introduced from America about three years ago, is still worthy of a place anywhere; it is an incurved Japanese, crimson, with gold reverse, and produces good broad petals. A very good decorative variety is *Thos. Steveson*; it produces a very wealth of medium-sized blooms in many-flowered clusters. A visit to Forest Hill is always interesting, and we noticed the great quantity of *B-gonia-tubers* housed, and being subjected to the drying process, previous to their distribution. In the *Orchid-houses* were several good things in bloom, including a pretty, and well marked variety of *Odontoglossum crispum*.

MESSRS. REID AND BORNEMANN, SYDENHAM.

A visit some ten days since to this establishment showed that many novelties were still in bloom, and the collection seemed to possess more late varieties

not space to notice any more, but there are a number of good things yet in bloom at this nursery, which it is intended to devote specially to florists' flowers.

MESSRS. CARTER & CO., FOREST HILL.

A good display of *Chrysanthemums* has been maintained at this establishment during the last few weeks; but when a week ago we visited this nursery, the majority of the flowers were past their best, and some of the plants had been cut down and taken out of the house. Some of those still remaining carried good blooms, and several new American varieties were in evidence. With their own seedlings, however, Messrs. Carter appear to have had but indifferent success, and not many out of a large batch will be worth keeping. Such are the disappointments which often await the would-be raiser of improved forms, and it is only in special cases, and but seldom, that he is rewarded with a bloom, in the shape of a novelty surpassing any previously-raised variety. Novelties are produced in number, but such is not sufficient to command success, they must have other recommendations before they become the rage of the hour.

The general display this year, however, has been much in advance of that attending previous efforts of Messrs. Carter, and the group staged by them—and successfully—at the Crystal Palace, was one of the best seen this year.

THE HOME OF THE SUGAR-CANE.

DR. EDMUND VON LIPPMAN, an eminent German chemist, and an authority on sugar, gives the following brief sketch of the history and development of Sugar culture and manufacture, in a lecture, a synopsis of which appeared in the *Deutsche Zucker Industrie* :—

The original home of the Sugar-cane must be looked for in the coast region extending from Bengal to Assam, at the northern extremity of the Bay of Bengal. It is remarkable that there is no such thing as the wild Sugar-cane, whilst four-fifths of other formerly wild, but now cultivated plants, are still in existence in a wild state. Not the slightest chronological indication as regards the time when it was first known is to be found in Indian annals. A Chinese compilation of the third century states, that the province of Bengal sent Sugar-cane as a tribute to China, from which we may conclude that at that time solid sugar was not known. The first indication of sugar itself is found between the third and sixth century in India, while the Chinese were not acquainted with its manufacture until about the year 640. In the ninth century, clarified sugar was prepared by drying raw sugar in the sun. The companions of Alexander the Great speak of a sort of honey, which they met with on their way to Asia, which grew there without bees. At the commencement of the sixth century, there was Sugar-cane on this side of the Indus, at the confluence of the Euphrates and Tigris. The conical shape of the sugar-loaf has existed since the seventh or eighth century. The refining was effected chiefly by the ashes of plants.

Sugar came first into Europe at the time of the conquest of Sicily by the Saracens in 827. From Morocco, the manufacture of sugar extended to Spain, and attained such a development that it amounted to 100 000 tons per annum. In the year 990, the Doge Orseolo concluded the first treaty of commerce with the Arabs, and refined sugar was then introduced into Venice. From thence sugar found its way into Germany, and is first mentioned in the poems of Wolfram of Eschenbach and Gottfried of Strasburg. Columbus took the Sugar-cane with him on his second voyage to America, but it appears to be again lost sight of there. In Germany, the first refinery was established in 1573, at Augsburg, by the patrician family of Roth. The next refinery was set up in 1597, at Dresden. *Louisiana Planter and Sugar Manufacturer*, as cited in the *Tropical Agriculturist*.



FIG. 98.—DOUBLE CORDON APPLE. (SEE P. 640)

—would be a valuable Japanese if, through cultivation, it would throw a better centre. *Jno. Stanborough Dibbens* may, perhaps, make a good thing, but it is far too rough to be ranked as an incurved; as a Japanese incurved, another year it may be valuable. *C. B. Whitmore*, another incurved Japanese, colour crimson, with light rose reverse, has better form. *Abber Mendenhall*, a new Japanese, is a very good thing; the florets are long and fairly wide, the colour yellow, and the variety promises well to become a useful one for exhibition. The pretty *G. C. Schwabe*, with its rich crimson petals and gold reverse, was in evidence; and *Vice-President Audiguer*, a very pretty Japanese, white, with a suffusion of rose, looked well. *Mr. A. H. Neve* was carrying some good blooms. It is a broad-petalled Japanese reflexed, white with pale blush centre, blooms large, and rather heavy. *E. G. Hill*, an incurved Japanese with buff ground, and stripes of

incurved; colour chestnut and bronze, petals twisted. *M. A. L. Rosseel* is a small decorative Japanese, colour blood-red, with gold linings and reverse; a very charming decorative variety. A good thing for next year is *W. P. Routh*, a very large Japanese flower of *Avalanche* type. The colour is beautiful primrose, and may prove one of first-class. *Yonitza*, a primrose and blush incurved flower, is good, but must be taken on the terminal bud. *Sydenham Terra-cotta* is the name given to a semi-single variety, very useful for decoration and for market. Its flowers are plentifully produced, in large clusters, and the colour is a good terra-cotta. *Le Verseau* is a very large Japanese, of bright rose, with silver reverse. *Alfred Lee* may prove a first-class flower for decorative purposes; it is one of the seedlings raised here this year—a Japanese, with the centre petals recurving, and outer petals spreading; colour somewhat lilac, but with a suffusion of flesh. We have

FOREIGN CORRESPONDENCE.

STEAM HEATING.

IN your editorial columns for September 17, you made a very appreciative review of the *Bulletin* from Cornell University upon the comparative merits of steam and hot-water for greenhouse heating. Your account of the manner in which a steam-plant should be made and managed, however, is entirely opposed to all practices in America, and it may be useful to English gardeners if I mention some of the main features in our system. Your comment upon this point is as follows:—"From what we know of the working and management of steam-heating apparatus in a large way, it is necessary to have the best quality of cast-iron piping, which must be at least double the thickness of ordinary hot-water piping, and the joints must be flanged and fastened together with bolts, and furnished with vulcanised indiarubber rings, to prevent the escape of steam. They must have accurately-fitted (turned) expansion pipes placed every 20 or 30 yards apart, to make the apparatus safe; and the boiler must have constant attention the whole time it is in use, a watch being always kept on the pressure-indicator. Another matter which calls for constant attendance is the fact, that it is neither desirable nor safe that steam should be always passing into the pipes. The usual practice is to let in steam for a time, sufficient to highly heat the pipes, and then turn it off, check the fire draught, and let the steam that is then made escape into a condenser, or up the chimney shaft, until the thermometer in the houses shows that it is necessary to let in more steam. In very cold weather steam has to be let into the pipes at short intervals; and perhaps in very cold climates, as that of the northern United States, steam would have to be constantly made during the night; but during the bright sunny days of that country, even in mid-winter, it would be but little needed about the middle of the day, except in forcing-houses. This would, of course, entail steam being made in a large boiler, to heat, we will say, but a fraction of the whole, although where all the houses had to be kept at high temperatures, that kind of expense would naturally be anticipated. Usually, when the pressures employed are low, the diameter of the pipes may range from $4\frac{1}{2}$ to 5 inches, but the larger the diameter, the larger must be the steam capacity of the boiler. Even for a small house, the large amount of heat afforded by pipes of large diameter is preferable to the higher pressure and strong dry heat entailed by the use of small malleable iron pipes. For large establishments steam is preferable to water even here, but it should always be controlled and looked after by a skilled engineer, and he should always be provided with a mate."

Cast-iron pipe is never used in America for steam-heating, and it is falling into disfavour for hot-water heating, especially in forcing-houses. We use wrought iron (or what you call malleable iron) pipes, gas-pipes, which screw together with threads. There is no more care necessary in putting these pipes together for steam than for hot-water; in fact, a pipe which will not leak steam often leaks hot-water. The old system of cast-iron piping is rapidly disappearing in America, even for conservatories. The gas or wrought-iron pipes are strong, cheap, easily adjusted to any position, and absolutely tight when properly put together. They can be carried anywhere in the house, they can be cut off at any place, and varied at any time in almost any conceivable manner. The same kind of piping is used for both steam and hot-water, as I have already said, and there is very little difference in the manner of laying the pipes in the two systems, except that for hot-water there must be more pipes, more heating surface, than for steam. For very many purposes we now use over-head heat; that is, we run our risers or flow-pipes overhead, and let the returns run back under the benches. We use small pipes. One 2-inch pipe is sufficient for a riser for a house 20 by 100 feet. This will supply from six to

ten 1-inch or $1\frac{1}{4}$ -inch returns. In our own houses all our piping is done by the gardener and a labourer. I have seen very many greenhouses in many States, and I never yet saw a cast-iron pipe in a steam-heated house, and I doubt if such a case occurs in America.

There is no expansion-tank whatever on any steam-system here. The steam or condensation returns constantly to the boiler, and is then sent out again through the riser as steam. There is enough elasticity in steam to take up any unnecessary or uneven pressure of ordinary amount. Every boiler is provided with a safety-valve, which can be set to blow off at any pressure desired, and if the pressure is too great, it is relieved through this valve. But with our automatic drafts, there is no reason for the safety-valve to blow off. Not the least harm results if it does go off. We never run a high pressure. Three or four pounds is usually sufficient, and the safety-valve is commonly set to blow off at seven or eight pounds. This leads me to say that steam-heaters, as we know them, require very little care, and no one is afraid of them. I heat my residence by steam. The heater (or boiler) is in the cellar directly under my study. I look to this heater twice or three times in the twenty-four hours! It is less trouble than a kitchen-stove. Everything about it is automatic so far as such a machine can be. In our range of houses we have a steam-heater and hot-water heater side by side, and one requires no more attention than the other; and if they are looked after in the evening at bedtime, in the morning, and again perhaps at noon, they give satisfactory results in all ordinary weather. We are just now completing the piping of some 12,000 square feet of glass from a 40-horse power steam-heater. I expect that there will never be a time, even in our cold winters, when a man will sit up with this boiler. My gardener goes home and goes to bed at 10 or 11 o'clock, and does not appear again until 6 o'clock in the morning. Then, again, steam is passing into our pipes all the time when heat is needed. If the sun comes out warm, a valve is turned on each pipe, and the heat is off. In a minute it can be turned on again.

I am not now urging steam in preference to hot-water. Each has its merits. I am only trying to describe the way in which we Yankees pipe our houses, whether by steam or water. *L. H. Bailey, Cornell University, Ithaca, N.Y.*

WINTER SALADS.

ALTHOUGH salading is not in so great request in winter as in the summer, yet most gardeners are expected to have it on their employer's table; therefore, steps should at once be taken to preserve any that is now out in the open, as severe frosts will spoil it. Endive, though considered by many to be hardy, is generally the first plant to suffer, and if the plants get in the least nipped with frost, decay is rapid. I find that one of the best means of giving protection to Endive, if the plants are to be blanched where they are growing, is to shake some clean fresh straw over their heads, which, if put on moderately thick, answers the double purpose of keeping off frost and blanching the hearts. This method answers for the Batavian or broad-leaved kinds, and the moss curled; but for the latter a different plan may be adopted, if it be thought requisite, which is that of laying a stout board along the row above the plants, the board being a non-conductor, will be found far better for the purpose than tiles or slate, as frost passes through either of those quickly, and being non-absorbent, wet condenses beneath, and helps rot the plants. Of course, where a quantity of salading is required, and the supply extended, and carried on through to the spring, a good deal of the Endive and Lettuce must be taken up, and preserved in cold pits or frames; but that for first or second use will be found to do well in any dry cellar or shed. I have wintered great numbers in sheds, by just putting 6 inches or so of soil on the floor, and laying

the Endive close together in it, and then setting the door open when the weather was favourable for giving air. Lettuces are best placed in frames or pits, as they need more light. The most suitable varieties for this season of the year are the Brown Cos and Hick's Hardy Green; but both Lettuce and Endive may be much improved in winter, if, a week or so before eating, they are placed in a Mushroom-house, the warmth and darkness blanching and rendering them tenderer than would otherwise be the case. If blanching is carried out in pits or frames, then all that is necessary is to exclude the light, by covering the glass, and keeping the lights close, the thing to be most watchful about being damp; but if decaying leaves are first picked off, and a trifling amount of air afforded at the back of the pit or frame, damp will not hurt the plants. *J. Sheppard.*

ROUND BIRMINGHAM.

(Continued from p. 556.)

THE BOTANIC GARDENS, EDGBASTON.—A peep into these interesting gardens which Mr. Latham keeps in a condition which might be imitated with advantage in some similar establishments, revealed many interesting well cultivated botanical plants, as are the florists' flowers which are necessary for keeping up a show, and that without taking up space that should be devoted to botanical plants. We found the entrance enlivened with early Chrysanthemums, and a good large show of the general collection of these plants prettily arranged in the exhibition hall. The Chrysanthemum show here is enhanced by *Lapageria rosea*, *Bougainvilleas*, and other climbers which depend from the roof, and by the groups of scarlet *Salvias* and other winter-flowering plants arranged with ornamental foliage. In the lofty conservatory the Tree Ferns have grown marvellously of late years, some of their stems being 18 or 20 feet in height, and of these a grand *Cyathea medullaris*, a beautiful *Dicksonia squarrosa*, *D. fibrosa*, *Alsophila excelsa* and *Cyathea princeps* were remarked.

A beautiful Fern found in the gardens was *Dicksonia Lathamii*, which was raised by Mr. Latham, from *D. antarctica* and *D. arborescens*. It is a spreading variety, with broad and much divided fronds; dark green in colour, and hard enough in texture to make it an excellent conservatory or dwelling-house plant. Among the Ferns were lofty Palms, the largest of the *Chamarops excelsa* having a trunk of 20 feet in height, and beyond in the tank-house and adjoining stove-house were found some fine Palms and Cycads, with many interesting water and marshy plants, such as *Pontederias*, *Nymphæas*, *Godwinia gigas*, &c. Here *Callicarpa purpurea* will soon be in great beauty; and the brilliant orange-scarlet *Costus igneus* is a charming object. In other houses the collection of *Droseras* and other plants called insectivorous are very attractive although this is perhaps their shabbiest season; and the immense *Platyceriums* in one of the warm houses show these curious Ferns in their best condition. Among them are fine plants of *P. grande*, *P. stemmaria*, *P. alcorni*, and other rare species, and the collection is one which a visitor should not miss. In the greenhouses were bright groups of *Primulas*, *Cyclamens*, *Begonias*, *Eupatoriums*, and *Bouvardias*; and among the last-named, it is curious to remark that one of the oldest species, viz., *B. leiantha*, was making the greatest show.

THE ORCHIDS.

More attention is given these plants every year, and their condition has improved, and there is a far better display of flowers than heretofore. In one of the warm houses *Cypripediums* were thriving. The plants were arranged with *Crotons*, and many rare species of Ferns, overhead being *Nepenthes*, *Platyceriums*, *Davallias*, &c. In the *Cattleya*-houses a good display of autumn-flowering *C. labiata*, with a few *C. aurea* and other species in bloom were found. In another house, a number of grand plants of *Dendrobium formosum* giganteum, well furnished with their large white

and orange flowers; also *Dendrobiums*, *Cypripediums*, &c. Overhead in the house in which were these plants, a noble plant of *Aristolochia gigas* has produced its large and wonderfully-marked flowers for the last two months, and may continue in flower till the new year.

Looking through the cool-house, we noted *Odonoglossums* in good condition, with some large plants of *O. grande* in bloom; and among the *Masdevallias*, the curious *M. pulvinaris* and a few other botanical species were in flower. Mr. Latham has not been unmindful of effect in the dull season, for he has done much by careful planting to compensate for the loss of interest in the outdoor garden when the flowering plants are over.

(To be continued.)

A TRAVELLER'S NOTES.

(Continued from p. 553.)

PENANG.—The Public Gardens, some 55 acres in extent, are, as I have said, about $4\frac{1}{2}$ miles from Georgetown. They are horseshoe in shape, quite encircled by a range of hills of about 500 feet elevation. All the ground is undulating. I do not think there can be a dozen consecutive level square yards in the garden. On account of the natural situation and the amount of water, the garden is extremely pretty, and when the newly-planted trees have grown larger, it will really be a very pretty spot. The place is so far young, Mr. Curtis not having been at work on it more

On the right-hand side of the house are some fine *Anthurium crystallinum*, foliage *Begonias*, *Anthurium Ferrierense* × in flower, *Eucharis* in flower, by the side of some strong pieces of *Adiantum peruvianum* and *Nephrolepis davallioides furcans*. At the end is a fine clump of *Angiopteris evecta*, 8 feet high and not less than 10 feet through, as fine as I have ever seen it. Much of the rockery is covered with *Selaginellas* and other low-growing plants, amongst which may be mentioned *Acrotrema costatum*, interesting as being the only member of its order not a tree.

On the left-hand side of the house are *Davallias*, *Aspidistra variegata*, *Curmeria picturata*, and another fine piece of *Philodendron gloriosum*. *Marantas* grow particularly strong, and *Heliconia rosea* is as strong and highly coloured as at Calcutta. *Cyrtodeira fulgida*, *C. chontalensis*, *Gymnostachyum* and *Fittonias*, as well as *Ficus repens*, help to hide the rock. They grow with great freedom, and are highly coloured. On a pillar near the entrance, *Ficus villosa*, with its clinging, overlapping leaves, is very pretty. *Caladiums*, *Dracæna Goldieana*, and others also do well in this house.

On regaining the main road (which is 18 feet wide), and proceeding for a little distance, one has on the right, at the foot of the hill, a nice grove of the Betel-nut Palm (*Areca Catechu*). Though not so graceful as the Cocoa-nut, it has a tall slight whitish stem, and, with its small tuft of stiff leaves, is of great beauty. Near a fine *Ficus Roxburghii*, with the same immense cordate leaves I saw at Calcutta, is a good piece of *Livistona chinensis*. It does not grow so long and thin as with us in pots; here the foliage is closer, and the habit of the plant round and regular.

many offshoots. An *Areca*-like Palm—*Archontophoenix Alexandræ*—is also very pretty; whilst another, with stiff *Kentia*-like leaves, each one of which is at a sharp angle with the main stem, is not only pretty, but of economic value, as its stem, when split, being as hard as whalebone, is found very useful, and much used for fences; its name is *Oncosperma filamentosum*. Opposite a rain-tree the side of the hill is somewhat rocky and precipitous. Against this Mr. Curtis has planted *Philodendrons* and *Pothos aurea*; the latter has magnificent highly-coloured leaves; the top is clothed with a natural undergrowth of *Gleichenias*. A large *Cymbidium*, on the stem of an *Alstonia scholaris*, attracts the attention of the new comer. The natives of Penang make from the stem of the *Alstonia* a sticky juice for catching birds.

The road leading to Mr. Curtis's bungalow is on this side of the garden, but before reaching it I noted one or two other plants. Near a Maltese cross-shaped bed of *Crossandra*, and a capital bed of blue *Plumbago* in full bloom, is a specimen of a common jungle tree, with pendulous, catkin-like-looking flowers, not unlike a Willow—*Crypteronia pubescens*. Near it is a piece of the true yellow-stemmed Bamboo. Another striking plant, belonging to the *Araliaceæ*, is *Brassaia actinoptera*, lately received from Sydney; its foliage is much like an *Aralia*, but the leaflets, usually ten in number, and often 1 foot long, are cut to the base of the leaf. The Durian—*Durio zibethinus*—known for its powerfully-scented fruit—is represented near here, and on the bank of the stream, under shade, are some superb masses, great bushes of *Heliconia aurea*. I also noticed two or three *Alsophilas* with nice stems and even heads. Under the shade of a *Caryota urens* some *Crinum asiaticum* collected in the island were doing well.

The road to the bungalow winds tortuously up the small hill amongst the thickest jungle. Mr. Curtis has not yet been able to clear this away. It is beautifully shaded, and most wild and natural.

Opposite the road is the nursery, enclosed by a hedge of *Hibiscus* varieties. Beyond this, and before reaching the waterfall, the ground undulates considerably, and many single specimens, as well as a few clumps, have been planted; nothing has, however, yet attained any great size. Amongst the single specimens, *Bauhinia purpurea* was in flower, as well as the magnificent *Spathodea campanulata*; its flower is about the size of that of a Vegetable Marrow flower, orange and scarlet in colour. In Ceylon I saw trees covered with blossom—a most striking sight.

Araucaria Cookei forms regular specimens; and *Panax*, *Russelia floribunda*, *Sericographis Ghiesbreghtiana*, and *Acalypha torta* are used in some of the beds.

Opposite a young group of Palms on the top of a high knoll are some *Spathodea*, *Plumeria acuminata*, a grove of the fine *Cassia fistulosa*, and an old friend, *Mimusops Elengi*, with its thick, rich, glossy foliage. The Logwood, *Hæmatoxylon campechianum*, also does well.

The whole park is under grass, coarse but good, especially when it is taken into consideration that rain has not fallen for several weeks, and watering by hand has not yet been commenced. Where possible, "Doab-grass" has been laid down; but, as this is difficult to get, it is only used in the parts of the garden most in view.

Near a small bridge approaching the waterfall is a fine regular piece of the wild Cinnamon, 25 feet high, clothed to the ground with rich glossy foliage. On a hillock to the right are some *Wormia Burbridgei*, 4 feet high and not less than 5 feet through. Overhanging them were the long pendulous shoots of some *Bougainvilleas*. A tree much planted in the garden is *Calophyllum inophyllum*, its leaf, much like that of *Ficus elastica*, is thick and glossy; it was covered with pretty heads of white flowers with rich golden yellow stamens. The flowers are powerfully scented, a valuable oil is pressed from the seeds, and the timber is excellent. The habit is regular and even, and a tree in flower forms a pretty sight.

A small plantation of economics at the end of the garden includes Camphor, Nam-Nam, a native fruit; Cola Nut, like Cocoa, from Kew; Chinese Leeches, Jack and Bread fruits. This has been made too recently for any results, but in time the experience gained in this garden will doubtless prove useful to the planters in the island. Opposite this, near a *Poinciana regia* and young *Grevillea robusta* are different kinds of rubber plants, and some Liberian Coffee; a curious rubber is *Landolphia Kirki*, a climber from Africa.



FIG. 99.—CORDON PLUM TREE. (SEE P. 640)

than six years, the first of which was chiefly employed in clearing jungle.

A road completely encircles the garden, sufficiently wide for driving; and smaller paths wind in and out. On one side is Mr. Curtis's bungalow, on a hill of some 250 feet elevation, completely overlooking the whole place; it is a grand situation. There are three thatched houses dotted about, various glades, a large waterfall at one end, and two streams of water running through the gardens. Near the only entrance, on the side of the main road, is the largest of the plant-houses, covered with the split-leaf stalks of a Palm. Here are cultivated such plants as would burn, or could not otherwise stand the excessive heat without protection. On either side of the entrance are two strong bushy pieces of *Ptychosperma Macarthurii*, about 10 feet high, very handsome when grown like this. Part of the entrance is covered with *Bignonia Chamberlaynei*. In the centre is a low undulating rockery of irregular shape, whilst on each side is a long low rockery, running the length of the houses. In the centre bed are some fine plants, notably a *Cycas circinalis*, 12 feet in diameter (each leaf being at least 6 feet long). *Anthurium regale* is particularly fine, and *Nepenthes phyllamphora*, running up one of the pillars supporting the roof, is noticeable. *Alocasia Johnstonii*, with its curious brown spiny petioles, grows nearly 10 feet high—not far from it is the best piece of *Anthurium Veitchii* I think I have yet seen out of England; it has now leaves $2\frac{1}{2}$ feet long. But perhaps the largest Aroid in the house is a magnificent *Alocasia* from Calcutta, the specific name of which is not known; and next comes a fine rather dwarf-growing *Philodendron gloriosum* some 9 feet through, overhanging a *Nepenthes ampullaria* and *N. Rafflesiana*, growing luxuriantly on the side of a small tank.

On the left of the road, not far from the entrance, is the band-stand, on a low grass terrace. Round it are circular beds filled with red and white *Vincas*, *Zinnias*, *Coreopsis*, and a pink-flowering plant, *Beloperone* sp. The handsomest of these beds is certainly the one filled with *Crossandra undulifolia*. It is one blaze of bloom—the flowers of a beautiful brick-red tint. Mr. Curtis tells me it thus flowers for nine months out of the twelve.

Opposite the band-stand, right under the hill, covered with jungle, which bounds the garden, is a small thatched house, the roof being made from leaves of the Nipa Palm. Round the pillars supporting the roof are small circular rock-edged beds planted with *Marantas*, *Justicia carnea* flowering well, *Davallia Duffii*, *Tradescantia discolor*, and other small-growing plants of a like kind.

Behind this house for a few yards up the hill, the jungle has been cleared and planted with *Heliconia aurea*, *Anthuriums*, *Philodendrons*, and other Aroids. They are yet young, but growing with great luxuriance; the first-named, here, as in every other part of the garden, is most highly coloured. Cut into the grass, on the right side of the road near this spot, is a fine bed of *Gardenias*; whilst on the left, over a broad stretch of undulating grass, the garden can be seen stretching away to its opposite boundary. Its frequent undulations, numerous and varied single specimens of plants, the stream running through the centre, the great waterfall thundering at one end, and the whole enclosed by hills covered with vegetation as thick and luxurious as one could well see, well repays one for stopping and looking across the garden from this point.

In a group of recently-planted Palms I noticed *Livistona Adansoni*, with its glaucous, twisted foliage, near a tall *Cocos plumosa*, and a thick piece of *Ptychosperma Macarthurii*, 18 feet high, with

The waterfall, as I have said, is the main water-supply of Georgetown; from the new reservoir at its base, pipes run right through the garden. It is some 500 feet high, as it comes from the top of the hills surrounding the garden, but the fall of water is broken several times in coming down—it is the great sight of the garden. Beyond the waterfall the hill rises abruptly, and is of a rocky nature; so Mr. Curtis has planted Aroids, which will doubtless cover it in time.

Near a small pond on the right and on both its banks are Cacti and other Mexican plants. Mr. Curtis has determined to make this a feature in the garden, and to devote this spot to the object. With this idea he brought many of this class of plant out from Kew with him—they are, however, still too small to plant.

Beyond this is the finest plant in the garden, a magnificent *Grammatophyllum speciosum* on a rising mound, isolated from other plants, and surrounded by a shrubbery. We carefully measured it—its circumference is $42\frac{1}{2}$ feet, its shoots are from 6 to 7 feet long, its seed-pods with their stalks are $7\frac{1}{2}$ inches, without them 5 inches long; one of last year's spikes of which there were thirty, is $7\frac{1}{2}$ feet—the diameter of the seed-pods is $2\frac{1}{2}$ inches. The plant is in fine condition, nearly all the shoots being clothed with foliage of a good colour.

Beyond this plant the ground is much undulated—rising on the right, falling on the left. Near a very fair bed of Cockscombs and a very good one of Balsams, is a specimen of the Fishing-rod Bamboo from Siam—a tall, strong-growing pretty variety. I was also surprised to see a bed of the dwarf yellow-flowering Honeysuckle, blooming splendidly; it looked to me much like *Lonicera japonica*. In *Saraca indica*, with its immense heads of Ixora-like flowers, I recognised an old friend; a nice specimen is opposite the small Lily-pond, where *Victoria regia*, and other fine Lilies are to be seen.

Near here is a mass of the natural jungle—left when the garden was first cleared; it is to be cleared away, or at least cut through in a few days. It is thick, almost impenetrable, and wonderfully rich and varied; Cocoa-nuts and Areca Catechu soar above the other trees, but the lower vegetation is one mass of tangled foliage. There is a nice specimen of *Erythrina Crista-galli* in the garden, as well as a very fine specimen of the Nutmeg—*Myristica fragrans*—quite an ornamental tree, some 20 feet high, and clothed to the base with foliage of a rich glossy green.

The office, including the rich herbarium of Penang flora, collected by Mr. Curtis, is on this road, near the entrance; it is a nice, low-built structure, enclosed by a hedge of thick *Panax elegantissima*, the ends of the shoots being bright yellow; the plants are some 4 feet high.

Opposite this is a very handsome low-growing Palm—*Cyrtostachys Renda* is its name. It is somewhat stiffer, but otherwise much like *Areca lutescens*—that is to say, it has many young offshoots. Its beauty to me, however, lies in its brilliant red stems, petioles, and leaf-midribs. I am told it is very fine in Java.

One of the nicest houses—octagonal in shape, is in the centre of the garden; its roof is made of the split stalks of a Palm, and it has open sides. Many Orchids in pots are here in flower. *Calanthe veratrilolia*, *Dendrobium Dearei* (very good), a nice variety of *Cattleya Gaskelliana*, *Phalanopsis grandiflora*, a splendid piece of *Coclogyne asperata*, *Arundina bambusaefolia*, *Vanda insignis*, *Calanthe vestita lutea*, and *C. Regnieriana*, were all in flower, side by side with *Achimenes*, *Ferns*, *Aroids*, and small Palms.

Before leaving the garden, a few words about the nursery, as clean and neat as the other parts. There are four long Palm-stem roofed houses, in the first of which are all the latest varieties of *Cannas* growing well in pots. Young *Dracenas* and Palms for sale and planting out are also on one of the low side-beds. *Cattleyas* and *Lelias* are good, better than I have seen them in the East, and *Leptotes* and *Dendrobiums* hang from the roof. The other side is filled with small-foliage *Begonias*, and the centre bed with young Palms in pots, wonderfully smart and neat.

The house parallel to this is the Orchid-house. I was rather surprised at the quality of its contents, but Mr. Curtis considers that before he left the plants looked still better. *Pilumna fragrans*, *Lycaste Skinneri*, *Angraecum sesquipedale*, *Zygopetalum Mackayi* look well, and *Cypripediums* are well represented. *C. insignis*, *C. niveum* (from Kedah, opposite Penang, on the mainland), *Godefroya*, *Lowii*, *Lawrenceanum*, *concolor*, *Rothschildianum* look wonder-

fully well. I also saw some nice pieces of *Coclogyne Dayanum*, and some still larger ones of *asperata*. *Dendrobiums*—all kinds, particularly the *moschatum* section and *Dalhousieanum*—do as well as possible; and East Indian Orchids are fair.

The fernery is very good, and many of the specimens very large. Amongst the largest and best grown, I noticed *Adiantum trapeziforme*, *Farleyense*, *tenerum*, *Seemannii*, *Bausei*, and *Fergusonii*. In another house was a nice row of *Achimenes* and *Gesneras* in pots, both well flowered.

There was no object in staying longer with Mr. Curtis, unless I made an excursion to the mainland; but after talking the matter over with him, we agreed that Java would prove more interesting, and probably more useful from a learner's point of view. I therefore decided to go on to that island. J. H. Veitch.

(To be continued.)

ORCHID NOTES AND GLEANINGS.

THE SELF-PROPAGATION OF PHALANOPSIS.

At Lord St. Oswald's garden, Nostell Priory, Wakefield, in November, 1891, a strong plant of *Phalanopsis Stuartiana*, growing in a teak cylinder, started two of what appeared to be flower-spikes, one of which produced a small plant on the end, instead of flowers. This plant is now a fine one, with five leaves, the last made measuring $7\frac{1}{2}$ inches in length. It commenced to develop two flower-spikes, one of which was taken off; the other flower-spike, on the parent plant, bore fourteen fine flowers. *Phalanopsis* are well done at Nostell Priory. I shall be pleased to know if any of the readers of the *Gardeners' Chronicle* know of any similar occurrence. Jno. Edward Sadler, York. [Not uncommon. Ed.]

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

CUCUMBERS.—The plants should be cropped lightly at this season, and the fruits removed as soon as they are fit for use. Fumigate the pit or house if thrips are troublesome, and keep down red-spider by repeatedly syringing the bines with soapy water; and cut out old growths when that can be done without much loss of bine, and lay in young shoots in their places; and any leaves which may have begun to decay may also be removed to make room for others. Stop the leading shoots on young plants when they are half-way up the trellis, also the lateral growths just beyond the third leaf from the main stem. Maintain a bottom-heat of 80° , and a top-heat minimum of 70° , raising it 5° during the day in dull weather, and from 10° to 15° when bright. Open the ventilators a little about noon, when the weather is favourable. Use the watering-can sparingly, but at the same time the soil should not become dry, which it will readily do now that much fire-heat is necessary. The water used in the Cucumber-house and liquid manure should never be of less warmth than 85° to 90° . Where farmyard or stable drainage cannot be procured, potash or soda, or sulphate of ammonia, may be used instead. Top-dress the border or bed when the roots have permeated the soil, using a mixture of leaf-mould and horse-droppings in the proportion of three of the former to one of the latter.

MELONS AND TOMATOS.—Clear out old Melon beds, thoroughly cleaning the glass, woodwork, trellising, and walls, lime-washing the latter. A temporary staging may then be erected over the beds for the reception of Tomato plants in 6-inch pots. With this object in view, the staging should be raised as near the glass as circumstances will permit, in order that the plants, which should be 12 to 18 inches high, may obtain all possible light. Reduce all superfluous growth of Tomato plants in bearing to within the limits of the trellis, &c., cutting off a portion of each leaf, if needs be, to admit light to the fruits and blossoms, and tie up the growing points. When young shoots are fastened to the stems from which the fruit has been gathered,

the leaves on the stems may be entirely cut off, as well as all suppressed growth, up to the bearing point. Although Tomato blossoms do not set freely in winter, yet by having well-matured wood, and a dry and buoyant atmosphere, fertilisation may still be accomplished. To do this, go over the flowers daily, turning them face downwards, and tapping them with the finger gently, in the manner one would test the soundness of a tumbler with the finger and thumb. Another method is to disengage the anthers and transmit the pollen-grains with a fine-hair brush to the stigma. Superphosphate mixed with an equal amount of bone-meal and a third of kainit may be added to leaf-mould, and applied as a surfacing to the soil when it becomes exhausted. Attend to watering early in the morning, maintaining a temperature from 55° to 60° in the house, and ventilate whenever favourable.

FORESTRY.

By J. B. WEBSTER, Fairview, Stangmore, Dunganon.

SEASONABLE WORK.—In dry weather, remove layers from Lime tree stools and other trees and shrubs usually increased by that method, and plant them in nursery lines on well-prepared ground of a rich open texture. Dress the stools, and in cases where the soil has become exhausted, give a good dressing of leaf-mould, thoroughly decomposed dung, and fine sand, mixing and incorporating the whole together, and lay down the shoots of last summer for the next year's crop. Collect berries of Mountain Ash, Yew, Holly, Hawthorn, and the keys of common Ash and Hornbeam, and as these do not vegetate the first year, they had better be mixed with light sandy soil, and pitted (stratified), where they should be occasionally turned to promote the uniform decomposition of the pulp, skin, &c. Sometimes, however, the berries and Ash-keys are sown at once, and a crop of annuals raised on the surface of the seed-bed, and as these will be removed by next autumn it will allow freedom and space for the tree seedlings the following season. One bushel of fresh gathered berries of good quality should be allowed for 20 lineal yards of a bed 4 feet wide; press the seeds down on the surface, and cover them with about half an inch in depth of fine soil, usually that from the alleys. When gathering Ash-keys, care should be taken to select such as are produced on fine healthy trees, free of canker or blemish of any sort, in order to secure as far as possible a healthy progeny. Gather the acorns of the Oak, and in doing so, select the largest sizes, as they give by far the best plants. These may be sown at once or any time during dry favourable weather in winter up to the month of March. Sow the nuts broadcast on beds 4 feet wide, press them down on the surface, and cover them with fine soil to the depth of $\frac{1}{2}$ -inch. One bushel of acorns should be allowed for 25 lineal yards of a bed the above width. There are several varieties of the common Oak in cultivation, but the most approved tree is *Quercus robur* var. *pedunculata* (Linn.), which produces its acorns on foot-stalks, while the fruit of the inferior kinds are sessile or nearly so. The Turkey Oak, *Q. cerris* (Linnaeus) ripens its seed at the same time as the former, and is propagated in the same way. The seed of the common Beech, *Fagus sylvatica* (L.), should be gathered and selected as they fall to the ground from the tree. These may be sown immediately, or kept in a dry loft during winter, and sown in spring. Sow the "mast" on light sandy soil, formed into beds 4 feet wide; press the mast down on the surface, and cover them with about three-quarters of an inch of fine soil. One bushel of sound seed should be allowed for 40 lineal yards of a bed the above width. The sweet or Spanish Chestnut, *Castanea vesca*, also ripens its seed in autumn, when they may either be sown at once, or kept in a dry place during winter, and sown in spring. The seed may either be sown in drills about 18 inches wide from centre to centre, and the seed about 2 inches apart in the rows, or sow the seed broadcast on beds 4 feet wide, and cover them with 1 inch of fine soil. Before the covering is applied, the seed had better be pressed down on the surface with the back of a spade or roller. One bushel of good seed should be allowed for 30 lineal yards of a 4-foot bed.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

THE MEXICAN-HOUSE.—At this season the temperature of this division may range from 50° to 60° , more or less, according to the state of the weather; but what are of much importance are the atmospheric

conditions within the house, which should be regularly ventilated. The murky weather at this time of the year should be counteracted by just enough artificial warmth as will allow of air being afforded both at the top and the bottom ventilators by night and day, unless the outside air is too cold, or frost is impending. Under these conditions of the house, the flowering period of the short-bulbed *Lælias* is not unduly hastened, and few will open their blooms before the end of December. In very foggy weather, or collections growing in smoky towns, the flowers and foliage are alike injured, and it is not advisable at such times to open any of the ventilators, but rather maintain a gentle artificial warmth and a moist atmosphere; and if any of the plants should become very dry, lightly water them. Plants in a moist condition take less harm than when they are in a dry one [?]. Time permitting, it is good practice to wipe the leaves of Orchids with a sponge and clean water after fog has passed away.

THE COOL-HOUSE.—*Odontoglossum crispum*, *O. Halli*, *O. luteo-purpureum*, *O. triumphans*, and other allied species are sometimes attacked at this season with a kind of mildew, or rusty spot on the under surface of the leaves, which spreads fast until it reach the size of a sixpence or larger. If this mould is allowed to remain on a leaf for a short time it will leave behind it an undesirable and irremovable spot; and its appearance is proof of something being wrong with the atmospheric conditions of the house, and although sponging may remove it, it soon reappears if these conditions remain; and I would recommend for the cool house the same airy conditions as those afforded the Mexican Orchids, although the plants require more water at the roots and more moisture in the air than do those. The temperature should range from 45° to 60°, with warmth in the heating apparatus and ventilation at the top and bottom; increasing the latter in mild, damp weather, as it is then that a somewhat stagnant state of the air in the house favours the attacks of these minute moulds. Plants of *Odontoglossum crispum*, if weakened by any cause, are slow of recovery, and they require to be started anew in smaller pots, using as compost Orchid peat and sphagnum moss, and they should not be allowed to produce flowers until strength is regained; and if more than one break appears, as is often the case with weakly plants, all but the one which should take the lead on the last made pseudo-bulb should be removed.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

PEARS ON WALLS.—The leaves having fallen, pruning should be pushed forward. Old trees usually have too many long fruit-snags, and these should be sawn off to within half an inch (or less) from the main branches, and smoothed over. Care should be taken not to cut off many of the fruit-buds; and all shoots made in the summer should be cut back to a couple of buds from the base, regulating and fastening the main shoots, and leaving space for the wood to increase in thickness. Young trees should have their leaders shortened back to where the next pair of branches is wanted, leaving one bud to make the leader next season, and this should be annually practised till the tree has made its last pair of branches, or if a fan-trained tree till the space is covered. In whatever mode it is intended to train young trees, be it horizontal, fan-shape, or herring-bone, the branches must be sufficiently far apart to allow of a clear space of wall being visible between the foliage, thus allowing the direct rays of the sun to reach the fruit. For small-leaved varieties 9 inches should be left, and for strong growers or large-leaved varieties 12 should be left. Do not shorten back too closely the side shoots, which will form the main branches, but leave these of good length, and they will soon furnish themselves with fine fruit-spurs without much stopping. Cordon Pears planted at 15 inches apart soon refill the walls, or they may be planted wider apart, and from two to three branches trained from each at 1 foot apart. Horizontal cordons look nice objects, and bear well by the sides of paths, if lifted occasionally, and properly treated. They should stand about 20 inches from the ground (figs. pp. 640 and 641). Bushes should be planted where there is space for them in the kitchen garden, and they are preferable to pyramids, the fruits being more exposed, being finer, and higher developed. When pruning pyramids, cut to an eye on the opposite side to which it was cut the previous year, so as to provide symmetry of form; and put to

each tree a stake sufficiently long to fasten the growing leader to. Bushes should be made with an open centre, and the several branches trained outwards by means of stakes, and secured for a few years till the position becomes fixed. Newly-planted Pears should not be pruned till February, and those spring-planted not before a year has elapsed.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

HARD WOODED GREENHOUSE PLANTS.—Plants of *Azalea indica* should be frequently examined, and if thrips are discovered on the foliage, wash them well with an insecticide, or fumigate the house lightly on two or three evenings in succession. And as at this season work is not so pressing, all the trained specimens of *Azaleas* should be retied, and put generally in good order. The same will apply to *Ericas* and any of the New Holland plants. As many species have very small hair-like roots, which are easily injured if many sticks are used in shaping them, it will be well to use as few of these as possible, and to make them fine-pointed, and no larger than will serve the purpose. Avoid formal training, but allow as much freedom as the natural habit of growth indicates as being the most suitable. Plants grown for furnishing flowers for cutting need but few sticks, some none at all, the continual cutting the plants endure tending to keep them in form. Air should be admitted freely to the greenhouse containing these plants when the weather permits, but draughtiness should be avoided. At this season mildew sometimes infests these plants, and constant watchfulness is required, and the free use of sulphur-flowers if it be discovered on *Ericas* and other plants.

FORCED PLANTS.—Any plants which will be required to be forced remaining unpotted, should be at once potted, and plunged in coal-ashes either out-of-doors or in a pit or shed, bringing them first into a greenhouse, and then into the forcing pit, as requirements dictate. *Kalmias*, single and double-flowered *Cratægus*, the early-flowering varieties of *Rhododendron hybridum*, *Staphylea colchica*, *Viburnum*, *Spiræa*, *Hotelia*, *Astilbe*, *Pyrus*, *Cerasus*, &c., may be placed in a fruit-house which is about to be started, the plants blooming much better if thus brought on gradually.

Roses for early flowering should be pruned forthwith, and placed where the night temperature is kept at about 50°, with a rise by day of 10°, occasionally fumigating them to check aphids. Those which are grown in the early fruit-houses should be cut hard back, and dressed with a mixture of Gishurst Compound, or with one made of sulphur, soft-soap, and clay. The surface soil of the border should be replaced with a stiff, rich, fresh compost, and if water at the roots is needed, afford a thorough soaking with tepid-water.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

VEGETABLES FOR FORCING.—The various materials used for forcing these should be got together in country gardens during the present month and December, whilst plenty of tree leaves are lying about, and the ground is still free from snow. The leaves of Beech or Oak are best, as being more lasting in the hot-bed, and affording good leaf-mould when rotted, which softer leaves do not. In addition to the leaves, stable litter is of use, especially in making hot-beds in the open, or in starting early fermentation in the same, or in the heaps of materials from which these are made. All heaps of leaves and litter should be turned over several times after heating has begun, so as to get the whole evenly heated and sweetened. When the rank steam has passed off, the materials are ready for use, and with due care, the fumes will then, not harm the tenderest leaf.

ASPARAGUS may now be placed in heat, the particulars as to forcing given in previous *Calendars* being adhered to. Care should be taken to have the bed sufficiently large that it will afford heat to finish the forcing of the shoots, otherwise only the strongest will push up, and the smaller ones decay. Means should also be taken to let the moisture arising from the process of fermentation escape freely; but if the preparation of the material has been properly done, there will not be much moisture, and the heat will be steady. The roots placed in the forcing-house should also get some amount of bottom

warmth to enable the crowns to push forth shoots. When water is necessary, it should be warmed up to 80° or 85°. *Asparagus* beds forced in the open should now be got in readiness, and if some of these are annually forced, there will be no difficulty in getting the plants in them to start. If leaves form the heating material, a large quantity must be prepared, so that heat may be steady and continuous; and over the sashes or shutters used to cover the bed, some warm litter must be placed. Strong roots of *Asparagus* cost much money, and most gardeners dig up some old bed or beds for the early forcing in preference to buying. Roots should now be lifted, and in case great numbers are required, the beds should be covered with litter or leaves to keep out the frost. At Syon the permanent beds in the open furnish our supply after February, and tree leaves are employed to afford heat to these.

SEAKALE roots should now be placed in the forcing-house at fortnightly intervals, and as the best flavoured Seakale comes from roots slowly forced, the temperature should not exceed 55° to 60°, the bottom-heat being 5° to 10° warmer.

MINT AND TARRAGON may be placed in warmth, the former in boxes, or on the bed itself, and covered with a little light soil. When above ground the plants must have light, so that boxes are perhaps the more handy, as they can be removed when the plants have sufficiently grown.

RHUBARB.—Place the roots in the forcing-house in numbers sufficient for the requirements, which are often large, at the new year. Choose an early pink-skinned variety, and roots which have grown on a warm border, and which therefore matured their growth at an early part of the autumn. The whole of the roots may be lifted for forcing, placed thickly together under a wall, and well covered with soil or litter.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

BEDDING-PLANTS.—If the gardener has no better accommodation than that afforded by cold pits for *Pelargoniums* to winter in, care is necessary to save even a third of them, their great enemy in such places being damp. It is advisable that plenty of air be afforded whenever the weather is mild, a mixture of soot and lime deposited among the pots, and between the latter and the brickwork. A covering of Fern, straw mats, or litter is required to put over the glass at night to ward off frost. In mild weather, the frames in which *Pansies*, *Calceolarias*, and *Leucophytos*, are growing, should be well aired by drawing off the lights; and if mildew make its appearance on any plants, at once dust them over while damp with flowers-of-sulphur. Bedding plants being wintered in vineries, peacheries, and other structures which can be heated, must have an abundant ventilation, and they should be kept rather dry at the roots to prevent growth being made before the spring.

HARDY FERNERIES.—In most gardens there are shady and sometimes objectionable nooks, which might be rendered interesting and beautiful by building up a bank with roots and butts of trees, logs, rugged stones, clinkers or burrs from the brick-yard, and planting strong-growing Ferns among them. In placing the materials, observe that most of the blocks of wood or stone recede instead of projecting, so that the plants in interstices may derive full benefit from rain [unless the face of the block is towards the west or south-west, Ed.], and avoid formality of outline and a too level surface. For a soil make use of one of a light open description; fibry peat and loam of the same kind are good to use alone or mixed with the staple. A naturally stiff and heavy soil should be lightened by a large addition of leaf-mould or peat, mixing the whole well together before use. The following species and varieties may be planted, with the certainty that they will afford satisfaction:—*Asplenium* species, *Adiantum nigrum*, *Allosorus crispus*, *Adiantum Trichomanes depauperatum*, *Athyrium filix-femina*, and any of its varieties; *Blechnum spicant*, *B. imbricatum* erectum, *Cystopteris alpina*, *Lastrea cristata*, *L. filix-mas* and its varieties, *L. polydactyla*, *Osmunda regalis*, *Polypodium dryopteris*, *P. hibenum*, *Polystichum aculeatum*, *P. angulare*, *P. a. cristatogræle Jacksonii*, *Scolopendrium vulgare* in variety. In planting, make the soil moderately firm about the plants, and afford water as soon as the planting is finished.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

- WEDNESDAY, NOV. 30 { Annual Dinner of the National Chrysanthemum Society, at Anderton's Hotel, Fleet Street, London.
- FRIDAY, DEC. 2—Dundee Horticultural Association.

SALES.

- MONDAY, NOV. 28 { Dutch Bulbs at Protheroe & Morris' Rooms.
Plants sale at Protheroe & Morris' Rooms.
Dutch Bulbs, Lilies, Plants, and Shrubs at Stevens' Rooms.
- TUESDAY, NOV. 29 { Bulbs at Protheroe & Morris' Rooms.
The Maplewell collection of Masdevallias at Protheroe & Morris' Rooms.
Dutch Bulbs, Lilies, Plants and Shrubs at Stevens' Rooms.
- WEDNESDAY, NOV. 30 { Great Fruit Tree Sale at Perry Hill, Cliffe, by order of Mr. W. Horne, by Protheroe & Morris.
Bulbs at Protheroe & Morris' Rooms.
Lilium auratum and other Lilies at Protheroe & Morris' Rooms.
Sale of Lease, Stock, and Furniture at the Nurseries, Staines Road, Hounslow, by Protheroe & Morris.
Dutch Bulbs, Lilies, Plants and Shrubs at Stevens' Rooms.
- THURSDAY, DEC. 1 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Plants, at Protheroe & Morris' Rooms.
Dutch Bulbs, Lilies, Plants, and Shrubs, at Stevens' Rooms.
- FRIDAY, DEC. 2 { Clearance sale of Orchids at Protheroe & Morris' Rooms.
Dutch Bulbs at Protheroe & Morris' Rooms.
- SATURDAY, DEC. 3 { Dutch Bulbs at Protheroe & Morris' Rooms.
Dutch Bulbs, Lilies, Plants and Shrubs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°·3.

THE following extract from our excellent contemporary, *Garden and Forest*, is so much in harmony with what for many years past we have been endeavouring to advocate, that we gladly transfer it to our columns. Gardening will be no less of a delight and a recreation if it be pursued in a scientific spirit than it is now, while practically its value is certain to be greatly enhanced by the information which the accurate study of nature affords. No surer foundation for substantial improvement in the arts of agriculture and horticulture (says our contemporary) can be laid than a broader and deeper knowledge of the sciences on which they rest; and, certainly the science of plant-life is chief among these:—

"Some time ago Professor BAILEY made a plea for a broader botany. We quoted largely from the article at the time of its publication, and will only repeat that the fact complained of was the restriction of botanical science to the study of wild plants. This was natural in earlier days, when there was little attempt to apply science to cultivation, but since the theory of evolution has come to be accepted, a new purpose has been given to the study of all natural objects, and cultivated plants especially have gained a fascinating interest because they furnish such conspicuous examples of variation and heredity. The great mass of material which the multiplied species of cultivated plants afford can be made to illustrate the accumulative effect of modified environment and selection under the influence of human care as wild plants cannot possibly do. They can show within a brief period as much progression in definite lines as their wild prototypes could show in ages. This makes the garden one of the best places in which evolution can be studied. But the point which it is proposed here to insist upon is, that more and more it should be the endeavour of those interested in

agriculture and horticulture to bring into practical use the facts and laws which science discloses, and make them actually helpful in the cultivation of plants. The study of botany as pure science, the investigation of the laws of plant physiology and variation under different conditions, can have abundant application in improving the quality and changing the character of economic plants as well as in developing new and better methods of cultivation. This means that not only should increased attention be given to the study of fungi and bacteria and other special branches of the science, but that more attention should be given to investigations and experiments, to show how all the general truths of the science can be applied to the improvement of agricultural and horticultural practice.

The increased interest and attention which the study of botany has attracted, and which is seen in the numerous State and national gatherings of men of science where a growing number of subjects in this field are discussed in a broad and practical way by able men and women, is largely due to the work in the agricultural colleges and in the national Department of Agriculture. The work of practical botanists can be seen in numerous journals and transactions of these societies, in many books and bulletins. The place which the science of botany ought to fill in a well-conducted institution for the advance of agriculture is coming to be understood and appreciated, and Dr. BEAL is right in saying that no agricultural college can rank among the best where a professor of botany is required to teach any other subjects, and a simple enumeration of a few of the essentials of a botanical department according to his view will show how many-sided and comprehensive its equipment should be. It should have enthusiastic workers in the field, good collectors, and persons well skilled in preparing plants for the herbarium. In agricultural colleges particular attention should be given to Grasses and forage-plants, trees, shrubs, and weeds. The herbarium should include specimens of cultivated plants, both those that are grown in orchards and vegetable-gardens as well as those that are grown for ornament. The laboratory should be supplied with so many compound microscopes that only one person should have access to the same instrument during any term; it should have microtomes, reagents in abundance, with all needed apparatus for experiments in plant physiology and for photography. It should have duplicated volumes of needed reference-books all the time in the class-room, besides a generous library. It will not be complete without a museum of plant-products and numerous green-houses for giving different varieties of temperature, light, and moisture. Beyond question, it should have a botanic garden and arboretum, where growing plants could be studied, each in the soil and exposure best adapted to it. Of course, it should have a liberal, uniformly increasing and permanent endowment, not only because a properly equipped and conducted botanic garden in itself involves an immense outlay of money, but because the botanic department of a progressive university, if it is under efficient management, will develop in all directions just in proportion to the means at its disposal."

TAXODIUM MUCRONATUM.*—We are indebted to Mr. RASHLEIGH for the opportunity of figuring very probably the oldest living inhabitant of our globe, and one of the noblest and most famous trees in the world. It is a near ally, indeed probably only a variety, of the deciduous Cypress of Florida, *Taxodium distichum*, which we have often figured in these columns from Sion and elsewhere. The tree we now illustrate grows, according to a letter of an engineer correspondent, "eighteen miles south-east of the city of Oaxaca, capital of the State of that name, and just outside a church. When

I visited the tree for the first time, I was with a man who had measured it twenty-five years previously, and had the record in his diary of that date, showing the circumference to be 136 feet 6 inches. The circumference when I first visited the tree in 1886 was 139 feet, showing an increase of 2 feet 6 inches in twenty-five years. The trunk has the appearance of being an amalgamation of several trees, the height (about 120 feet) being so out of proportion to the diameter; and other trees of the same species at Chapultepec are much taller." We subjoin some further particulars taken from the *Pinetum Britannicum*:—The Mexican representative of the deciduous Cypress is distinguished from the type, by the less size, fresher green, and more slender and tapering character of its twigs and leaves—whence it has received the garden name of *T. pinna-tum*, by the size of its flower, the male flower being three or four times the size of that of *Taxodium distichum*, and by its more tender constitution [and, we may add, the absence of the singular outgrowths from the root so characteristic of the deciduous Cypress.] The tree itself reaches a greater size and age than any specimens of the type in N. America . . . It is found in the immediate neighbourhood of the city of Mexico, and in other parts of that district, and in Oaxaca, where the largest tree known grows near Santa Maria del Tulé (the tree now figured). It was at first supposed that, notwithstanding the difference of the climate in which it lives, and some differences in appearance, it was the same as the *Taxodium distichum*. HUMBOLDT saw the Oaxaca tree, and sought for a distinction without success. SEERMANN says he does not know any Conifer which is so closely confined to the vicinity of running streams. To say that some of the present trees were as old as the Incas is nothing. It would probably be strictly true to say that they were, to outward appearance, as old in their time as they are now. It is not by hundreds of years that their age must be counted, but by thousands. We have already mentioned that the tree at Santa Maria del Tulé, in Oaxaca, is no less than 200 feet in circumference. How many years must it have taken to build up such a trunk by the slow process of the deposit of an annual ring? There is nothing exceptionally rapid in the growth of these trees—we should call them slow-growing. If we take one line, $\frac{1}{12}$ inch of growth, to be the average breadth of annual deposit, that would give nearly 9000 years as the age. But ZUCCARINI in his estimate thinks it safer to assume one sixth of a line as the average, which would make it six times as old. The gigantic trunk of the tree in Oaxaca, near Santa Maria del Tule, was first mentioned by EXTER, who found its circumference to be 117·10 French feet. DE CANDOLLE doubted this, and thought there must be some mistake in the measurement, such as including in it the dilated base; but ZUCCARINI removed his doubts, and satisfied him that the measurement was taken above the dilated base, for if that had been included, the girth would have been no less than 200 feet.

The late Prof. ASA GRAY, alluding to these trees, says:—"By the same computation" [calculating the ages of old trees by comparing their size and rate of growth with those of young plants of the same species] "the Cypress at Attisco would be 3480 years old; or 2390 years if we allow it the maximum rate of growth for the first century. So, likewise, the great Cypress at Santa Maria del Tulé would be 5124 years of age, or 4024 years with the aforesaid deduction. The latter accords perfectly with DE CANDOLLE's minimum estimate; and it is the lowest age that, in the present state of our knowledge, can possibly be assigned to this prodigious tree, upon the supposition that its trunk is really single."

"After making every allowance for errors of observation and too sanguine inference, and assuming, in the more extraordinary cases, those estimates which give minimum results, we must still regard some of these trees, not only as the oldest inhabitants of the globe, but as more ancient than any human monument—as exhibiting a living

* *Taxodium mucronatum*, TENORE, PARLATORE, in *DE C. Prod.*, xvi., 441; MASTERS, in *Journ. Roy. Hort. Soc.*, 1892, xiv., 248. Syn., *T. Montezumae*, DECAISNE; MURRAY, in *Pinet. Brit.*, ii., 215, t. 36. *T. distichum*, *Garden and Forest*, March 26, 1890, f. 28.



FIG 10).—THE MEXICAN DICIDUOUS CYPRESS (*TAXODIUM MUCRONATUM*) AT TULÉ. (SEE P. 64.)

antiquity, compared with which the mouldering relics of the earliest Egyptian civilisation, the pyramids themselves, are but structures of yesterday." (*Scientific Papers of Asa Gray, selected by C. S. Sargent* (1889), vol. ii., p. 124.)

It is clear that the statements as to size and age vary too much for any reliance to be placed on them. Even our correspondent does not mention at what height from the ground his measurements were taken. A small wedge-shaped mass could be cut out of the trunk on either side without injury, and these sections would afford better evidence than any we yet have as to the rate of growth and age of the trees, especially if compared with sections of young trees growing under like circumstances.

The next largest trees are two, both near the city of Mexico; one in the gardens of Chapultepec, and the other the tree under which Cortez passed the night—known as the *Noche triste*—after the defeat and expulsion of the Spaniards from Mexico. Dr. PARRY (*Geological Reports*, i., 43), says, "The appearance of the Cypress (*Taxodium*), Sabino of the Mexicans, makes quite a striking change in the physiognomy of the country (the lower Rio del Norte, or Rio Grande)." This water and rock-loving tree often appears right in the middle of the swiftest currents of the river, where, having taken hold of some rocks on the bottom, it boldly defies the force and action of the water.

We are not familiar with the Mexican Cypress in cultivation, as it is rarely seen in this country, owing to its tender constitution. We believe, however, that there is a tree at Penrhyn Castle, near the Menai Strait.

PROPOSED EARLIER OPENING OF KEW GARDENS.—Mr. FRANCIS GEORGE HEATH, who has recently taken a leading part in a movement for the earlier opening of Kew Gardens, had an interview with the First Commissioner of Works on the subject. Replying to objections which had previously been urged by Mr. THISELTON-DYER, Mr. HEATH contended that no harm whatever would accrue to the plants by opening the gardens in the morning instead of at noon, but was merely a question of different arrangements for carrying out the work in the Gardens. Moreover, about a thousand persons had already the right of early admission. With respect to the argument of Mr. DYER that students and botanists would be inconvenienced, Mr. DYER had himself expressed the belief that the privilege would be used only by a few persons comparatively, and the inconvenience must therefore be necessarily small. Mr. SHAW LEFEVRE promised to give full consideration to the arguments which had been urged by Mr. HEATH, but pointed out that the making of fresh arrangements touching the work in Kew Gardens was likely to entail extra expenditure—it had been calculated about £600—and as that was a matter which affected another Government department, he must postpone a definite reply till this fresh aspect of the question had been considered.

POTATO EXPERIMENTS IN IRELAND.—A very interesting series of Potato experiments has, says the *Times*, been carried out this year by the Royal Dublin Society, the agricultural superintendent of which body has just sent an early proof of the report. It deals with the yields of marketable and sound tubers of various varieties, together with their cooking qualities, and, as these are based on no fewer than fifty-four experiments in as many parts of Ireland, the results should be very valuable. It is pointed out in the summary of the results that an interesting feature is the striking uniformity obtained in the two years' trials. This order is as shown below:—

Weight of Produce.—In weight of produce the Farmer comes first in both years by about 15 cwt. per acre. In 1891 the Champion stood second, but in 1892 the Bruce beat it by a fraction. The Colonel ranks lowest in both years. It will be noticed that the average produce of the Bruce and the Colonel is almost precisely the same this year as in 1891—a somewhat peculiar result from so many trials. The Bruce is the only variety that shows an increase over 1891 in gross yield of sound Potatos.

This increase, however, is entirely in "small" Potatos. It will be observed that the Antrim (which was not tried in 1891) stands fourth—before the Colonel—in weight of produce.

Disease.—Reckoned by their power of resisting disease, the four varieties tried in the two years stand as follows:—First, the Bruce; second, the Colonel; third, the Farmer; and last, the Champion. In all the four varieties there is rather more disease this year than last. The greatest increase is in the Champion, a fact which affords another indication of the declining vitality of this much-valued Potato. It will be observed that in ten trials in the province of Munster, the percentage of diseased Potatos in the Champion was no less than 12·34. It is interesting to note that the Antrim, the newest Potato of the five tried this year, comes out with the lowest percentage of disease.

Quality when Cooked.—The uniformity in the results for the two years are just as striking in regard to quality as to weight of produce and percentage of disease. The Champion still maintains a long lead in respect of quality. The Bruce, Colonel, and Farmer follow in the same order in both years. The Antrim just beats the Bruce for the second place.

THE FOG NUISANCE.—Invariably at this season, when dreary November days are drawing us farther into the heart of the winter, our attention is drawn to the common winter scourge of London, and indeed of all the large manufacturing towns. How to prevent it? In what measure may its baneful effects be minimised? These and other questions are continually presenting themselves for solution. During the last few seasons, at any rate, a more or less organised attempt has been made in many centres to analyse this dreaded mixture, in order to more effectually determine its origin, and to furnish information that may lead to more useful results hereafter. Its deadly effects upon plants and animals have been carefully recorded. Suggestions in the hope of abating its ravages have not been wanting, but at present no advance has been actually made, and we are the victims of its terrible poisoning in a measure which increases year by year. Those who may be interested in the question as it applies to plants—and who is not?—would do well to go to Messrs. TOOPE & Co.'s establishment at Stepney Square, London, E., and inspect a process which has been patented by Mr. TOOPE for preventing injury by fog to plants in houses, and known as "TOOPE'S Fog Annihilator." The method, as far as we understand it from Mr. TOOPE, is as follows:—The house is built as airtight as practicable, and several inlets are made close to the bottom, on the inner side of which is placed one of Mr. TOOPE's patent air-purifying boxes, through which the whole of the admitted air is compelled to pass. In the centre of the roof are several patent exhaust pipes, which afford an outlet for the warm air, and this is, of course, followed by a supply of exterior air, which has been purified in the process above described. In this way a continual circulation of fresh air is effected strong enough to carry a flame or smoke from a taper, unmistakably towards one of the exhaust-pipes. Mr. TOOPE finds no difficulty in admitting air in any quantity as the weather may render necessary, nor is the principle less adaptable to large houses than to smaller ones. When we visited the place a few days ago, there were many plants whose sensitiveness to fog is well known, such as *Euphorbia splendens*, *Poinsettias*, *Ruellias*, seedling Cucumbers, Tomatos, &c.; and these, although fog had been only too dense, were apparently uninjured. Unfortunately, the district is so inimical—even at its best—to plant life, and the glass in the house so black, that but a poor light is obtained even when fog is absent; but for these circumstances, the blanched appearance of some *Calanthe Veitchii* would have suggested the evil the house was designed to obviate. This attempt to grapple with one of the worst pests a gardener has to fight deserves encouragement, and we shall be glad to hear that it is successful in providing him with an effectual weapon.

LINNEAN SOCIETY.—An evening meeting will be held on December 1, 1892, at 8 P.M., when the following papers will be read:—1. "Notes on *Ecodoma cephalotes*, and the *Fungi* it cultivates," by J. H. HART, F.L.S. 2. "On a small Collection of Crinoids from the Sahul Bank, N. Australia," by Prof. F. JEFFREY BELL. 3. "Descriptions of Twenty-six new species of Land Shells from Borneo," by E. A. SMITH.

—At the ordinary meeting, held on Thursday, November 17, Professor STEWART, President, in the chair, the President having announced a proposal by the Council to present a congratulatory address to the Rev. LEONARD BLOMFIELD (formerly JENYNS), M.A., F.L.S., on the occasion of the seventieth anniversary of his election as a Fellow of the Society, and in recognition of his continuous and useful labours as a zoologist, it was moved by Sir WM. FLOWER, and seconded by Dr. St. GEORGE MIVART, that the address be signed and forwarded as proposed. This was carried unanimously. In moving the resolution, Sir WM. FLOWER took occasion to sketch the scientific career of Mr. BLOMFIELD, who is now in his ninety-third year, and to recapitulate the works of which he is the author under his earlier and better-known name of JENYNS. The address, which was beautifully illuminated on vellum, was then signed by those present. Mr. BUXTON SHILLITOE exhibited a cluster of the fruit of *Pyrus sorbus*. A paper was then read by the Rev. Professor HENSLOW, "On a Theoretical Origin of Endogens through an aquatic habit, based on the structure of the vegetative organs." The lecture, which was very fluently delivered, was profusely illustrated, and drew forth some interesting criticism from Professor BOULGER, Messrs. HENRY GROVES, H. GRESS, and PATRICK GEDDES, to which Professor HENSLOW replied.

BOURNEMOUTH AND DISTRICT GARDENERS' ASSOCIATION.—Professor JOHN WRIGHTSON, of Downton College, delivered a lecture on the "Chemistry of Soils" at the fortnightly meeting of the above on Wednesday, November 16, the lecture being given under the auspices of the Technical Education Committee of the Hants County Council; admission was free to the general public. A good number of the latter, and a strong muster of the members of the association made up a large and attentive audience. Professor WRIGHTSON made use of clear and concise language, and thus rendered a difficult and complex subject easily understood by those possessing little or no knowledge of chemistry.

SOCIETY OF ARCHITECTS.—The second ordinary meeting of the Society of Architects for the session 1892-93 will be held at St. James's Hall on the 29th, when a paper will be read by Mr. G. W. USILL, R.M.Inst. C.E., entitled "Levelling and Contouring as applied to Architecture and Landscape Gardening."

INSTRUCTION FOR PRACTICAL FORESTERS' AND GARDENERS.—The scheme which has been elaborated by Professor BAYLEY BALFOUR, for giving a course of free instruction to practical foresters and gardeners in the Royal Botanic Gardens, Edinburgh, was auspiciously started on the 17th inst., says the *Scotsman*, in the presence of a number of gentlemen interested in arboriculture and horticulture, and of a full complement of pupils. There were in all sixty-seven applications from young practical gardeners and foresters for the benefit of the scheme, and of these forty-four were accepted, and have received tickets for the course. A proportion of these young men have been engaged at a weekly wage as gardeners at the Royal Botanic Gardens; the others are employed in the various nurseries in the city. The visitors included Mr. M. DUNN, Dalkeith, vice-president, and Mr. W. J. MOFFAT, secretary of the Royal Scottish Arboricultural Society; Mr. W. WELSH, president, and Mr. R. LAIRD, secretary of the Scottish Horticultural Association; Mr. LINDSAY, curator, Botanic Gardens; Mr. JAMES GRIEVE, Pilrig Park; Mr. JAMES MOFFAT, and others.

Professor BAYLEY BALFOUR, after giving a cordial welcome to the students, said it was not intended to teach them in the class-rooms to be practical foresters or gardeners. That must be learnt elsewhere. But if they wanted to know the secrets of forestry and of horticulture, they ought to have a sound knowledge of the scientific basis upon which they worked. It was meant, therefore, to give them some insight into the sciences that underlay their work. This winter they should have three courses, one on chemistry and one on physics, and, in addition to that, they should have a course on mensuration and land measuring. This last course would be begun this winter; but they would do more at it when the long evenings came. They would then go out into the garden, where surveying instruments would be provided. They would be taught to use these instruments, to survey land, and to draw out plans. After these subjects had been gone through, they should then proceed to deal with botany, which treated of the actual plants they would handle; of geology, which treated of the soils in which the plants grew; they should also have a course of meteorology, giving them the application of physics to the study of climate; and a course on entomology, which would work into the course of botany, and would show them how insects affected forest and garden plants in health and disease. After that they should have lectures on forestry and horticulture, treated by experts from a practical point of view, and he hoped it would be possible to arrange for excursions to neighbouring estates and gardens. August and September would be holiday months. Professor BAYLEY BALFOUR then stated that it had been arranged that this winter Dr. LEONARD DOBBIN should lecture on Tuesdays on Chemistry; Dr. WM. PEDDIE on Physics on Thursdays; and Mr. A. D. RICHARDSON on Mensuration and Land Surveying on Tuesdays.

TROPICAL AGRICULTURE.—Enquiries frequently reach us as to authentic works on this subject. Some of our English treatises are merely compilations executed by authors without any special knowledge of the subject; others are incomplete. To those conversant with the French language, we may commend the *Manuel Pratique des Pays Chauds*, by the late Dr. SAGOT, and edited by M. E. RAOUL. We are familiar with the excellent articles on the subject communicated to the French Horticultural Press. The work, which we shall notice at greater length hereafter, is published by AUGUSTIN CHALLAMEL, 5, Rue Jacob, Paris; and may be had of Messrs. WILLIAMS & NORGATE.

PRIMULA POISSONI is likely to prove a useful garden plant, as it flowers in early winter. There is a batch of it in flower in the Cape-house at Kew, some of the plants bearing scapes 2 feet high, with several whorls of open flowers. The species is not unlike *P. japonica* in habit, but it has thicker and less crimped leaves, and the flowers, although quite as large, differs in form as well as in colour, being soft mauve, with a conspicuous yellow eye. Plants in the open ground have grown freely, but they are not likely to flower. Evidently this species thrives best when treated as a cool greenhouse plant. It was introduced from China by the Abbé Delavay several years ago, and flowered for the first time at Kew last year.

SALE OF RARE BOTANICAL BOOKS.—The extensive and valuable library of Count LOUIS APPONYI, of Nagy Apponyi, Hungary, which has lately been sold by auction by Messrs. SOEBEY, WILKINSON, & HODGE, of Wellington Street, Strand, London, included an extensive series of botanical books. This library was formed by the present proprietor's great grandfather, Count ANTOINE APPONYI, an accomplished scholar who died at Vienna in 1817. The items, with the prices at which they were sold, of especial interest to our readers, include the following:—N. T. Host, *Icones et Descriptiones Graminum Austriacorum*, 4 vols., 400 finely coloured plates, Vienna, 1801-9, £8 10s. (published at £45 18s. unbound); the following

works by N. J. Jacquin: *Observationes Botanice*, 100 plates, 1764-71, £3; *Hortus Botanicus Vindobonensis*, 3 vols., 300 plates, £5 15s. (only 162 copies printed, another copy was sold in the same rooms some time ago for 14 guineas); *Flora Austriaca*, 5 vols., 500 plates, 1773-78, £9 15s. (the last copy sold at auction realised £31 10s.); *Icones Plantarum Rariorum*, 3 vols., 648 beautifully coloured plates, 1781-93, £7 15s. (one of the most magnificent works on botany ever published, and of which a previous copy realised £17 5s.); *Oxalis Monographia*, 81 plates, quarto, 1794, £1 1s.; *Plantarum Rariorum Horti Cesarei Schönbrunnensis Descriptiones et Icones*, 4 vols., 500 finely coloured plates, 1797-1804, £3 10s. (the cost price of this splendid work was 280 thalers = £42, and two previous copies were sold at auction for 550 francs, and 16 guineas respectively), and *Fragmenta Botanica*, 138 plates, 1809, £10 15s. (the publication price of this scarce and splendid book was £30); all these works of Jacquin were published in Vienna, and are, with the one exception indicated, in folio size. J. Kraft, *Pomona Austriaca*, 2 vols., 200 finely coloured plates, Vienna, 1792-96, £1 14s.; P. Miller, *Abbildungen der Schönsten, Nützlichsten und Seltensten Pflanzen in seinem Gärtnerlexicon*, 2 vols., 301 coloured plates, Nürnberg, 1768-82, £1 1s.; J. J. Plenck, *Icones Plantarum Medicinalium*, 8 vols., 758 coloured plates, atlas folio, Vienna, 1788-1812, £3 5s. (the cost price of this valuable work unbound was £32 5s.); P. J. Redouté, *Les Liliacées, décrites par M. De Candolle, F. de La Roche, et A. Raffeneau-Delile*, 8 vols., 480 beautifully coloured plates, royal folio, Paris, 1802-16, £10 5s. (the publication price of this work was 3200 francs, unbound); and F. R. de Tussac, *Flore des Antilles*, four vols., plates, imperial folio, Paris, 1808-27, £9 (a magnificent work, published at 1050 francs, unbound).

THE BOISSIER HERBARIUM.—The publication of a *Bulletin de l'Herbier Boissier* is announced. The new journal will be edited by M. EUG. AUTRAN, the Keeper of the Herbarium at Chambésy, near Geneva, and will comprise monographs, original articles, and notes on systematic botany. It will form annually a thick octavo volume with illustrations. The publication price is 12 francs.

HARTLAND'S WHITE TRUMPET DAFFODILS.—We are sorry to notice by the Cork papers, that through means of a fire, originating in the out-offices at Ard Cairn, Cork, and spreading to the bulb-house, on the evening of the 17th, half of this rare collection of Trumpet White Daffodils has been entirely lost, some very valuable and scarce. One lot of Colleen Bawn, probably the most beautiful of all (600 bulbs), just removed from the warehouse for planting, are a great loss. It will be difficult for any collector, or for Mr. HARTLAND, to replace this valuable collection; searching in Spain and Portugal up to the present time being fruitless.

TAKING COALS TO NEWCASTLE.—A familiar saying this, which has a double meaning—in the present connection, the taking of goods to the place where the raw material is produced, and selling at a good profit. In the colony of Natal, any kind of fruit can be grown in profusion—Bananas and the Sugar-cane near the coast, Avocado Pears, Mandarin Oranges, enormous Peaches, and on to Strawberries and other small fruits in the neighbourhood of the highlands, where there are frosts and snow and rest for the plants; and yet, with all the profusion of Nature—despite it all—jams and preserved fruits are imported from England and Scotland, and from foreign countries! We have purposely included the Sugar-cane for obvious reasons. It is a thing hard to believe, but it is none the less a fact, and we might suggest to the "powers that be away out there," that there is a very fitting opportunity to hand for the development of a great industry. A more striking case of taking coal to the pit-mouth is afforded by the milk supply of Natal—the source of which is Switzerland! There is glorious pasturage in this favoured South African land—the grass grows most luxuriantly, and not being eaten off, has to be burnt yearly, so that the few browsing herds may get

a bite of the young fresh grass. There is no native milk in the colony; thousands of miles away, in the beautiful Swiss valleys, browse the cattle whose udders supply what could so easily be furnished by cattle grown themselves in equally beautifully African localities. The "moral" attached to this little narrative need not be reproduced here. Perhaps, in this instance, capital is required to start the business of milk-production; it looks very like as if it would be a paying one—and here we may leave the matter.

VEGETABLE PRODUCTS OF CALABRIA.—In a recently issued Foreign Office report on the trade and navigation of Naples, it is stated that the produce of Oranges and Lemons last year was very satisfactory both to producers and merchants, having reached the total amount of 57,000 tons, of the value of £285,000. It seems that the fruits have risen in price of late, owing principally to the great facilities granted by the railway companies, by which means a great quantity is exported to the north of Italy where the fruit is largely consumed. It seems that no direct exportation of Oranges and Lemons was effected from Calabria during 1891 save a small quantity of salted Citrons for Russia. "Although," Vice-Consul KERRICH says, "it is well to note here that of the quantity of fruit exported from Messina to foreign countries this district (Reggio, Calabria) contributed for the most part, especially in the Oranges, of which that province does not produce a great quantity. In fact, the returns for 1891 show an exportation of 97,000 boxes of fruit from this district to the port of Messina, wherein are not comprised the Mandarins. Also important is the production of dry fruit in this district, particularly of Chestnuts and Figs, the latter being considered as good as those produced at Smyrna. The quantity exported in 1891 was 3000 tons, of which 1000 tons went direct to Malta. With reference to Olive-oil, which of late years has become so much adulterated, Vice-Consul KERRICH says:—"The oils of this province are well known in England, and English houses that do business in this article would gain much by purchasing directly from these places the refined oils, and those for table use. This could be attained by sending in due time their orders here, instead of giving their commissions for branded oils to intermediate markets, where these oils are sold for 'Provenza' oils." The production of timber in the district is said to be one of considerable importance, as the restoration into woodland is greatly favoured by the law of the kingdom. Large quantities of timber are annually exported from the district to all the rest of Italy; but the exportation of the same to foreign countries, which some time ago was of some importance, has diminished, owing to the present prevailing system of using iron hoops instead of those of green Chestnut wood formerly used, and now only employed in the manufacture of casks and boxes for Oranges and Lemons.

COUNTY COUNCIL LECTURES.—Mr. R. RUFFETT, late gardener at Panshanger Park, and Mr. D. PHILLIPS, gardener at Ware Vicarage, have been selected to lecture practically on horticulture by the Hertfordshire Technical Instruction Association.

CHISWICK GARDENS.—The Chrysanthemums in the great vinery are still very interesting, filled as the building is from end to end with plants grown much more naturally than is usually the case. Disbudding has, it is true, been practised to a certain extent, but the plants are many of them regular bushes carrying from twenty to thirty blossoms, instead of the regulation two or three at the most.

CHRYSANTHEMUM SHOWS.—With the years the number of Chrysanthemum shows continues to increase beyond our power of finding space for full reports of them, and the following brief mention must suffice.

BEAUMARIS held a Chrysanthemum show on November 15 at the Town Hall. A fair number of exhibits were staged.

THE DISS HORTICULTURAL SOCIETY held a show in the Corn Hall on Tuesday, November 15. The

entries were less numerous than in the previous year, but the quality of the exhibits was good, and on the whole the show was most creditable. The chief exhibitors were Mr. Notcutt, Ipswich; Mr. Burrell, Bury St. Edmunds; Rev. F. Page Roberts, Scole; Mr. A. W. Bolton, Mr. Frere, Mr. A. Taylor, and Mr. S. L. Cocks.

WEST HARTLEPOOL held its show in the Armoury of that town, which was in every way worthy of the local Chrysanthemum society, which has done much to encourage the cultivation of the flower in the Hartlepoons. Mr. A. Taylor, of Broomhill, carried off the Silver Cup given by Alderman Pyman, J.P., in addition to the 1st prize for twenty-four blooms. The other principal prize-winners were Messrs. S. A. Taylor, Boynton, T. Smith, J. Hall, T. Pattison, Combes, and D. Reed.

YORK.—The annual show of Chrysanthemums, held under the auspices of the Ancient Society of York Florists, was opened on Wednesday, November 16, in the Fine Art Exhibition building, and the display was on a magnificent scale, and despite some falling off in the quality of the bloom, it was as good as any of its predecessors. The 1st prize, including a Silver Cup, given by the Lord Mayor of York, fell to the donor, though there was very little to choose between his lordship's group and those of Mr. J. T. Hingston, York, and Dr. Bedford Pierce, York, who were respectively 2nd and 3rd. There were also shown several groups not exceeding 80 square feet arranged for effect, Mrs. Gutch, York, taking 1st prize; Miss Steward and Mr. S. Hardcastle, both of York, took the 2nd and 3rd prizes. In the other open classes of plants, Mr. T. Smith, Beverley; Mr. W. Dickenson, York; Mr. G. Whitehead, Deighton Grove; Mr. T. Lambert, York; Mr. G. T. Theakstone, York; Mr. H. Leetham, York; Mr. W. B. Richardson, York; Mr. J. Gould, Starbeck; Sir James R. Walker, Bart., York; Mr. H. Bushell, York; and Mr. J. Key, York, were the most successful exhibitors. In the cut flower section, Sir James R. Walker was very successful; and the other exhibits which pleased the judges most were those of Alderman Harding, Darlington; Mr. H. G. Southwell, Grimsby; Mr. T. Smith, Messrs. G. Longster & Sons, Malton; Mr. C. H. Simpson, Pontefract; Mr. G. Whitehead, Mr. H. Stourton, Holme Hall, York; Miss Steward, Mr. T. Lambert, the Earl of Zetland, Mr. J. Sinclair, York; Mr. C. Dowson, Middlesbrough; Mr. T. Battensby, Blaydon-on-Tyne; Mr. J. Gould, and the Rev. G. Yeats, York. Several classes for gentlemen's gardeners or amateurs residing within a radius of 5 miles of York contained some excellent exhibits.

RUGBY.—This show was held on Tuesday, November 16, and following day, in the Town Hall, and was a great advance on that of last year. For a group, P. A. Muntz, Esq. (gr., Mr. H. Blakeway), won the 1st prize, and was closely followed by the Rev. F. D. Morice (gr., Mr. Morton). In the open class for cut flowers, eighteen incurred and eighteen Japanese, distinct, the competition among the eight exhibitors was great, and the 1st prize was awarded to the Earl of Dudley (gr., Mr. Coombes), Himley Hall; the Earl of Denbigh (gr., Mr. Harman), was 2nd; and Mr. Marriott (gr., Mr. Finch), Coventry, 3rd; two other exhibits in this class, those of Mr. W. H. Divers and Mr. Underwood, were Highly Commended. In the class for twelve incurved, S. Symington, Esq. (gr., Mr. Dunkley), was 1st; and for twelve Japanese Mr. Harman was 1st. The competition was good in the local classes, and good blooms were staged. A fine bank of Palms, Ferns, &c., kindly sent from the gardens of P. A. Muntz, Esq., M.P., made a welcome addition to the show. Some very nice baskets of Chrysanthemums were shown, and a class specially for ladies brought several very nice exhibits of sprays, wall bouquets, hats, &c. Miss Cumming and other ladies very kindly arranged a stall of fruit and flowers for the Gardeners' Orphan Fund, which was most tastefully decorated and deserved an extra prize.

HAMMERSMITH HORTICULTURAL SOCIETY.—The ninth annual exhibition took place on the 22nd

inst., and was not up to the usual average, the Chrysanthemums being poor in the gardeners' classes. The committee should offer good prizes, and make the competition more open than is at present the case, then they might expect a really creditable display. In the amateurs' division the premier prize for a group arranged for effect was secured with a good arrangement from Mr. J. Woodhouse, St. Peter's Grove. The leading position for Chinese Primulas, well-flowered plants, was taken by Mr. T. Nelson, St. Peter's Road.

BIRMINGHAM GARDENERS' ASSOCIATION.—One of the most interesting meetings of late took place recently, when some new Chrysanthemum blooms were sent by Mr. OWEN, of Maidenhead, and objects of interest by others. Two well-grown dwarf plants of the new variety, W. H. Lincoln, a grand golden-yellow Japanese, were only about 18 inches high, with good blooms on each. They were struck from cuttings in May last, the fine new Japanese variety, Colonel B. Smith, was shown. Mr. OWEN also showed his new incurved variety, The Bride, and others of promise. Messrs. POPE & SONS, nurserymen, contributed two promising new Chinese Primulas. The Society has an extensive valuable library, which is much used by the members, who can take the books home.

THE WOLVERHAMPTON HORTICULTURAL SOCIETY.—Our Birmingham correspondent informs us that the profit arising from the great horticultural and musical fête last July was £310; and the committee have voted the sum of £74 towards supplying music in the public park next summer, and the sum of £1000 from the Society's funds has been voted for the erection of a large conservatory in the centre of the park; a sub-committee has been appointed to carry out this object, and obtain plans and estimates. Other sums of money during the four years of the Society's existence have been devoted to the improvement of the Public Park, and this without touching the reserve fund, and there is a sum of £200 in hand as well. The Wolverhampton Public Park is one of the finest in the kingdom, and is kept in admirable order; and anyone with a love for rare herbaceous and other plants can spend an hour or two with great pleasure and profit with Mr. THOMAS, the Curator, in an examination of his herbaceous garden especially.

PLANT PORTRAITS.

AGAVE SALMIANA, *Bull. Soc. Tosc. di Orticoltura*, September, 1892.

CALOCHORTUS KENNEDYI, *Porter, Bot. Mag. t. 7264*.

CARLUDOVICA MICROCEPHALA, *Hook., Bot. Mag. t. 7263*.

CATTLEYA AUREA VAR. CHRYSOTOXA, *Revue Horticole*, November 1.

CHAMÆDorea STOLONIFERA, *Wendland, Bot. Mag., t. 7265*.

CYPRIPEDIUM ACAULE, *Garden*, October 29.

CYPRIPEDIUM PUBESCENS, *Garden*, October 29.

DIEFFENBACHIA PICTURATA, leaves deep green, marbled with white, *Illustration Horticole*, t. 162.

IRIS HISTRIOIDES, *Garden*, October 22.

MOOREA IRRORATA, *Rolfé, Bot. Mag., t. 7262*.

RANUNCULUS CARPATICUS, *Herbich, Bot. Mag., t. 7266*.

STYLOPHORUM LANCEOLATUM, *Tokio Botanical Magazine*, September 10.

SARCOCHILUS BORNEENSIS, *Illustration Horticole*, t. 161.

THALICTRUM WATANABEI, *Tokio Botanical Magazine*, September 10, t. ix.

HOME CORRESPONDENCE.

THE GARDENERS' BENEVOLENT INSTITUTION.—As one of the stewards of the dinner of this Society last week, I wrote to many of my horticultural and gardening friends about the country, and received several additional annual subscriptions and donations; but amongst the letters of regret from some of my friends that they could not subscribe, I

received one from Scotland which surprised me, as it contained an expression of opinion which I felt sure was founded on a very erroneous idea. My Scotch friend stated in his letter:—"The Gardeners' Benevolent Institution is useful only to English gardeners, and on that account we have never contributed to its funds; wishing you however every success." Thinking it better to get this officially contradicted, I wrote to the Secretary, and his reply is as follows:—"Your friend is greatly in error, and cannot know of the Institution or of its work. As a matter of fact, our operations extend all over the United Kingdom, and, as you will see from the enclosed list of pensioners, we have persons benefiting from our funds in England, Scotland, Ireland, and Wales. In Scotland we have three pensioners receiving £56 per annum, whilst the sum we receive from the whole of Scotland amounts to considerably less than that; so that we are actually paying away to Scotland more than we receive from it—a circumstance which, I think you will agree with me, ought not to obtain. At the present time we have an applicant seventy-six years of age, who was born and bred in Scotland, and lived half his life as a gardener there. I am persuaded that with this explanation your Scotch friend will see his way to help us with an annual subscription.—Yours faithfully (signed) GEORGE J. INGRAM, Sec.—A. Watkins, Esq." I hope this letter will be the means of disabusing the minds of any of our Scotch, Irish or Welsh horticultural friends who may have the same impressions, and lead to a largely increased annual subscription list for this very valuable Institution. A. Watkins.

CYCLAMEN SEED.—It is sometimes thought that only "new" seed will germinate. This, however, is an erroneous idea, the seed retaining its full germinating power if kept quite dry. Experiments with seed seven or more years saved have been made by the St. George's Nursery Company, Hanwell, with the result that every seed sown came up. B.

ROOT-WORK.—Your correspondent, Mr. G. F. Wilson, deserves the thanks of all persons interested in small gardens, for calling attention to the value of root-work. Where roots can be obtained, or even rough pieces of unworked timber, they may be made to serve a very useful purpose in a variety of ways. In many places, from the nature and position of the surroundings, it is impossible to induce even the hardiest of shrubs to thrive, they will gradually dwindle away; but, if a root-work be formed with taste, it may be planted in such a manner as to be both useful and beautiful. At this time of the year especially, one of the most beautiful objects is a root or rough piece of timber covered with Ivy, and I would point out that when once planted they stand for a very long period at a minimum of attention. For town planting, no doubt the green Ivies are best, but in a clear atmosphere, the variegated kinds produce an effect when planted, in such positions as is not soon forgotten. W. Fisher, Burton-on-Trent.

AUTUMN-SOWN PEAS.—Mr. Divers' remarks on p. 586 of the *Gardeners' Chronicle*, respecting the sowing of Peas in the autumn may be very good, but I fail to see what is the use of sowing Peas outside in the autumn, when they can be had quite as early by sowing selected varieties in the spring, either under glass, or on a warm early outside border. The amount of labour and care required to secure a dish of early Peas by autumn-sowing hardly pays for the trouble by the results, leaving out of the reckoning the waste of seed by having to sow it thicker in the rows than usual, in order to secure a full plant in the row. Failure of a crop is too often the result of sowing Peas in the autumn. I have found Chelsea Gem and Veitch's Selected if sown and forwarded in heat, or soaked twenty-four hours in water previous to sowing in the rows outside, and duly protected from cold winds, come into use quite as early, and produce far better results than Peas sown in the autumn. Laxton's Standard I am not acquainted with. I do not think that gardeners who have heavy soils to deal with will agree with Mr. Divers' remarks respecting the qualities of Criterion, or that Veitch's Perfection is not now required. Criterion on heavy land, if obtained true, is, I consider, one of the best second early Peas in cultivation. The flavour, when grown on heavy land, is excellent, the Peas, when boiled, of a beautiful green colour, and the plant bears pods fit for use for a long period. Veitch's Perfection, being of dwarf growth, and the Peas of excellent flavour, is certainly a valuable sort to grow, on account of its being easy of protection in the event of early

autumn frost, and I think a great many gardeners who have a daily supply of Peas to keep up, will think twice before they come to the conclusion that Perfection is not now required, especially in places where gardeners are requested to grow only wrinkled varieties. Success cannot be too highly recommended as a late Pea for heavy land. I grew it during the seasons of 1890 and 1891, and ordered it this, having proved its merits. I recommended it to be tried by my friends who had not done so. The fact of Success obtaining three marks at Chiswick, also the sample, as shown by Mr. Wythes at the Drill Hall a short time ago, and which was awarded a First-class Certificate, only go to uphold the good opinion already formed of Success as a great acquisition to our late Peas, both as to flavour and profit. *John Chinnery.*

EDINBURGH BOTANIC GARDEN.—Just now the dullest mind could not help learning a lesson of unselfishness on witnessing the lovely rock garden at the Botanic Garden; for so many of the inhabitants are trying to look bright and cheerful in what Shakespeare calls "barren winter, with its nipping cold." The winds in Edinburgh have been piercingly cold, and foggy and rainy days have been frequent, yet these little flowers grow upward to their ideal, despite untoward circumstances. I will give a list of these courageous plants:—

<i>Veronica maritima</i>	<i>Colchicum purpureum striatum</i>
" <i>spicata</i>	"
" <i>parvifolia</i>	<i>Arabis procurrens</i>
" <i>rupestris</i>	<i>Geranium aconitifolium</i>
<i>Aster grandifolius</i>	<i>Polygonum vacciniifolium</i>
" <i>longifolius</i>	<i>Polygala chamaebuxus purpurea</i>
<i>Alyssum pyrenaicum</i>	<i>Senecio pulcher</i>
" <i>saxatile</i>	<i>Gaultheria carnea</i>
<i>Helleborus seedling</i>	<i>Aubrietia græca</i>
" <i>niger</i>	<i>Dianthus deltoideus</i>
<i>Hypericum Borsieri</i>	<i>Potentilla formosa</i>
" <i>pulcher</i>	<i>Stenactis speciosa</i>
<i>Helianthemum amabile</i>	<i>Acena microphylla</i>
" <i>akifolium</i>	<i>Linaria alpina</i>
<i>Lithospermum prostratum</i>	
<i>Crocus, Asia Minor</i>	

Of these, two are British plants, viz., *Veronica maritima* and *Dianthus deltoideus*. The citizens of Edinburgh owe a debt of gratitude to the late Mr. James McNab for this almost perfect rock garden which he initiated. It was a pleasant task, also, revisiting the glass-houses. The floor of the Palm-house is being lowered, so that the top of the tubs will be level with the ground. Noticeable plants in flower in the greenhouse were *Monocheton ensiforme*, *Cineraria cruciata*, *Witsenia corymbosa*, and *Bauera rubioides*. *Vagabond.*

APPLES.—An admirable illustration of the need there is for wider knowledge concerning Apples in the rural districts was evidenced at the recent meeting of the Fruit Committee of the Royal Horticultural Society. A very estimable but certainly poor clergyman, mentioned to me in one of the south-eastern parishes of Surrey recently, that he had a considerable surplus of Apples he would like to find a market for. I advised him to send samples to the Drill Hall for naming, if possible, and then some sort of probable value in the market might also be furnished. Out of the several sorts sent, only two or three were recognisable as inferior samples of named varieties, and others were evidently natural seedling sorts. Judging by the sample sent, the top price obtained for such fruit when got to market would not exceed 2s. per bushel. No wonder it is found needful to advise the complete revolutionising of much of what is called fruit culture in the rural districts. *A. D.*

NEW CULINARY PEAS.—In August last, when at the great annual floral *fête* at Shrewsbury, I took the opportunity of going on to Wem, about a dozen miles further, to see Mr. Eckford's new dwarf and other Peas of which I had heard so much, and observed at various exhibitions. Starting with *Ne Plus Ultra* as one of the parents, with a view to obtaining dwarf-growing earlier kinds, possessing the flavour of that fine variety, with its blunt-ended pods, successive crossings and selections have resulted in some very superior varieties, which well deserve notice. Another point that has been regarded at Wem as a prominent one to be attained is, a dark green-coloured pod of good size, and well filled with dark green seeds. A variety named *Superabundant* has already been sent out, but as yet is little known. It grows about 2½ feet high, is an abundant cropper, with good-sized, well-filled pods, and rich-flavoured, and of a good green colour. *Censor* is from 2½ to 3 feet high, with robust haulm, a good cropper and first-class, and received three marks at the Royal Horticultural Society's

gardens. *Colossus* grows 4 feet high, with extra large pods, which are well filled. This will be a valued exhibition Pea also, as the pods are extra large. *Ambassador* will also be found a fine exhibition Pea, growing 6 feet high, with large, handsome, well-filled pods, and their flavour all that is wanted. *Critic* grows 4 feet high, a very fine Pea indeed—large, well-filled pods of good colour, delicious flavour, and another very first-rate exhibition variety. *Copious* has a slightly-curved pod, a great cropper, and a fine variety, growing about 2½ feet high. A variety named *Wem*, of medium height, has broad, large, well-filled pods, blunt at the end, and of *Ne Plus Ultra* type in flavour. *Eckford's Gem*, 3½ to 4 feet high, is a grand variety; pods of medium length, broad, blunt-ended, and well filled. This is an early *Ne Plus Ultra*, and will be popular. Of older sorts raised at Wem, *Shropshire Hero*, 2½ to 3 feet, a very first-rate Pea and excellent cropper—is a market gardener's and everybody's Pea, with well-filled, good-sized pods, and of good flavour. *Eckford's Fame* and *Heroine* are also very fine varieties. A visit to Wem teaches a lesson as to sowing and



FIG. 101.—HYACINTH GROWING IN A BALL OF MOSS, ETC.

growing. Mr. Eckford grows probably 2 acres of Peas each year of his new sorts and seedlings, for the purpose of keeping his stocks quite true, by chasing out any "rogues," i.e., plants which are not of the true character. A great deal of his personal attention is devoted to this object, and when the character of the variety is fixed, bulks of seed are sent away to be grown by the acre in various parts of the country, and personal visits are made by Mr. Eckford during the podding season to ensure any further weeding out of "rogues," should there be any. At home the Peas are planted rather than sown very thinly in the rows, so as to ensure strong robust branching plants. In fact, bushy plants with from eight to fourteen branches, were abundant, the plants from 15 to 18 inches apart, and a good boiling of Peas could be gathered from one plant. Plenty of bush-plants of *Superabundant* and other kinds were to be seen loaded with pods, some with a stick or two to keep them upright, whilst others took their chance, for it is no joke to attempt sticking an acre or two of Peas. It however proves one thing, that thick sowings do not bring out the true habit of the variety in growth and productiveness, and when new varieties are issued at high prices and in small quantities, economy in sowing is requisite. At Wem the ground is made tolerably solid for sowing, and

the soil trodden after sowing; this soil then is a good loam, and suits Peas and Potatoes well, and, in fact, almost everything else. *D.*

ÆSCULUS.—On p. 586, Mr. J. D. Webster describes a Horse-Chestnut at Skene House, which, he writes, as occupying, with its trailing lower limbs, the space of 90 by 70 feet. In all vegetable life, as we see it in England, there is no single tree more impressive than a wide-spreading Horse-Chestnut like the one Mr. Webster describes. Equally large Beeches growing in the same way, as at Trentham, do not possess the same imposing effect. This was first forced on my mind by a Horse-Chestnut which uplifts a dense knoll (mass) of verdure on the lawn in front of Euston Rectory, near Thetford, and, like its congener at Skene, hides, under its lowest branches, a big circuit of ground. At every season of the year the tree is beautiful, especially in spring, when it covers itself all over with the pink-white of an orchard. As Mr. Webster points out, the way the buds open to the call of spring, and their impervious covering against "nipping winter," are very interesting to study. On the other side of the road to the rectory is the translucent little river Thet, flowing gently past the wall of the Duke of Grafton's kitchen garden, where Mr. Low, the author of an excellent book on *Table Decoration*, presides. As Euston Park is essentially a sporting estate, and the house and stables together form an enormous mass of building, there is not much opportunity for landscape gardening. The flat nature of the lawn and the character of the house are, however, adapted for large flower gardens. There are two of these, which in naturalness of design and in the blending of the colours, would hold their own with any of the famous flower gardens. *Vagabond.*

NEW ALPINES.—Under this head on page 614, are one or two names which I read with surprise, as the plants are well-known, and have long been in general cultivation in English gardens. One of these is *Campanula lactiflora* (M. Bieb. Syn. C. *celtidifolia*, E. Boissier). This was cultivated by Loddiges at Hackney in 1815, and figured in the *Botanical Magazine* of 1818, tab. 1973. It had been figured a year or two earlier in *Edwards's Botanical Register*, tab. 241. I have known it as a garden plant for about twenty years; and though effective as a back-row border flower, I consider it rather a coarse plant, as it grows more than 8 feet high here, making densely branching masses of flowering stalks. The colour ranges from nearly white to dark blue, and it produces self-sown seedlings so freely that visitors to my garden can always carry away as many as they please. It has very often been mentioned in the gardening journals, some writers venturing to assert that the two names mentioned above belong to different plants, though all the shades of colour may be raised from the seed of one. *Chrysanthemum* (*Pyrethrum*) *cinerariæfolium* is another plant well-known here in cultivation. I received it, when first I collected plants, as *P. Willemettii*, a name I never could verify, but it has long been in the Kew herbaceous garden under its right name. Mr. W. Thompson, of Ipswich, offers seed of it as "The insect-powder plant," though I have never seen any record of its cultivation for this purpose for which the flowers of *P. roseum* are generally said to be used. *C. Wolley Dod, Edge Hall, Malpas.*

HORTICULTURAL INSTRUCTION.—The latter part of your criticism on my suggested need for horticultural text-books (p. 621) is exactly what I do mean. All who have asked for such books are either young gardeners, who want to obtain wider knowledge on horticulture than they can gather in an ordinary garden, or persons of the amateur-gardener persuasion, who, having gardens, also want to obtain wider information than they possess. There is no suggestion that books should be employed for cramming only those who enquire for them, who really want fully to understand gardening, and are grateful for information derived from what source it can be obtained. What person is there interested in Vine culture who does not rise from a perusal of Mr. Barron's book on the Vine instructed; that is a book, for instance, were it cheaper, one would like to be able to commend to young gardeners and amateurs. *A. D.*

HYACINTHS IN MOSS.

THE accompanying cut (fig. 101) represents a Hyacinth growing in a ball of moss. In this case a Beet-root had been inserted in the lower part of the

ball, with the head downwards, the leaves of which are to be seen curling up round the ball. The moss merely requires to be kept damp, and the system is a pleasing change to growing them in water.

LÆLIO-CATTLEYA EXONIENSIS.

In Lord Rothschild's gardens at Tring Park, is to be seen a six-flowered spike in one of the best forms of this favourite hybrid. It is one of Messrs. Veitch's earliest hybrids, and few, if any, of the later acquisitions have surpassed it in beauty.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 15.—Present: R. McLachlan, Esq., F.R.S., in the chair; and Mr. Morris, Dr. Miller, Dr. Russell, Rev. W. Wilks, Professor Green, Professor Oliver, Dr. Bonavia, Mr. Wilson, Professor Church, and Rev. G. Henslow, Hon. Sec.

Injury to Plants by Fog.—In accordance with the proposal of the Scientific Committee made at the last meeting, the Council of the Royal Horticultural Society has passed the following resolutions in reference to the investigation of the nature and injuries to plants by fogs:—

1. That the Royal Horticultural Society, through its Scientific Committee, having devoted considerable attention to the effects of London fogs on cultivated plants, is of opinion that the increasing prevalence of these fogs is causing great inconvenience and loss to horticultural interests within the metropolitan area; and as these interests are associated with one of the largest and most important enterprises of plant cultivation under glass carried on in any part of the world, it is a matter of the greatest importance that the circumstances connected with the chemical compositions of these fogs, their origin and extent, the amount of sulphurous acid contained in them, as well as the diminution of light caused by them, should be carefully and exhaustively investigated.

2. This Society, being also of opinion that London fogs are detrimental to public health, and calculated to render London an undesirable place of residence for many months of the year, as they interfere with trade and public business, and cause serious loss to the community generally, invites the co-operation and support of kindred societies and of all organisations interested in the subject, in a representation to the London County Council to institute an inquiry into the causes and circumstances of these fogs, with the view of reducing their injurious character, or if possible removing altogether the causes which have led up to them.

On the suggestion of the Scientific Committee, the Council agreed to set apart one of the propagating pits at the Chiswick Gardens, for the purpose of carrying out experiments during the current winter to mitigate the effects of fogs on cultivated plants. It was also agreed to inform the Chiswick Board of this arrangement, and to request the Superintendent to give what assistance he could in carrying out the suggestions of the officers placed in charge of the experiments.

Dr. Russell stated that he thought it would be of great importance with regard to the fog question if a comparative and simultaneous series of determinations of the amount of light could be carried out at once, both in the City and outside London, in order to thus obtain a more exact idea of the enormous loss of light experienced in the City during the winter months. With the object of familiarising himself with the method adopted by the Manchester Committee, he was experimenting with their process.

Garden Labels.—Mr. Morris remarked on the difficulty of finding any material suitable for labels. They had tried a great variety at Kew, but the best in being most durable was a strip of lead with the name stamped upon it. He exhibited a sample from the garden of A. Cushey, Esq., Pains Hill Park, Cobham, dated 1774, on which the name "White Magdalen Peach" appeared to be as sharply indented as at first. It is said, however, that the lead of the present day, in consequence of its being purer through desilverisation, would probably not last so long.

Lilium auratum.—Mr. Wilson mentioned that a

single bulb of this plant in his garden had thrown up eight flowering stems. When dug up it was found to have developed seven good well-formed and large bulbs. It grew in a good vegetable and loamy soil.

Wellingtonia with Fungi.—Specimens of fallen leaves and shoots of this tree were sent from the gardens, Orton Hall, Peterborough, with numerous small white agarics growing upon them. They proved to be *Mycena hyemalis*, Osbeck.

Alder Leaf Perforated.—Mr. Wilks showed a dead leaf of Alder very symmetrically perforated with two series of holes. It was most probably due to a sudden chill on the expansion of the buds in spring. A similar occurrence is not infrequent in Horse Chestnut and other leaves from such a cause.

REIGATE AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 11.—The fourth exhibition of this society was held in the Public Hall, Reigate, on the above date. This particular society receives, and well deserves, the support of the residents of the district. The chief end of a Chrysanthemum society is usually supposed to consist in the providing of prizes for growers of Chrysanthemums; but this particular society, though not neglecting the object for which it was established, does much more. Last year the amount distributed in prize money was £38 14s., and the managers gave out of the proceeds of the year thirty guineas to the Asylum at St. Anne's, Red Hill, ten guineas to the Gardeners' Royal Benevolent Institution, and ten pounds to the Gardeners' Orphan Fund. The exhibition was exceedingly good, although somewhat cramped, owing to the small size of the room. It was necessary to arrange some of the exhibits in an underground room, owing to want of space in the large hall.

The groups of plants were very good indeed, the quality of the blooms on them being of great merit. For one occupying a space of 50 square feet, Mr. J. Brown, gr. to Mrs. Waterlow, Great Doods, was 1st, the quality of the plants excellent, the foliage being green and healthy, and the plants of dwarf habit. The Japanese varieties were principally used. Mr. W. Bailey, gr. to W. L. Barclay, Esq., The Briars, Reigate, was a good 2nd, three other groups being put in competition. Mr. Brown also obtained the 1st prize for four admirably-grown specimens, without any training other than was required to hold the shoots in position.

For four standard-trained plants, Mr. W. Hamilton, gr. to Mrs. Grice, Beechwoods, well deserved the 1st prize awarded to him, for these were admirably-grown plants.

The specimen plants were not generally good, but Mr. W. Peters, gr. to W. Finch, Esq., Duncroft, deserves notice for the excellent group of plants with which he won the 1st prize for a group occupying 30 feet. The quality of the flowers was excellent.

Cut blooms were numerous, and of good quality. The competition for the 1st place in the class for thirty distinct varieties of Japanese being very keen between Mr. C. Ritchings, gr. to Dr. Frankland, The Yews, Reigate Hill, and Mr. Salter, gr. to T. B. Haywood, Esq., Woodhatch, the former winning by only one point.

Mr. Geo. Ormiston, gr. to J. Colman, Esq., Gattton Park, Reigate, won 1st prize with twenty-four Japanese blooms, a nice even lot; and for twelve, Mr. E. Tickner, gr. to J. Watney, Esq., Shermanbury, Reigate, easily won 1st with capital blooms. He had a fine bloom of John Dyer, reddish-brown on a gold ground; W. H. Lincoln was also very fine.

Mr. C. Ritchings was awarded 1st prize for six capital blooms of Avalanche, and also for six remarkably fine blooms of Golden Empress, to one of which the 1st prize was awarded, as being the best bloom in the exhibition.

Mr. Salter won 1st prizes for twelve reflexed blooms, twelve large-flowered Anemones, and for twelve bunches of Pompon varieties, the quality throughout being very good.

The incurved section was not quite up to the usual quality, as a rule, and this might have been observed in the groups, which contained a score of Japanese varieties for one of the incurved section. Mr. Ritchings won the 1st prize for twenty-four incurved blooms, with an even lot of flowers.

Good collections of table plants and Chinese Primulas were exhibited—better, in fact, than one usually sees at local exhibitions.

Table decorations also made a good feature, and it is a pity that there was not a better competition for the handsome prizes offered by the President of the Society, J. Colman, Esq., of Gattton.

The Certificates of the National Chrysanthemum Society were awarded to Mr. Brown and Mr. Peters for their groups of plants.

HITCHIN.

NOVEMBER 11.—Even at this date, the lateness of the season rendered the competition less than usual in the classes for incurved varieties. The show however, taken as a whole, was a good one.

In the cut bloom classes, Mr. E. Beckett, gr. to H. H. Gibbs, Esq., Aldenham, Elstree, was the most successful exhibitor, the fact of this well-known exhibitor being in good form giving some idea of the show. Mr. Beckett was 1st for twenty-four Japanese distinct, with very even, fresh and fine blooms. Mr. Beckett was likewise 1st for eighteen incurved finished blooms, and he was 1st for six blooms, one var., incurved, having grand examples of Princess of Wales. Mr. Kipling, gr. to Mrs. Osgood, Knebworth, was 2nd for twenty-four Japanese, coming well up to Mr. Beckett, except in size. Mr. Hartless, gr. to T. F. Harrison, Esq., Kingswolden, Bury, being in the same position with incurved varieties.

The competition for six of any kind except white (Japanese vars.) was very keen, Mr. E. Cotton, gr. to A. W. Lines, Esq., Hitchin, being 1st, with splendid blooms of Sunflower; Mr. Kipling 2nd, with very superior examples of Boule d'Or; the 3rd prize going to Mr. W. G. P. Clark, Assistant-Sec., and an amateur, who, with some fine blooms, succeeded in beating several gardeners.

For six blooms, any white variety of Japanese, Mr. Kipling was 1st, with splendid blooms of Avalanche, pure in colour, and very fresh; Mr. Hartless 2nd, with the same variety; and Mr. Beckett 3rd, with fine blooms of Florence Percy.

The amateurs showed strongly as usual, Mr. W. P. G. Clark being the most successful for eighteen vars. Japanese and incurved equal. He was 1st with fine flowers, taking the National Chrysanthemum Society's Silver Medal and a volume of *Amateur Gardening* for the best bloom in the section with Sunflower. Another successful exhibitor in these classes was Mr. G. Saunders.

The competition for groups was not very keen; two very good ones were staged, these came from Mr. Ormiston, gr. to S. Lucas, Esq., and Mr. Upchurch, gr. to F. Lucas, Esq., who were respectively 1st and 2nd.

Mr. Springham, gr. to J. H. Tuke, Esq., was easily 1st, for six trained specimens, showing plants large enough for any purpose, bearing a profuse number of finely-developed flowers, and not too formally trained.

Two other good classes were those respectively for twelve Japanese and twelve incurved blooms, in which Mr. E. Cotton took both 1st prizes.

Mr. Beckett was awarded the N.C.S. Certificate for the best stand of cut blooms, and Mr. Springham received the same recognition for the best six plants.

In the ladies' classes for table decorations, there was a strong competition (unusually so), Miss Alice M. Barker, Benslow, being 1st, with a simple arrangement of smallish blooms of Sunflower, with green and bronze foliage in addition.

ECCLES AND PATRICROFT, PENDLETON, CHRYSANTHEMUM.

NOVEMBER 11, 12.—The sixth annual exhibition of this flourishing Society was held in the new Drill Hall, Patricroft, on the above date. The progress of the Society has been a remarkable one, and it has met with much encouragement in the district. The shows were formerly held in the Town Hall, but the insufficient space at command in that building caused them to be removed to the more spacious Drill Hall. The show was opened by W. Lockett Agnew, Esq., J.P., who, in a well-chosen speech, spoke of the good the Society was doing in the district in fostering a love of gardening. Considering the character of the present season, the quality of the cut flowers shown was good, although, as else-

where, a falling off was observable amongst the incurred class. The entries were numerous, and the competition very keen. Some few good groups were observed, consisting wholly of Chrysanthemums, or of mixed stove and greenhouse flowering plants. Table plants were also well shown. The successful exhibitor for these and the group of miscellaneous was Mr. E. Kin, gr. to Mrs. Agnew, Eccles; and the 1st for the Chrysanthemum group was Mr. Lovell. Mr. Watts, of Wavertree, Liverpool, was 1st for the leading collection of cut flowers. Bouquets and a variety of floral devices were well shown.

Mr. Upjohn, gr., Worsley, contributed, not for competition, a good group of foliage and flowering plants, and a basketful of Grapes. The Drill Hall was decorated with specimens from gentlemen living in the locality. The affair passed off in a most satisfactory manner, which, in a great measure, was due to the admirable arrangements of the secretary and the committee.

WIMBLEDON CHRYSANTHEMUM SHOW.

NOVEMBER 15, 16.—It was unanimously admitted that this was the best exhibition yet held by the society. Groups were an especial feature. The arrangements being well carried out by the Hon. Secretaries.

For a group of Chrysanthemums, arranged in a semi-circle, 10 feet in diameter, the 1st prize, a Silver Cup value 5 guineas, was awarded to Mr. R. Bradford, gr. to W. Hope Hall, Esq.; 2nd, Messrs. J. & A. Bateman, Willow Nursery, Merton. Group, 8½ feet in diameter, 1st, Mr. C. Day, gr. to H. C. Ford, Esq., St. Brindans. Specimen plants were successfully shown by Mr. J. Portbury, gr. to W. N. Froy, Esq., Ripon House, Putney Heath, and Mr. J. Bentley, gr. to Lady Gabriel, Edgecomb Hall, Wimbledon Park.

Much interest centred in the competition for the Challenge Cup, value 15 guineas, offered by W. B. Faulkner, Esq., with £5 added to the 1st prize by the society, for forty-eight blooms, twenty-four incurred, and twenty-four Japanese. It was won, after a close run, by Mr. W. Mease, gr. to A. Tate, Esq., Downside, Leatherhead, with a grand lot of flowers. As this exhibitor has now won it three times in succession, the Cup becomes his property. Mr. Mease took 1st honours in several other classes, 2nd, Mr. G. Carpenter, gr. to Major Coles Brown, Broad Oaks, Byfleet.

Twelve incurred, 1st, with a fine lot, Dr. Walker, Lingfield Road, Wimbledon, another exhibitor who had a repetition of successes in other classes; 2nd, W. B. Faulkner, Esq., Fairholm. Other winning competitors in the cut bloom classes were Mr. A. Skeggs, gr. to Mrs. Donn, Copse Hill; Mr. J. Portbury, gr. to W. N. Froy, Esq.; E. Lindfield, Esq., East Finchley, &c. The prizes for the premier blooms, Japanese Vivand Morel, and incurred Lord Alcester, were won by Mr. Mease.

Group of miscellaneous plants, arranged for effect in a space 40 feet super.—1st, Mr. J. Law, gr. to R. S. Dean, Esq., The Priory; 2nd, Mr. R. Bradford, gr. to W. Hope Hall, Esq.

Group, 30 feet super.—1st, Mr. T. Chandler, gr. to the Rev. Canon Haygarth, The Vicarage.

Flowering and foliage plants, arranged in baskets 3 feet in diameter, made an effective display. 1st, Mr. F. Ware, gr. to L. Walters, Esq.; 2nd, Mr. J. Law, gr. to R. S. Dean, Esq.

Primulas (double and single) were well-shown by Mr. A. Newell, gr. to Sir E. Saunders, Fair Lawn; Mr. W. Mease, Messrs. J. & A. Bateman, and Mr. T. Chandler.

Table plants made an effective background to the Chrysanthemum blooms, the most successful exhibitors being Mr. T. McGregor, gr. to the Dowager Lady Hay, North House, Putney Hill, who had well-coloured Crotons; and Mr. W. Mease.

Fruits.—Hardy fruit was represented by good collections of Apples and Pears, and the leading competitors in the Grape classes were Mr. A. Alderman, gr. to C. Czarnikow, Esq., Effingham Hill House, Dorking; Mr. C. Griffin, Combe Bank, Kingston; Mr. J. Selden, gr. to Sir Guy Campbell, Bart, Coombe Cottage; Mr. A. Methven, gr. to W. Keiller, Esq., &c.

Vegetables made an interesting exhibit. Mr. G. Cole, gr. to W. H. Peat, Esq., South Hayes; and Mr. Thornton, gr. to T. E. Crocker, Esq., showing well in this department.

The non-competitive exhibits were numerous and noteworthy. Amongst the principal may be mentioned a magnificent bank of flowering and foliage plants tastefully disposed, from Messrs. D. S.

Thomson & Sons, The Nurseries, Wimbledon; group of foliage plants, &c., from Messrs. E. D. Shuttleworth & Co., Peckham Rye; and effective groups of Chrysanthemums from Mr. D. Sheahan, Hartfield Road Nursery, Mr. J. Nash, Belvedere Nursery, and Messrs. J. and A. Bateman, Willow Nursery, Merton.

Dr. Walker, Wimbledon, exhibited samples of the Walker Chrysanthemum cup and tube, a useful invention, which recently received a Certificate of Merit at the Crystal Palace.

KENT COUNTY SHOW OF FARM FRUIT.

NOVEMBER 15, 16.—In the Corn Exchange, Maidstone, this Society held its third show on the above dates, and judging by the improvement discernible both in quality and the number of the exhibits, the show as a whole should be regarded as the successful outcome of an effort to encourage high-class fruit growing.

There were twelve classes, all of which were well filled; in the four quarter-sieves of dessert Apples class there were thirteen entries of very good fruit. For the best collection, not to exceed twenty-four dishes, open to landowners (or their gardeners), farmers, market gardeners, and nurserymen, Mr. Woodward, Barham Court, took the lead with very fine fruits; and he was closely followed by Mr. Thomas, Rodmersham, who was, by the way, very strong in Pears.

For nine dishes of Apples and three of Pears, farm-grown, Mrs. Fremlin Teston, was 1st; Mr. Thomas, 2nd; and H. L. C. Brasse, Esq., Preston Hall, was 3rd.

For one sieve of dessert Apples, Mr. F. Smith, Loddington, was an easy 1st, showing fine bright-looking Cox's Orange Pippin; being followed by Mr. Thomas and Mr. W. M. Fearon, Mereworth.

In kitchen varieties, four quarter-sieves, Mr. Chambers, Mereworth, was 1st, and Mr. Smith 2nd.

In the class of four quarter-sieves of kitchen Apples, Mr. A. Killick was 1st; 2nd and 3rd falling to Mr. H. Leney, Farleigh, and Mr. Fearon, Mereworth. Two quarter-sieves, 1st, Mr. G. Warde, West Farleigh; 2nd, Mr. Goodwin.

Pears were well shown by H. L. C. Brasse, Esq.; Mr. Sharman, Mereworth; and Major Best.

Dried fruits, jams, bottled fruits, &c., were well represented.

LIVERPOOL.

NOVEMBER 15, 16.—Visitors to this centre of Chrysanthemum culture expect to see a fine autumn exhibition, but it is doubtful if one so good has been seen there in any previous year. There was a great increase in the number of entries, and the quality was quite up to the average; indeed, so fine were the Japanese cut blooms, that it would be difficult to have them finer.

Fruit made a good display, and the hall was rendered bright by the masses of gay colours presented by the stove and greenhouse plants, groups of Chrysanthemums, &c.

Cut blooms.—Handsome prizes were offered in the several classes, which evoked great competition.

For forty-eight, half to be incurred, and half Japanese varieties, in not less than thirty-six varieties, there were no fewer than eight entries for the 1st prize of £10. Mr. D. Forbes, gr. to A. Holt, Esq., Crofton, Aigburth, was easily 1st, with heavy fresh blooms; Mr. G. Burden, gr. to G. Cockburn, Esq., Lingdale Lodge, Birkenhead, was 2nd; and Mr. Jellicoe, gr. to F. H. Gossage, Esq., Camp Hill, Woolton, was 3rd.

Messrs. R. P. Ker & Sons, seedsmen, Liverpool, offered a challenge cup, value ten guineas, along with a cash prize of ten guineas, for twelve incurred, twelve Japanese, and twelve reflexed, for which there were six entries. Mr. Jellicoe was 1st by a narrow margin; and Mr. Heaney, gr. to H. G. Schintz, Mossley Hill, was a close 2nd. These two stands possessed much merit.

There were fifteen entries for Japanese varieties in the class for eighteen, and here Mr. Jellicoe won again with an even lot of massive flowers; Mr. Foster, gr. to J. Brancher, Esq., Green Bank, Wavertree, being a close 2nd.

Mr. J. Williams, gr. to C. J. Proctor, Esq., Boscobel, Birkenhead, was 1st, for twelve blooms, with a grand stand; and Mr. Jellicoe was 2nd. There were fourteen entries.

Another class for twelve was well filled.

Incurred varieties generally were very fine, Mr. S. Healey, gr. to Colonel Wilson, Hillside, Allerton,

taking 1st for eighteen; and Mr. Forbes was 2nd; but in the class for twelve he was 1st, and Mr. S. Elsworth, gr. to R. Gladstone, Esq., Court Hey, was 2nd. Mr. Howard, gr. to A. S. Mather, Esq., Beechwood, Woolton, was 1st in a second class for twelve distinct, with a meritorious lot of flowers. Mr. J. Broome, gr. to T. Harrison, Esq., Belle Vale Hall, Gateacre, took the 1st prize with substantial blooms of the best varieties; Mr. Wilson, gr. to H. Cunningham, Esq., Gorse Cop, Gateacre, was 2nd. Messrs. Foster and Jellicoe secured the leading honours for six reflexed varieties in the order of their names.

Pompons showed improvement on previous years: Mr. Sirees, gr. to G. Smith, Esq., M.P., Carlton, Princes Park, was 1st for twelve.

The groups of Chrysanthemum were fairly good, 1st, Mr. Winkworth, gr. to R. Brocklebank, Esq., Childwall Hall; 2nd, Mr. E. Bennett, gr. to J. E. Gordon, Esq., Dadlow House, Wavertree, who was also 1st for the best six untrained specimens.

Mr. J. Harrison, gr. to Mr. W. G. Bateson, Elmhurst, Aigburth, was 1st for six Pompons, shown in good style.

Mr. Jellicoe contributed stove and greenhouse plants in fine condition. Orchids formed a distinct feature of the show. Mr. Bounds, gr. to A. L. Jones, Esq., Oaklands, Aigburth, was 1st, with some well-flowered *Ocimum crispum*, O. Forbesii, and O. tigrinum; Mr. C. Osborne, gr. to H. J. Robinson, Esq., 2nd.

Fruit was well shown by Mr. Bennett, gr. to Hon. C. H. Wynne, Rag. Corwen; Mr. Elsworth, Mr. G. Middleton (gr., Rainford Hall), Mr. Sirees, Mr. Broome, Mr. Hannage (gr., Hooton Hall), and others.

LEWES CHRYSANTHEMUM.

NOVEMBER 16, 17.—This show was held in the Corn Exchange on the above date, and proved to be the finest ever held in the old county town for Sussex. The quality of the blooms was very high, and in the classes for twenty-four incurred, and also for twenty-four Japanese, it was exceedingly difficult to adjudicate. All the classes were strongly contested, some of them having as many as twenty competitors.

For a group of Chrysanthemums, not exceeding a space of 60 square feet, Mr. G. Carvill, School Hill, was 1st, with a well-arranged collection. This group was banked up around the outside with moss, and made a much more characteristic finish than when Palms, &c., are used. 2nd, Mr. J. Edwards; 3rd, Mr. E. Fannell; 4th (extra), Mr. Bedford.

Cut Flowers (open).—For twenty-four incurred, distinct, Mr. J. Wallis, gr. to J. Mews, Esq., was 1st; Mr. Sayers, gr. to Mrs. Cook, and Mr. Jupp, gr. to G. Boulton, Esq., making a good 2nd and 3rd respectively.

For twenty-four Japanese, distinct, Mr. Wallis was again a good 1st; 2nd, Mr. Sayers; 3rd, Mr. J. Blake; 4th, Mr. Helman.

Twelve incurred.—1st, Mr. Tourle; 2nd, Mr. Emery.

Twelve Japanese.—1st, Mr. Voss, with a magnificent lot of bloom; 2nd, Mr. Emery; 3rd, Mr. A. F. Grace.

Six incurred.—1st, Mr. Tourle; 2nd, Mr. Emery; 3rd, Mr. Collins.

Six Japanese.—1st, Mr. Voss; 2nd, Mr. Tourle; 3rd, Mr. Emery.

Six incurred, any variety.—1st, Mr. Baker; 2nd, Mr. Jupp; 3rd, Mr. Sayers.

Six Japanese, any variety.—1st, Mr. Voss; 2nd, Mr. Emery; 3rd, Mr. Tourle.

Plants (open).—Four pyramids.—1st, Mr. Smith, gr. to C. R. Kemp, Esq.; who was also 1st for four dwarf-trained, and for four standards.

Mr. E. Stidworthy was 1st in both classes for six untrained Pompons, and for twelve untrained large-flowering varieties.

Fruit.—This was extensively shown, and of good quality.

For three bunches of Grapes, Mr. Stidworthy, Mr. Gore, and Mr. Smith, took honours in the order given.

Three dishes of dessert Apples brought about twenty competitors.—1st, Mr. G. Helman, gr. to Viscount Gage; 2nd, Mr. W. Manton; 3rd, Mr. J. Hopkins, gr. to Mrs. Thornton.

Three dishes of culinary Apples.—1st, Mr. Blake; 2nd, Mr. Hopkins; 3rd, Mr. Geale; 4th (extra), Mr. G. Helman.

The best tray of vegetables.—1st, Mr. Collins; 2nd, Mr. Watkins; 3rd, Mr. Manton; 4th (extra), Mr. Geale; highly commended, Mr. Helman. This was a very strongly contested class.

Primulas and Cyclamen were also well shown, and much competition resulted for the numerous special prizes offered by gentlemen and leading seedsmen.

SCOTTISH HORTICULTURAL ASSOCIATION CHRYSANTHEMUM EXHIBITION.

NOVEMBER 17.—In the early morning of Thursday, the 17th inst., there was great enthusiasm in the Waverley Market among the promoters of the above Society and the exhibitors who were to take part in the floral contest; fog was dense, and frost somewhat severe, but no one seemed daunted, or seemed to feel that there was any chance of failure, and by 10 o'clock the sun broke through the mist, which gave bright hopes to the busy throng engaged with the exhibition. The entries this season were 849, against 812 last year, and 2176 Chrysanthemum blooms were tabled in prime condition. The Chrysanthemums, of course, were the leading feature of the show, though other objects of interest were in abundance. The City of Edinburgh Cup, value £20, was won by Mr. Parker, gr. to J. Corbett, Esq., Impney, Droitwich, with forty-eight blooms of Japanese Chrysanthemums, which, for uniform excellence, could hardly be surpassed. This is the third time that this clever cultivator has brought his exhibits across the border to meet Scotchmen in friendly rivalry, and who were vanquished by him on this occasion. Mr. McHattie, gr., Newbattle Abbey, who has been the leading prizewinner for some years, having retired for a season for unavoidable reasons, and thus left the field still more open to Mr. Parker. Among the best of the blooms from Impney were Boule d'Or, W. Tricker, Mr. A. H. Neve, Vivand Morel, Avalanche (remarkably fine), Florence Davis, E. Molyneux (we have seen this finer from Mr. Parker), Lady E. Lawrence, W. W. Cole, R. Brocklebank, Alberic, Etoile de Lyon, Mrs. E. Beckett, Mrs. Laing, W. H. Lincoln, of extra merit; Gloriosum, Stanstead White, Mrs. F. Jameson, Madame C. Audiguier, Stanstead Prize, Sunflower, Jeanne Delaux, J. Delaney, Geo. Atkinson. The 2nd prize lot came from Mr. J. S. Carruthers, also a remarkably fine exhibit of large and handsome blooms—his Sunflower, Vivand Morel, Pelican, Bouquet de Dame, Mrs. J. Thomson, Boule d'Or, Condor, Mrs. E. W. Clarke, were remarkably fine; the 3rd prize went to Mr. J. Bessant, who had fine Florence Davis, Stanstead White, Boule d'Or, Edwin Molyneux, Sunflower, Vivand Morel, Elaine, which were remarked for their fine form. A stand of blooms sent by Mr. P. Blair, gr. at Trentham, was placed 5th, which experts said should have been 3rd, and a mistake was supposed to have been made. The winner of the Scottish Challenge Cup (open to Scottish gardeners and amateurs only) for thirty-six blooms, eighteen incurved and eighteen Japanese, distinct varieties, was taken by Mr. Watt, Black House, Killmorlie. Among his best Japanese were Vivand Morel, Bouquet de Dame, Sunflower, W. H. Lincoln, and Boule d'Or; the incurved varieties were not so fine, John Doughty, Jeanne d'Arc, Lord Alcester, Empress of India, Golden Empress, and Lady Hardinge, being some of the best. Mr. D. Nicoll, gr., Rossie, Forgedenny, was 2nd.

In the class for twenty-four blooms, comprising twelve Japanese and twelve incurved varieties, Mr. Parker again came grandly to the front. In his Japanese lot were Boule d'Or, Florence Davis, E. Molyneux, W. H. Lincoln, Vivand Morel, in very fine form. The incurved varieties were perfect models, and outdistanced all others; J. Lambert, extra fine; Golden Empress, Queen of England, Mr. Heale, Lord Alcester, Princess of Wales, Princess of Teck, Mrs. Coleman, and Mrs. Davis, being the more remarkable ones. Mr. Blair was a good 2nd.

For twenty-four Japanese, Mr. Raskin, Duntocher, was 1st, with a fine exhibit. Bouquet de Dame was of much excellence; Elaine, Sunflower, Mons. Bernard, Mrs. E. W. Clarke, and W. H. Lincoln, were among the best; 2nd place went to Mr. Ramsay, Corstorphine, for fine blooms.

For twenty-four incurved, not less than twelve varieties, brought some fine flowers for competition, Mr. Parker 1st, Mr. Shoemith 2nd.

For the Messrs. Carter & Co.'s, seedsmen, prize, for twelve Japanese varieties, the 1st prize went to Mr. Perie, Selkirk; 2nd prize to Mr. Ruskin.

The other dozen and half classes were well represented, and in which were some of the finest flowers in the show.

Bouquets of Chrysanthemums were attractive, and some of them very handsome.

Messrs. Laird took the lead in the Nurserymen's class with forty-eight fine blooms distinct.

In the groups of plants arranged on the floor, Mr. Hood, gr., Oswald Road, was 1st; and Mr. Petrie, gr., Murrayfield, was 2nd. Their exhibits were circular in form, and did much to break up the space in the large hall, which lacked the usual tables of plants.

Messrs. Methven & Sons made a fine display with plants arranged in triangular form, and a belt of flowering plants placed as an edging were effective. Among their best flowers in their Chrysanthemum group were W. H. Lincoln, Golden Beverley, and Mr. W. Holmes. This was one of the best exhibits of the kind ever seen in Waverley Market.

Among novelties was a bride (in wax) fully attired in bridal costume, with bouquet in hand, and numerous bouquets arranged around the figure. The bouquets were large, and made up with Odontoglossums, Carnations, Roses, and Chrysanthemums. Other items for ornament were largely represented by the City tradesmen, including vases and dessert services in various forms, which had many admirers.

An object, which was novel and very instructive, was arranged in a conspicuous position, though simple, was very attractive, especially to cultivators of Vines and Tomatos. Numbers of the most beautiful Vine leaves ever seen were arranged in ornamental form, which showed the effects of cultivation, also of soil and climate. Lady Downes, Gros Colmar, Alicantes, Gros Maroc, and others were very beautiful for table decoration. These are much sought after. Barbarossa is often cultivated for this purpose alone. The Tomatos were fine examples of high cultivation in clusters on the stems, which is the true test of good culture. Mr. Buchanan, from the Vineyard, Kippen, near Stirling, who was the exhibitor, attributed his great success to the manure which he used, viz., the well-known Clovenfords Vine Manure.

A grand table of Carnations and Picotees was exhibited by Mr. Campbell, Blantyre Nurseries. These are the coming flowers, the "Mums" must to some extent make room for them. There are now many extensive growers of these for winter work in northern gardens. Mr. Campbell exhibited many seedlings among his cut flowers.

The groups of Coniferae in pots from Messrs. Dickson & Sons and Laird, filled up a large space. The selection of plants was very choice, and in capital form, showing their characteristics to much advantage. The usual large exhibits of Primulas (obconica, sinensis, single and double) were very fine, and mostly extra well-flowered.

Roman Hyacinths were very numerous, and well-flowered. Cyclamens also were good, and, much admired; and table plants were keenly competed for, which were mostly Dracenas, Crotons, Aalias, and Pandanus; all of them were in fine form for the purpose for which they are used.

Mr. Parker had the finest Japanese bloom in the show, viz., Boule d'Or; the same exhibitor had the finest incurved bloom in Lord Alcester.

The *Gardeners' Magazine* Medal was awarded to Mr. Campbell, of Blantyre, for a table of Carnations.

Fruit and Vegetables.—These were of the finest quality seen in November in the north. The new Grape exhibited by Mr. McIndoe, from Hutton Hall, had the society's special Certificate. I think no black Grape at this season can equal it for flavour. It is juicy like Duke of Buccleuch, sweet, and thin skinned; the footstalks short and stout, and the berries like first-class Gros Colman, having every quality that a first-rate Grape should have.

An exhibit on a large table from Messrs. Dickson & Co., was an object-lesson, showing young trees trained and ready for planting; the roots having been lifted, pruned, and specially prepared. The roots at each tree were a dense mass of fibre, which all young trees should have. A large collection of Apples was exhibited by this firm, who make hardy fruits a specialty—and some of the finest examples in the exhibition were there.

In the Grape classes, Mr. Murray, Parkhall, had the lion's share of the best prizes. For four bunches he was placed 1st, with fine Gros Colman, a large bunch of Mrs. Pince, Alicante, and Mrs. Pearson; the 2nd prize went to Mr. Leslie, Perth, whose bunches of Muscats and Alicante were of extra merit; Mr. McIndoe, Hutton Hall, received 3rd award.

For Muscats of Alexandria, Mr. Leslie tabled two of the finest bunches we have observed this season; Mr. Kidd, Carberry Towers, was 2nd.

Mr. Leslie was 1st for remarkably fine Alicantes, and Mr. Murray's 2nd prize exhibit were also

good. Mr. Murray was 1st for Gros Colman, and Mr. Leslie 2nd.

Mr. Murray was 1st for beautifully-finished Lady Downes, Mr. McIndoe 2nd, and Mr. Leslie 3rd.

For any other variety, black, Mr. Lunt Keir, gr., was 1st, with two finely-formed Mrs. Pince; Mr. McIndoe, 2nd, with Gros Guillaume; and Mr. Murray 3rd, with finely-grown Mrs. Pince, but deficient in colour.

Pine-apples were not numerous, or of great merit. A neatly-grown Queen came from Mr. McIntyre, The Glen; and a fair smooth Cayenne from Mr. Kirk, Alloa.

The other fruits in their classes came from these two growers, who took the only prizes awarded, Mr. McIntyre in each case being 1st. Why he clips every bit of natural covering from his Pines is hard to tell; but he defeats the object he has in view by so doing.

In the collection of twenty kinds of Apples, and ten of Pears, Mr. Dow, gr., Newlyth, had some well-grown fruit; Mr. Wilson, Auchincreeve, was a good 2nd.

Mr. McIndoe was a grand 1st in the class for eighteen dishes of Apples and eight of Pears. Mr. Cairns, Hirsell Gardens, was a creditable 2nd.

In the other classes of hardy fruits, there were some finely-coloured dishes, while the most of them showed the effects of an untoward season. The baskets of Apples were poor.

The collection of fruits (twelve varieties) was well competed for by Mr. McIndoe and Mr. Murray, Culzean Castle; the southern exhibit, being extra strong in hardy fruit, had an easy victory over those from Ayrshire.

The tables of Apples from Nova Scotia were of much excellence, and one of the most attractive exhibits in the hall. Gloria Mundi, Portia, Baldwin, King of Pippins (of extra colour), Blenheim Pippin, Pudsey Rose, and Pumpkin Russet were superb. Alexander had the finest colour we ever saw, but such varieties as Golden Pippin and Ribstons were small and poor in appearance.

The Potatos, Carrots, Turnips, Celery, Onions, and Leeks especially were remarkably fine. The last-named, from Mr. Cairns, Hirsell Gardens, were said by some old exhibitors to be the finest ever seen in Edinburgh. The collections of vegetables of twelve and eight sorts were grandly represented. Mr. Feeder, from Cultoquhey Gardens, Crieff, was 1st for twelve, which were so attractive that crowds lingered around them all the day; Mr. Johnston, Hawick, was 2nd; and the distinguished vegetable grower, McBean, was 3rd—all first-rate. Salads were good, and Tomatos in large quantities, Mr. Murray, Park Hall, being 1st.

TREES AND SHRUBS.

PINUS CEMBRA.

I FIND this Pine will not grow in our strong chalky soil, South Hants, although it is not a wet one. This is much to be regretted, as several that were planted a few years ago, have died. We are situated on a hill 395 feet above sea-level. I mention this fact about this species of Pine, to put those on their guard who may intend to plant it. Thinking to induce it to grow, several were lifted as soon as they showed symptoms of decay, and peat and leaf-mould were added to the soil about their roots, which had the effect of somewhat re-invigorating them, but directly the roots reached the limit of this soil and were in contact with the staple, the benefit was at an end. E. M.

ARALIA SPINOSA.

The spiny Angelica tree, with its large, rough, bipinnate leaves, and ovate, acuminate, and deeply serrated leaflets, borne on prickly woody stems, producing many-branched panicles beset with velvety down, ending in wide-spread umbels of small white slightly-reflexed blooms, is a desirable subject for planting on the lawn or grouping in the foremost lines in a shrubbery. In the low moist woods of its native home, Virginia, it often attains to the height of 10 or 11 feet, a stature it rarely reaches in this country, because it is seldom planted in the proper situation, but a warm dry soil or position is supposed to suit it. The gardener thinks, no doubt, that the plant is not quite hardy here. In opposition to this practice, the plant should be grown

at first in whatever position seems most favourable, whereby its endurance (on given sites) alone can be properly tested. Moreover, when it is considered that the plant often loses its shoots, which die back to the stools in winter, as does the Raspberry, it is evident that it is quite hardy, and is less injured by frost than is generally imagined. In any case, solitary, weak examples, living, rather than growing, upon exposed sites, are by far the most liable to injury and sudden failure. *William Earley.*

LIGUSTRUM QUIHOU.

Considering that this Chinese Privet does not flower until most of its relatives have finished, it is a pity that it should be so little known. The majority of the genus flower during July and August, but the species now under notice is not in bloom before September and October, and it is not unusual for it to extend its floral display until the first week in November. It is just about twenty-four years ago since it was received in English gardens from China, and was named in compliment to Mr. Quihou, of the Jardin d'Acclimatation, Paris. It forms a loose freely-branched bush, rising to a height of 6 to 8 feet, and 5 to 6 feet through; its branches, which are given off irregularly, are freely supplied with dark shining green oblong leaves, each measuring from 1 to 2 inches long. The flowers are borne in loose terminal panicles, and are pure white; they emit a powerful odour, which to some persons is disagreeable, but this can be avoided by planting a little distance from the walk (this remark applies with equal force to the Mock Orange). The shrub, when out of flower, is not the best to look upon, as it presents a somewhat ragged appearance; but ample amends are made when the shoots are terminated by panicles of such valuable flowers, and that, too, when few other plants are in bloom. Like *L. sinense*, it flourishes in poor soils.

PERIPLOCA GRÆCA.

This is an old inhabitant of our gardens, having been grown therein for upwards of three centuries. It is found wild in the southern parts of Europe. The plant is hardy, and passes through our British winters without injury. For covering bare spaces on walls, arbours, tree stumps, &c., it makes a suitable subject. It can also be used as a town climber to advantage, as the smoke seems to have little effect upon it. It is of rapid growth, reaching as high as 20 feet, and produces long shoots which have a dark brownish rind, and deep glossy green leaves, which are lanceolate in shape, and vary from 3 to 5 inches in length. Its brownish-red flowers, though not individually pretty, have a very uncommon appearance when seen hanging in dense clusters from the axils of the leaves in the middle of July. A point greatly in favour of this old-fashioned twiner is its adaptability to the various kinds of garden soils—none seems to come amiss to it. *H.*

HEDYSARUM MULTIJUGUM.

This shrub is of recent introduction, having been cultivated in British gardens for barely ten years; at present it is somewhat scarce. It is quite hardy, and very free-flowering, besides being one of a very small number of pea-flowered plants which flower out-of-doors towards the end of the month of September. The usual flowering time is the middle of August, but a succession of flowers is kept up for one month or five weeks. The plant is of a bushy habit, from 3 to 5 feet high, furnished with numerous side-shoots, on which are borne the axillary racemes of bright red-coloured blossoms, which are produced on quite young plants. The leaves consist of small oblong leaflets in number from twenty to thirty-five, pea-green above and slightly downy beneath. Planted in porous loam, to which a little leaf-mould is added, it cannot fail to be an attractive object in the garden. Seeds, which freely ripen in this country, may be sown soon after they are gathered in light soil, and placed in a warm greenhouse; and when germinated, the seedlings should be handled carefully, and very sparsely

watered, or damping-off will occur. The plants should be potted in small pots, kept near the glass, and when of sufficient size they should be planted out-of-doors. *H.*

Obituary.

JOSEPH SPIBY.—We regret to record the death of Mr. Joseph Spiby, which occurred on Saturday, the 12th inst., at the age of sixty-six years. The deceased was Head Gardener at Sutton Hall, Loughborough, for forty-one years, and was a much-respected and excellent gardener. He had been for nearly twenty years the Secretary of the Sutton Bonnington Horticultural Society.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending November 19.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.					
0	2 +	24	12	— 128 + 240	3 —	227	43.6	9	26	
1	0 aver	10	32	— 339 + 298	1 +	180	26.3	8	30	
2	0 aver	23	13	— 219 + 221	3 —	178	24.3	9	31	
3	5 +	33	0	— 184 + 194	1 +	166	25.6	12	36	
4	3 +	25	6	— 162 + 276	0 aver	158	22.0	8	34	
5	5 +	47	0	— 151 + 130	6 +	144	22.3	13	40	
6	1 +	28	13	— 234 + 227	1 —	183	42.0	14	34	
7	1 +	26	6	— 169 + 173	3 —	183	33.6	9	33	
8	2 +	39	0	— 147 + 127	1 —	169	27.5	21	40	
9	1 +	28	11	— 187 + 143	5 +	202	34.6	20	31	
10	0 aver	36	10	— 135 + 158	5 +	175	34.5	21	34	
*	3 +	64	0	+ 9 + 41	2 +	169	26.8	16	47	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.
Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending November 19, is furnished from the Meteorological Office:—

"The weather was mostly dull and unsettled, with considerable falls of rain in all but the eastern districts; and with occasional fogs over the inland parts of England.

"The temperature was above the mean in all districts, excepting 'Scotland, E.,' 'England, N.E.,' and 'Ireland, S.,' the excess being slight in the western parts of the kingdom, but large (3° to 5°) over our eastern, Midland, and southern counties. The highest readings were observed on the 14th or 15th, when the thermometer rose to 55°, or a little above in Ireland and Scotland, and to 60° or a little above in most parts of England. On the 18th the daily maxima over 'England, N.,' were only a degree or two above the freezing point. The lowest readings, which were registered on the 18th or 19th, ranged from 21° in 'Scotland, E.,' (at Braemar) and 24° in 'England, N.E.,' to 30° in 'England, S.,' and to 38° in the 'Channel Islands.'

"The rainfall was considerably in excess of the average over Ireland and the south of England, and slightly in excess over the eastern parts of Great Britain and the Channel Islands. Elsewhere the

aggregate fall was either less than or equal to the normal.

"The bright sunshine was again very deficient in all the English and Scotch districts, but a little more than the average in the south of Ireland. Over the northern and central parts of Great Britain the duration only reached 8 or 9 per cent. of the possible amount, but in Ireland and the south-west of England the percentage value was 20 or 21."

MARKETS.

COVENT GARDEN, November 24.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. *Ed.*]

MARKET very dull with good supplies, and prices unaltered. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 0- 3 6	Melons, each ... 0 6- 1 3
— Nova Scotia, per barrel 10 0- 17 6	Pine-apples, St. Michael ... 4 0- 6 0
Cobs, per 100 lb. ... 100 0 102 6	Oranges, Florida, per case ... 14 0-18 0
Grapes, per lb. ... 0 6- 2 0	
Lemons, per case ... 15 0- 35 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ferns, various, doz. 4 0- 9 0
Aspidistra, per doz. 15 0-30 0	— per 100 ... 5 0- 8 0
— specimen, each 7 6-21 0	Ficus elastica, each 1 6- 7 6
Begonia, per doz. 6 0-12 0	Heliotrope, per doz. 3 0- 6 0
Chrysanthemums, p. doz. ... 4 0-12 0	Marguerite, per doz. 6 0-12 0
— large plants, ea. 1 6- 2 6	Mignonette, doz pots 6 0-12 0
Cyperus, per dozen 4 0-10 0	Palms, various, each 2 0-10 0
Dracena, each ... 1 0- 5 0	— specimens, each 10 6-84 0
Erica, various, per dozen ... 9 0-18 0	Polargoniums, scarlet, p. doz. ... 4 0- 6 0
	Solanums, per doz. 9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 3 0- 6 0	Mignonette, 12 bun. 3 0- 6 0
Bouvardias, per bun. 0 9- 1 0	Polargonium, scarlet, per 12 bunches ... 5 0- 8 0
Carnations, 12 blms. 1 0- 3 0	12 sprays ... 0 9- 1 0
Chrysanthemums, p. doz. blooms 1 6- 6 0	Poinsettias, per doz. bloom ... 4 0- 9 0
— p. doz. bunches 4 0-10 0	Pyrethrum ... 2 0- 4 0
Eucharis, per dozen 3 0- 6 0	Primula, double ... 0 6- 0 9
Gardenia, per dozen 2 0- 4 0	Pyrethrum ... 2 0- 4 0
Heliotrope, per doz. sprays ... 0 6- 0 9	Roses, Tea, per dozen 1 0- 2 0
Hyacinth, Roman, doz. sprays 0 6- 1 0	— coloured, dozen 1 6- 3 0
Lilac, white French, per bunch 5 0- 6 0	— yellow (Maréchal), per doz. 3 0- 6 0
Lilium Harrisii, doz. 8 0-10 0	— red, per dozen ... 1 0- 2 0
— various, doz. ... 2 0- 4 0	— (French) per dozen 1 6- 4 0
Lily of the Valley, doz. sprays 9 0-12 0	Stephanotis, per 12 sprays 6 0- 8 0
Maiden Hair Fern, 12 bunches ... 4 0- 6 0	Tuberose, 12 blms. 0 3- 0 9
Marguerite, per doz. bunches ... 3 0- 4 0	Violets, Parme French, per bunch 3 0- 4 6
Mimosa, French, per bunch ... 1 0- 2 0	— Czar, French, per bunch 1 6- 2 0
Orchids:—	— small French, p. doz. bunches 1 6- 2 0
Cattleya, 12 blms. 6 0-12 0	— small English, p. doz. bunches 1 6- 2 0
Odontoglossum crispum, 12 blms. 2 0- 6 0	

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4- 0 6	Mushrooms, punnet 2 0-
Beans, French, lb. ... 1 0- 1 6	Mustard and Cress, punnet ... 0 4- ...
Beet, red, per dozen 2 0- 3 0	Parsley per bunch ... 0 3- 0 6
Carrots, per bunch ... 0 4- 0 6	Seakale, per basket ... 2 6- ...
Cauliflowers, each ... 0 3- 0 6	Shallots, per lb. ... 0 6- ...
Cucumbers, each ... 0 4- 0 8	Spinach, per bushel 3 6- ...
Endive, per dozen ... 2 0- 3 0	Tomatoes, per lb. ... 0 6- 1 0
Herbs, per bunch ... 0 9- 1 0	Turnips, per bunch ... 0 4- 0 6
Lettuces, per doz. ... 1 6- 2 0	

POTATOS.

Market still continues very firm for best samples, at prices from 80s. to 90s. Owing to the large arrivals of foreign Potatoes, which are of fair quality, it tends to keep the prices low of our home-grown ordinary sorts; in fact, they are a drag even at the low prices they are being sold at. *J. B. Thomas.*

SEEDS.

LONDON: Nov. 23.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write, that for American Red Clover seed, there is a steadily improving demand, at hardening rates. The crop on the other side appears, without doubt, to be a short one. Germany has recently been a heavy buyer in the trans-Atlantic market, and France has been taking handsome profits by re-selling to America, its early purchases of seed not yet shipped. There is no change this week in either Alsike, White, or Trefol. Ryegrasses keep firm. For Königsberg Tares there is a good inquiry. Winter Vetches are neglected. Canaryseed is steady but quiet. For Hempseed values are

strong. Dutch Haricot and White Runner Beans offer at tempting rates. Blue Peas show no alteration. Both White and Brown Mustard continue scarce. Rapeseed is now very cheap. Not much doing in Linseed.

FRUITS AND VEGETABLES.

SPITALFIELDS: Nov. 23.—Quotations:—English Apples, 2s. 6d. to 7s. per bushel; American, do., 12s. to 15s. per barrel; Pears, 2s. to 3s. per half-sieve; English Tomatoes, 4s. to 6s. per peck; foreign, do., 1s. to 1s. 6d. per box; Cauliflowers, 1s. 9d. to 4s.; Savoys, 2s. to 3s.; Collards, 1s. 9d. to 3s. 6d. per tally; Curly Kale, 1s. 3d. to 1s. 6d.; Spinach, 1s. to 1s. 9d. per bushel; Sprouts, 1s. 3d. to 1s. 9d. per half-sieve; Turnips, 1s. 6d. to 2s.; Greens, 1s. 6d. to 2s. 6d.; Carrots, 1s. 6d. to 2s. 6d.; Parsley, 1s. to 2s. per dozen bunches; Parsnips, 4d. to 8d.; Cos Lettuce, 4d. to 1s. per score; Endive, 4d. to 8d.; Leeks, 1s. 6d. to 2s.; Cabbage Lettuce, 6d. to 8d.; Frame Cucumbers, 1s. 6d. to 2s. per dozen; Celery, 8d. to 1s.; Horseradish, 1s. to 1s. 2d. per bundle; English Onions, 5s. to 6s. per cwt.; Spanish, do., 4s. 9d. to 5s. 6d. per case; Bordeaux, do., 2s. 6d. to 4s. per case; Belgian and Dutch, do., 3s. 6d. to 4s. 3d. per bag of 110 lb.; Carrots, 28s. to 48s. per ton.

BOROUGH: Nov. 22.—Quotations:—Cabbages, 2s. to 2s. 6d. per tally; Cauliflowers, 9d. to 1s. 3d. per dozen; Spinach, 1s. to 1s. 6d. per bushel; Sprouts, 1s. to 1s. 3d. per half-sieve; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 1s. 6d. per dozen bunches; English Onions, 6s. to 6s. 6d.; Dutch do., 5s. per cwt.; Horseradish, 2s. to 2s. 3d.; foreign do., 1s. 6d. per bundle; English Apples, 2s. 6d. to 10s. per bushel.

STRATFORD: Nov. 23.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done as under:—Cabbages, 2s. to 3s. 6d. per tally; Savoys, 3s. to 5s. do.; Greens, 1s. to 1s. 6d. per dozen; Cauliflowers, 1s. to 1s. 6d. do.; Turnips, 1s. 6d. to 2s. per dozen bunches; do., 25s. to 40s. per ton; Carrots, household, 4s. to 5s. do.; do., cattle-feeding, 28s. to 35s. do.; Parsnips, 55s. to 65s. per ton; Mangolds, 15s. to 18s. do.; Swedes, 18s. to 25s. do.; Onions, English, 5s. to 6s. per cwt.; do., Dutch, 4s. to 5s. do.; Apples, English, 2s. 6d. to 5s. per bushel; do., American, 12s. to 20s. per barrel; Brussels Sprouts, 1s. to 1s. 6d. per half-sieve; do., 1s. 9d. to 2s. 6d. per sieve; Celery, 8d. to 1s. 2d. per roll; Horseradish, 1s. 6d. to 1s. 9d. per bundle.

GENERAL AVERAGES: Nov. 21.—Magnums, 50s. to 75s.; Hebrons, 60s. to 75s.; Regents, 60s. to 70s.; Snowdrops, 60s. to 80s.; Imperators, 50s. to 65s. per ton.

FARRINGTON: Nov. 24.—Quotations:—Onions, Kent, 7s. 6d. per bag; Spanish do., 6s. per case; Parsley, 1s. 6d. per bushel; Carrots, 2s. 6d. per bag; Turnips, 5s. per ton; Horseradish, 1s. 6d. per bundle; Apples, American, 12s. to 16s.; Tomatoes, 12s. per 56 lb.

POTATOS.

SPITALFIELDS: Nov. 22.—Quotations:—Snowdrops, 65s. to 75s.; Reading Wonder, 57s. 6d. to 65s.; Bruce Magnums, 50s. to 70s.; Imperators, 55s. to 65s.; Regents, 52s. 6d. to 60s.; Magnums, 55s. to 65s. per ton.

BOROUGH: Nov. 22.—Quotations:—English Magnums, 55s. to 65s.; Hebrons, 60s. to 65s.; Snowdrops, 60s. to 70s. per ton.

STRATFORD: Nov. 23.—Quotations:—Darkland Magnums, 5s. to 55s.; do., 55s. to 65s.; Bruce Magnums, 60s. to 70s. per ton.

FARRINGTON: Nov. 24.—Quotations:—Kent Magnums, 75s. to 80s.; Bedford do., 70s. to 80s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending November 19, and for the corresponding period last year:—1892: Wheat, 27s. 11d.; Barley, 26s. 7d.; Oats, 18s. 1891: Wheat, 38s. 9d.; Barley, 31s. 5d.; Oats, 22s. 4d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 115s.; do., inferior, 50s. to 75s.; Hay, best, 75s. to 112s.; do., inferior, 45s. to 65s.; and Straw, 23s. to 41s. per load.

NOTICES TO CORRESPONDENTS.

* PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of readers.

ANTS: R. M. Try carbolic acid, strewn about the floor of the house and in the runs of the ants.

CALANTHE AND CÆLOGYNE LEAVES: G. S. We find no disease in the leaves sent. Decay probably arises from a too damp atmosphere, or from injudicious watering. The Cælogyne leaf also is the effect of bad culture—probably error in watering during summer, or from bad ventilating.

CARNATION DISEASE: S. B. See our last week's issue.

CELERY ROT AND CARNATION DISEASE: X. The decay in Celery may have been caused by earthing-up too early, or from allowing soil to enter the heart of plant. A wet season also is extremely favourable to such injury—it is not caused by any disease. The Carnation is attacked by the Carnation-fungus. See illustration and note in this column in our last issue.

CHRYSANTHEMUM: G. O. We cannot name the variety. The sport is pretty, but there are so many.—T. S., Ireland. A proliferous head of bloom, analogous to that known in the Daisy as Hen and Chickens.

COCKCHAFER GRUBS IN PRIMULA POTS: J. H. Try the effect of watering the soil with clear lime-water (quicklime). It drives out worms, and may cause the grubs to come to the surface. It will do no harm to the plants.

FLORAL GUM: A. H. Purchasable of any dealer in horticultural requisites. We cannot tell you what the ingredients consist of.

FUNGUS: C. S. & Co. Without the slightest information being afforded by the sender, it is difficult to say positively what any agaric is at this season when so saturated with moisture, but apparently this one is Agaricus (Stropharia) æruginosus. M. Cooke.

GRAPES DROPPING: G. E. Your initials were by an oversight omitted, but the information supplied to our other correspondent will apply in your case. We may here remark that strong fumigation with tobacco will cause the berries, if ripe, to fall.

LOBELIA CARDINALIS: A. B. This is a Canadian water-side plant, which is not hardy here, because it is exposed to alternate freezing and thawing. The roots may be taken up in late autumn, and stored in shallow boxes, packing the roots tightly round with fine leaf-mould, but not covering them. Keep them in a cool pit, where they will not freeze or become dry. In March or April pull the roots to pieces; every bit with a bud being potted will make a nice plant for planting out in May. After dividing and potting them in leaf-mould and loam, stand them at the warm end of the greenhouse, or in a pit with a mild bottom heat till established—no longer; afterwards putting them in a cool frame.

NAMES OF FRUITS: J. J. D. 1, Pear not recognised; 2, Ne plus Meuris; 3, Gansell's Bergamot; 4, Beurré de Capiaumont; 5, Adams's Pearmain; 6, Maltster; 7, Scarlet Nonpareil; 8, Dutch Mignonne; 9, not known.—D. We do not recognise the Apples you sent us.—A. Allum, 1, Soldat Laboureur; 2, White Doyenné; 3, Van Mons. Leon de Clere; 4, Urbaniste; 5, Duchesse d'Angoulême (probably); 6, Louise Bonne of Jersey; 7, Hawthornden; 9, Mère de Ménage; 10, Braddick's Nonpareil; 11, Scarlet Nonpareil.—Edw. G. Allen, 1, Bedfordshire Foundling; 2, Striped Beefing; 3, Hillingdon Pippin; 4, Court Pendu Plat; 5, Grange's Pearmain; 6, Northern Greening; 7, French Crab.—A. L. Your Pear is not Comte de Lamy, but Duchesse d'Angoulême, and is a dessert variety.—W. H. D. 1, Besspool; 2, Blenheim Orange; 3, not recognised; 4, Golden Reinette; 5, Scarlet Nonpareil; Pear Rouse Lench.—W. C. & Son, Apple Beauty of Kent.—J. G. 1, Hornead's Pearmain; 2, Cox's Pomona; 3, Wadhurst Pippin; 4, Rosemary Russet; 5, Humbledon Deux-ans; 6, Tower of Glamis.—B. W. A. 1, Beauty of Kent; 2, not sent; 3, Warner's King; 4, Brownlee's Russet; 5, King of the Pippins.—F. D. and Johnson, Apple Golden Noble.—J. E. & N. 1, Passe Colmar; 2, Beurré de Capiaumont; 3, Beurré Diel; 4, Apple Smart's Prince Arthur; 9, not recognised; 80, Gravenstein; 82, Potts' Seedling.—C. W. Strickland, Pear: 1, Gansell's Bergamot; 2, Bellissime d'Hiver, probably. Apple not recognised.—Thick Head, 1, not identified; 2, Tibbett's Incomparable; 3, Crimson Queening; others not recognised.—T. Singleton, 1, Waltham Abbey Seedling; 2, Forge; 3, Dutch Mignonne; 5, Old Nonpareil; 7, Grange's Pearmain; 12, Lady Henniker. The Pears we do not recognise.

NAMES OF PLANTS: T. B. The specimen sent is the fruit of the common Euconymus europæus. Botanical name of the Butcher's Broom is Ruscus aculeatus.—E. D. L. 4, Aster cordifolius elegans; 5, Aster novi-belgii densus; 6, Atractylis lancea.—J. L. C. Apparently a Melilotus, but specimen unsatisfactory.—A. B. Thuia or Biota orientalis, arbor-vitæ of gardens.—H. K. Catasetum luridum, Bot. Reg., xx., 1667.—R. J. 1, Lælia autumnalis var; 2, Tydæa formosa.—J. B. S. 1, Catasetum sp., send the spike before it goes off; 2, C. macrocarpum.—G. P. Athyrium f.-f. Fritellia; the other, probably Ruellia Devosiana.—E. L. H. A variety of Quercus Ilex.

NATIVE GUANO: H. K. A. Various artificial manures are so called, the chemically-treated residue of the A.B.C. process of deodorised sewage, amongst them which from its almost total lack of nitrogen is of relatively little value as a manure, the urine containing the nitrogen having passed away with the water in the settling process. An excellent native guano could be made out of night-soil without the addition of water if it were treated with acid or phosphatic materials, or with finely-sifted dry loam or powdered clay. Something similar to this is the product of Moule's earth closet, after the material has been employed as a deodoriser five or six times; which may readily be done by having it dried after each employment of it. This is a storeable compound, nearly odourless, and almost equal to Peruvian guano as a stimulus to growth.

PEAS IN EXPOSED GARDEN: J. F. See p. 650, present issue, for varieties which would suit your exposed garden. To these you might add Dr. Maclean, Gladiator, Maclean's Wonderful and Sturdy, all of which are about 3 feet in height, and of the finest quality. Do not sow out-of-doors till the spring.

SKELETONIZING LEAVES: Hortus. Make use of leaves in their prime, and separate those containing much tannin, as Oak, Beech, Chestnut, Willow, Walnut, Hazel, &c., from those deficient in that substance. Put the leaves in an earthen-pan that will hold not less than a gallon, and cover them with rain-water. Let the pan remain exposed to sun and weather, gently stirring the leaves occasionally till the outer or green part of the leaves sticks to the fingers—some leaves take several months to reach this stage, others a few weeks only. Take them out and wash out the substance of the leaf by shaking about in clean water placed in a shallow pan, keeping them steady with the finger on the stalk, whilst the decayed parts are removed with a rather stiff brush. When quite freed from the cuticle, bleach them in chloride of lime and water, two tea-spoonfuls to one gallon of water. When bleached, put them into clean water for a day or two, and then spread them on blotting-paper under pressure.

STRAWBERRY FRUITING IN NOVEMBER: B. P. The fruit is small, and not very tempting. Kindly send promised plants in the spring.

STRAWBERRIES: J. W. As you are not versed in Strawberry forcing, it would be better if forcing were delayed till the middle of January. Meantime keep the plants as cool as possible, but do not allow the soil in the pots to become dry. Afford the utmost amount of air when there is no very hard frost. The maximum day temperature when forcing is begun, may be 50° by day, at night 42° to 45°; and these degrees of warmth may be increased about 1½° per week till the plants flower and fruit sets, when the figures may be 60° and 70°.

COMMUNICATIONS RECEIVED.—G. C. D.—Entomosporum, Cape Town.—W. C.—Sir C. W. D.—B. C.—C. B. C.—J. G. B.—Baron von M.—D. T. F.—Dr. D., Berlin.—J. Q.—C. H. G.—Dr. McF., Philadelphia.—T. C.—Baron Todaro.—Dr. K., Berlin.—J. R.—H. T. C. (too late). E. Brown (it has been explained).—H. W. W.—C. T. D.—W. Bowell.—E. L. T.—W. W.—R. D.—J. R. J.—C. B. Plowright.—Dale Reynolds & Co.—G. Croucher.—J. E. J.—W. A. C.—C. H.—N. K.—D. D.—J. O'B.—A. H.—J. B. W.—T. B.—A. D.—W. T. C.—J. B.—J. W.—E. J.—L. H. S.—F. C. H.—S. P.—O. W.—J. S.—W. H. D.—A. P.—W. D.—E. M.—H. E.—C. T. D.—P. Mayfarth & Co.—J. T. N.

PHOTOGRAPHS RECEIVED, WITH THANKS.—H. P., New Orleans.—W. E. G.

SPECIMENS RECEIVED, WITH THANKS.—W. S.—G. W.—T. C.—E. H. W.

FRUITS RECEIVED.—Harry.—A. C.—E. L. H. (for Quercus, see above).—R. M.

DIED.—On the 19th inst., suddenly, DAVID DAVIES HUGHES, for twenty-five years head gardener at Kimmel Park, Abergele, N. Wales; a faithful servant and valued friend.

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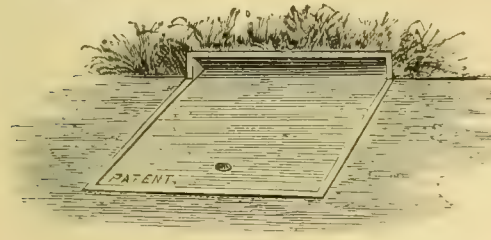
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they effectually prevent the washing away of the gravel in
heavy storms, and they save half the labour in cleaning out
the cesspools. The prices are:—

6-in., 1s. 6d.; 8-in., 2s.; 10-in., 3s.; 12-in., 6s. 6d.; 15-in., 8s.
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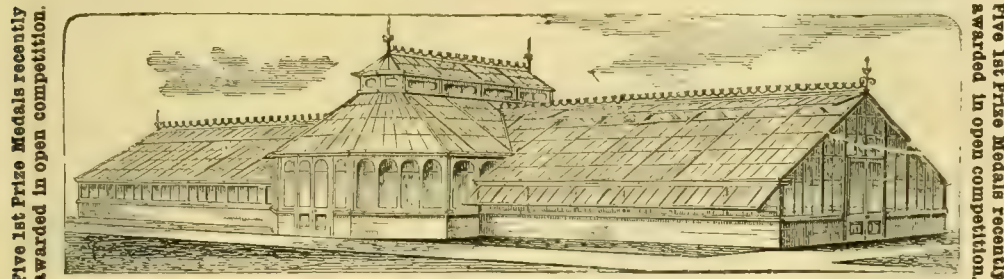
From Mr. J. WILLARD, Head Gardener to the BARONESS
BURDETT-COUTTS, Holly Lodge Gardens, Highgate, N.,
July 12, 1892.—"Dear Sirs, Having given your Improved Garden
Gully a fair trial, I may say that it proves in use all that you
claim for it, and in my opinion has, for the sides of walks and
drives, many advantages over the ordinary grating. Perhaps
the best proof I can give you of this is that, as opportunity
offers, I intend to use them instead of gratings. Faithfully
yours, J. WILLARD."—To Messrs. VINCE & VINE.

From W. WALTON, Esq., Secretary to the LONDON CEME-
TERY COMPANY, The London Cemetery Company, 29, New
Bridge Street, Blackfriars, E.C., July 25, 1892.—"To Messrs.
Vince & Vine, Highgate. I am very happy to testify that your
Patent Garden Gully-Frames in lieu of the old fashioned
gratings answer admirably. They were by my authority fixed
in a new pathway made in Highgate Cemetery, and in the
recent thunder showers they were severely tested and were

most effectual in preventing the scouring of the gravel. At
the inspection my Directors were much pleased with them,
and gave instructions that they were to be used when required
at Nunhead Cemetery.—I am, yours truly, W. WALTON,
Secretary."

From Messrs. CUTBUSH AND SON, Highgate and Barnet
Nurseries.—"Highgate Nurseries, London, July 27, 1892.—
Dear Sirs,—Referring to the Improved Garden Gully you
fixed for us some months ago, we are glad to say it answers
admirably. As you are aware, our Nurseries here are very
hilly, and during the recent storms all the ordinary gullies
were blocked, whereas yours was in good working order. We
shall not hesitate to recommend the same to anyone requiring
the gullies for sides of paths and carriage-drives, and we feel
certain, when it is known, there will be a great demand.—
We are, yours faithfully, WM. CUTBUSH AND SON.—
Messrs. VINCE & VINE."

VINCE & VINE, 58, Chester Road, Upper Holloway, London, N.



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4d. per bushel; 100 for 25s.; truck (loose, about 2 tons),
40s.; 4-bushel bags, 4d. each.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks,
25s.; sacks, 4d. each.

BLACK FIBROUS PEAT, 5s. per sack; 5 sacks, 22s.; sacks,
4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half
ton; 28s. per ton, in 2-bushel bags, 4d. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-
MOULD, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

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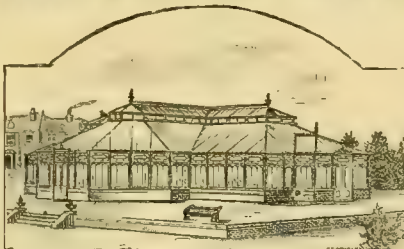
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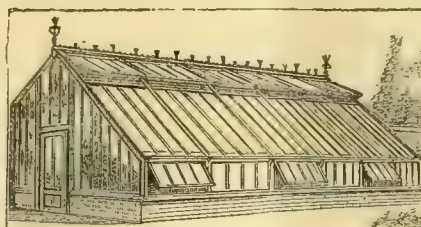
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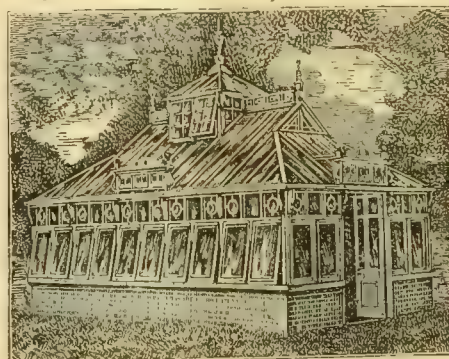
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MR. ANDREW McCULLOCK, Foreman at Mentmore Gardens, Leighton Buzzard, has been appointed Head Gardener to **W. F. WEBB, Esq.,** Newstead Abbey, Nottingham.

MR. E. BRYANT, until recently Gardener to **R. B. E. GILL, Esq.,** Bickham Park, Roborough, South Devon, as Gardener to **F. HUGHES GIBB, Esq.,** Tarrant, Guisville, Blandford, Dorset.

MR. J. S. MAY, late Gardener at Elston Hall, Newark, as Gardener to **MR. FISHER**, Weston Hall, Otley, York-shire.

MR. S. COWLING, late Foreman at Preen Manor, Salop, and formerly of Crooke Cottage, as Gardener to **Mrs. MOPLETON**, Shillingthorpe Hall, Stamford, Lincolnshire.

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WANTED, an unmarried, thorough all-round HEAD WORKING GARDENER; an Under Gardener kept. One who has held similar situation.—Address, **M. A., Purland Chase, Ross, Herefordshire.**

WANTED, an industrious trustworthy young MAN as SECOND GARDENER. Well experienced in Fruit Culture, Plants, and House Decoration. Wages 17s., with bothy.—Address, stating age, and all particulars, **THE GARDENER, Fresham Place, Farnham, Surrey.**

WANTED, a MAN who understands Growing for Market, Bouvardias, Roses, and general Soft-wooded Plants. Wages 18s. Reference as to character and ability required.—Apply, **LEWIS AND WILLIAMS, The Ember Nurseries, Thames Ditton.**

WANTED, an experienced PROPAGATOR and GROWER of Roses, inside and out; small place. State experience and wages.—**MURRELL, Nursery Road, Sunbury.**

WANTED, a good FOREMAN, in a large Market Establishment, well up in Vines, Peaches, Tomatos, Chrysanthemums, &c. Preference given to a man able to invest £100 in the business. References to **FLORIST, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**

WANTED, for a Small Market Nursery in Hertfordshire, a WORKING FOREMAN.—Must be thoroughly experienced in growing Cucumbers, Tomatos, and Cut Flowers for Covent Garden Market; also some experience of Fruit-growing desirable.—State experience, references, and wages required, to **W., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**

WANTED, a thorough hard-working MAN, who can GROW and PROPAGATE ROSES, both Indoor and Out, in quantity, and can work up a quantity of Hard-wooded Stock and Hardy Nursery Plants. State all particulars, if married or single, to **M., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**

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WANTED, an energetic young MAN, of good character as ASSISTANT SHOPMAN; must be thoroughly experienced in Wreath and Bouquet work, also a good Salesman. State age and wages required. —**F. J. SMITH**, Florist and Seedsman, St. Leonard's-on-Sea.

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WANT PLACES. TO GARDENERS, AND OTHERS SEEKING SITUATIONS.

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Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

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GARDENER (HEAD).—ANTHONY GIBBS, Esq., Tyntesfield, Bristol, can highly recommend his present Foreman, **W. Freeston**, as above to any Lady or Gentleman requiring an experienced and practical Man in all-round gardening.

GARDENER (HEAD).—RICHARD EDWARDS, The Gardens, Beech Lees, Sevenoaks, Kent, will be pleased to recommend **Thomas Gibbons** to any Lady or Gentleman who is in want of a first-class man.

GARDENER (HEAD of two, or SINGLE-HANDED place, where help is given); married, two children.—**A GENTLEMAN** wishes to strongly recommend the above.—**BRAY**, Cosgrove Priory, Stony Stratford.

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GARDENER (HEAD WORKING).—Age 31, married, no family; fifteen years' experience in Noblemen's and other establishments; three years as Head. First-class testimonials from each situation.—**T. W. GENT**, 59, College Place, Camden Town, N.W.

GARDENER (HEAD WORKING).—Rev. Dr. CHAFY recommends as above one understanding all branches of his work. Seven and three-quarter years' good character.—**ROUS**, Lench Court, Evesham.

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JOURNEYMAN.—Mr. THORNE, Gardener, Sunningdale Park, Sunningdale, Berks, will be glad to recommend a strong active young man as above.

IMPROVER, in a Market Flower Nursery.—Age 18; four years' experience. Surrey preferred.—**F. J. S.**, 59, The Chase, Clapham Common, London, S.W.

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SHOPMAN (ASSISTANT).—Age 25; ten years' experience. Good knowledge of Seeds, Plants, and Nursery Stock. Good references.—**ALPHA**, *Gardeners' Chronicle Office*, 41, Wellington Street, Strand, W.C.

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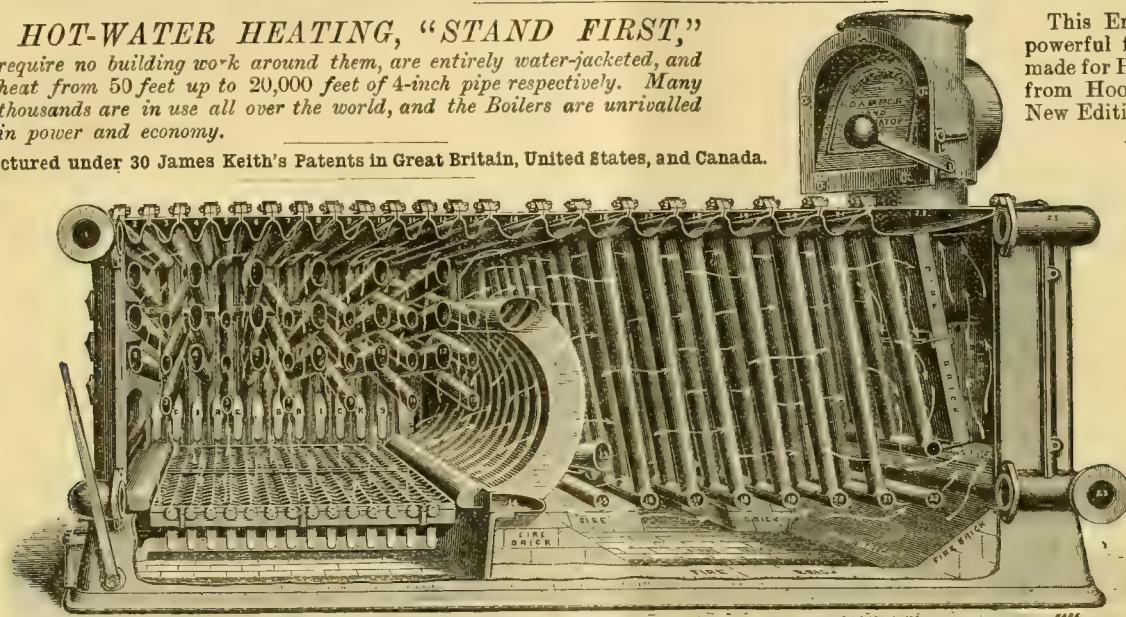
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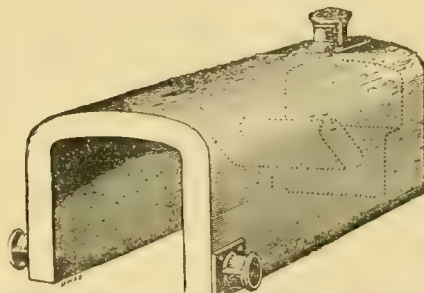
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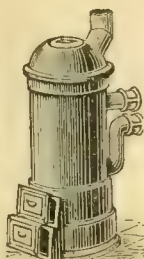
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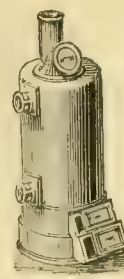
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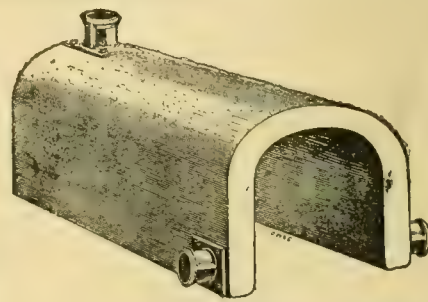
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MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **MONDAY, WEDNESDAY, THURSDAY, and SATURDAY NEXT**, December 5, 7, 8, and 10, at half-past 12 o'clock precisely, very extensive importations of **DUTCH BULBS** in splendid condition, allotted to suit all Buyers. Dwarf ROSES, BORDER PLANTS, LILiums from Japan, Ornamental SHRUBS and CONIFERS, 40,000 Berlin LILY OF THE VALLEY Crowns and Clumps, BEGONIAS, LILium HARRISII, FREESIAS, SPIRÆAS, &c.
On view morning of Sale, and Catalogues had.

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MONDAY, TUESDAY, and THURSDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., as above, at 12 o'clock each day, large consignments of first-class—
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MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY NEXT**, December 5, at 12 o'clock.
On view morning of Sale, and Catalogues had.

Tuesday Next.—Imported Orchids

from Messrs. Fred. Horsman & Co.
THOUSANDS OF ODONTOGLOSSUM ALEXANDRE ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **TUESDAY NEXT**, December 6, 400 lots of Imported ODONTOGLOSSUM ALEXANDRE of the finest possible type, collected by the employés of Mr. John Carder (late of the firm of Messrs. Shuttleworth, Carder & Co.), and about 100 lots of well-grown ESTABLISHED ORCHIDS in perfect health, and mostly with spikes, buds, or sheaths.

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Wednesday Next.

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From Japan, being the contents of 160 Cases just arrived in splendid condition. Also English-grown LILIES; 300 lots of **DUTCH BULBS**, comprising first-class HYACINTHS, TULIPS, CROCUS, and NARCISSUS.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **WEDNESDAY NEXT**, December 7, at 12 o'clock.
On view morning of Sale, and Catalogues had.

Thursday Next.

300 AZALEA INDICA, in several varieties, amongst them 30 DEUTSCHE FERLE, and other special varieties.
100 AZALEA MOLLIS.

48 RHODODENDRONS in distinct varieties, and well-budded, and DRACENA INDIVISA from a well-known nursery in Belgium.

ORNAMENTAL STOVE and GREENHOUSE PLANTS, hardy BORDER BULBS and PLANTS, HERBACEOUS PLANTS, CHINESE PÆONIES, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **THURSDAY NEXT**, December 8, at 12 o'clock.

Friday Next.

SURPLUS PLANTS from the Burford Lodge Collection, comprising—

12 CYPRIPEDIUM LEEANUM, in flower, all good varieties, and fine plants.

" INSIGNIS, 26 flowers, fine variety.

" HALLI, 6 growths.

" MOOREANUM, 6 growths.

" ALBO MARGINATUM, 10 flowers.

" seedling unnamed, Dayanum x Lawrenceianum.

" ORPHEUS, ARGUS, and WARNERI.

EPIDENDRUM O'BRIENIANUM, 16 growths.

DENDROBIUM SIGNALUM, fine plants.

CATTLEYA MENDELLI, TRIANE, GASKELLIANA; a quantity of TRICHOPIA LAXA, semi-established, &c.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on **FRIDAY NEXT**, December 9.

Great Sale of Filmy and Other Ferns
IN SPLENDID CONDITION.

JUST ARRIVED FROM NEW ZEALAND, including 120 FINE PLANTS OF **TODEA SUPERBA**. A fine lot of the scarce Kidney Fern, **TRICHOMANES RENIFORME**, several **HYMENOPHYLLUMS**, such as **DILATATUM**, **CRISPATUM**, and **DEMISSUM**. Being all from New Zealand, these are most suitable for growing in Cool or Temperate-houses. Also 18 fine specimens of **CYATHEA SMITHII**, a scarce and beautiful TREE FERN, with good straight stems or trunks, from 3 to 6 feet high.

Included in this Sale will be three **ALSOPIHIA CRINITA**, from Ceylon, one of the rarest and most handsome of Tree Ferns.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **WEDNESDAY**, December 14, at 12 o'clock.
On view the morning of Sale, and Catalogues had.

FRIDAY NEXT.

GREAT NORTHERN RAILWAY

10,000 ORCHIDS,

AMONG THEM MANY SPECIMENS OF EXTRAORDINARY SIZE. THE WHOLE IN SUPERB CONDITION.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. F. Sander & Co., St. Albans, to **SELL BY AUCTION**, on **FRIDAY**, December 9, about

10,000 ORCHIDS.

The whole are extra fine plants and among them are specimens of unusual size and value; and consist of an extraordinary lot of **CATTLEYA ALEXANDRE** (we shall have about a dozen plants in flower at Christmas, and cordially invite inspection); a spike will also be on view day of Sale; C. LABIATA, our best type, and all unflowered; grand specimens of Phajus tuberosus, Oncidium ampliatum majus, various varieties of Cologyne cristata in splendid specimens, Aerides Lawrenceana and Sanderiana, many seedling Cypripediums, a grand lot of Dendrobis, all set for flowering; many Orchids in bud, ready for Christmas flowering; specimens of Utricularias, great varieties and quantities of Odontoglossums, Cypripediums, and various Cattleyas, such as C. Schroderae, C. Mendeli, D. Mossiae, etc.; Epidendrum vitellinum majus, and other Epidendrum in quantity; Cymbidiums, Vandas, &c. The whole of this enormous quantity of Orchids in splendid condition and health.

In consequence of the erection of a Railway Station on the Nursery Premises by the Great Northern Railway Company, Five Orchid Houses are being pulled down—and hence this enormous lot of Orchids are offered **WITHOUT THE LEAST RESERVE**.

Thousands of Cattleyas and Odontoglossums will be included, and a host of rare Orchids and big specimens, a catalogue of which may be had on application to the Auctioneers, as above.
On view morning of Sale, and Catalogues had.

Andover.

164 Plots, being the Remaining Portion of the **VICTORIA PARK ESTATE**, close to the station, and ripe for Immediate Building, at low reserves, to clear up this Estate.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at the Star and Garter Hotel, Andover, on **FRIDAY EVENING**, December 9, at 7 o'clock, 164 PLOTS of **FREEHOLD BUILDING LAND**, including a few Shop Plots, occupying a choice position in Junction Road, Andover; immediate possession; easy quarterly payments.

Particulars had at the place of Sale, of J. Bannen, Esq., solicitor, New Romney, of the **KENT, SUSSEX, and GENERAL LAND SOCIETY**, Bank Street, Ashford, and 75, Chancery Lane, W.C., and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C.

50,000 Havana Cigars.—Preliminary Notice.

By ORDER of the MORTGAGEES

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY**, December 12, at 12 o'clock, 50,000 genuine **HAVANA CIGARS**, comprising Cabanas, Flor de Cubas, J. S. Murias, Carolinas, Larranagas, Rel del Roy Boquets, and 2000 Villa y Villa in cabinets of 25 each, of super extra quality, very rare.
On view morning of Sale, and Catalogues had.

Cheshunt.—Great Sale of Fruit Trees.

Important to FRUIT GROWERS, MARKET GARDENERS, and GENTLEMEN requiring FRUIT TREES for planting to bear next season.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. T. & G. Oyler (who are compelled to clear the ground), to **SELL** by AUCTION, on the Premises, the Elms Fruit Ground, Park Farm, Cheshunt, 1½ mile from Cheshunt Station, on **TUESDAY**, December 13, at 12 o'clock precisely, 17,000 clean-grown Bush and Standard FRUIT TREES, 4 to 6 years old, all in splendid condition for transplanting, consisting of Lord Suffield, Wellington, Early Julian, Keswick Codlin, King Pippin, Hawthornden, Warner's King, and many other Apples; 300 Pond's Seedling Plum, Victoria, New Orleans, and other varieties; and about 6000 William, Hazel, Calabash, Beurre de Capiaumont, and other Pears.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; of Messrs. T. and G. OYLER, Spitalfields Market; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The Auctioneers desire to call attention to this important Sale. The trees have been grown by Messrs. Oyler expressly for planting in their own grounds, and consist of such varieties as they have found from their experience to be most profitable for market purposes. The trees have been specially prepared for removal to the new Farm which the Vendors were about to take, but the negotiations having fallen through, with regard to planting it with trees, Messrs. Oyler are compelled to sell them for want of room.

Richmond, Surrey.

VALUABLE FREEHOLD and LEASEHOLD INVESTMENTS, also GAS STOCK, by Order of the Executors of Messrs. George and William Steell, deceased.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, at The Mart, Tokenhouse Yard, London, E.C., on **FRIDAY**, December 16, at 2 o'clock precisely, in 23 Lots, the Valuable **FREEHOLD RESIDENCE**, 1, Lancaster Place, Richmond Hill, occupying a high and choice position; 3 Leasehold Villas, Nos. 1, 2, 3, Old Deer Park Villas, Kew Foot-Road, opposite the Athletic Ground; 14 Leasehold Cottages, Nos. 1 to 14, Old Deer Park Cottages, Rosedale Road, and Piece of Land adjoining, all situate in the borough of Richmond; the whole of the properties are in excellent repair, and are let at very low rentals, amounting to £354 per annum; a Block of Freehold Building Land, situate in Jocelyn Road, Richmond, adapted for the erection of two Villas (for which plans have been prepared), with the Brick-built Stable and Coach-house standing thereon; £830 Debenture and Consolidated Stock in the Richmond Gas Company; and £700 Six per Cent. Preference Stock in the Crystal Palace District Gas Company.

Particulars may be had at The Mart; at the principal Hotels in Richmond; of Messrs. SAXTON and MORGAN, Solicitors, 29, Somerset Street, Portman Square, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

MR. THOMAS B. JAMES (for many years with Protheroe & Morris), will **SELL** by AUCTION, without Reserve, on **TUESDAY NEXT**, December 6, at 11.30 A.M., at his commodious Sale Rooms, Bull Ring, Birmingham, 700 CLEMATIS, 250 RHODODENDRONS, 250 AZALEA MOLLIS, 1500 DWARF ROSES, HYDRANGEAS, FRUIT TREES, Two Tons of CONIFERS, in variety; FERNS, in variety; 10,000 QUICK, 3 to 4 feet; 7000 SEAKALE, 20 cases of HYACINTHS, TULIPS, CROCUS, DAFFODILS, &c., 5000 LILY OF THE VALLEY, Berlin Crowns; 2000 LILium LANCI-FOLIUM RUBRUM, 500 L. ALBUM KREITZERI, 2000 L. CANDIDUM, 300 extra fine GLOXINIAS, and endless other things.
Catalogues, post-free.

Thursday Next—Orchids in Flower.

MR. THOMAS B. JAMES will **SELL** by AUCTION, on **THURSDAY NEXT**, December 8, at half-past twelve o'clock, at his Sale Rooms, Bull Ring, Birmingham, about 400 lots of ORCHIDS IN FLOWER from various well-known growers. Also 500 TREE CARNATIONS, in the newest varieties.

Gentlemen desirous of including any Flowering Orchids in this Sale, kindly post list per return. Catalogues free.

WANTED, to RENT, a GENTLEMAN'S GARDEN, with Glass and Orchard; south of England preferred.—S. H. G., *Gardeners' Chronicle* Office, 41 Wellington Street, Strand, W.C.

WANTED, to RENT, a Small Compact NURSERY, with plenty of Glass, good Dwelling house, Stables, &c.—E. BENNETT, Harefield Grove, Uxbridge.

NURSERY and GARDENING BUSINESS, for SALE. Old established; splendid Conservatory, Glasshouses, Forcing Pits, and Grounds, all well stocked, and in good working order; Rent £50; long Lease. Thoroughly genuine. Price, for everything as it stands, £550.
Apply, DILNOTT STOKES and FUGLE, Business Agents, Tunbridge Wells.

Fruit and Potatoes.

FOR SALE, GOODWILL, EMPTIES, &c., of a large WHOLESALE FRUIT and POTATO BUSINESS. Long Lease. No tolls. Best position in Covent Garden Market. Going concern, showing good profits.
Address, K., 41, Edingham Road, Harringay, N.

FLORISTS' BUSINESS to be DISPOSED OF.

Good Outdoor Work; Two Greenhouses; and Shop, in working order. Next to Post Office. Same hands five years. Rent low. All at £10. This is genuine. Apply first to 69, High Street, Camden Town, N.W.

FRUITERS and FLORISTS.—West of London. Turnover at good prices, £3000 a year. Lease, Goodwill, and Stock, £500. Birginn.—X. Y. Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Bournemouth.

FRUITERS' and GREENGROCERS' BUSINESS for DISPOSAL. Quite central; Rent £75, taxes low. Price for Lease, Goodwill, Fixtures, &c., £100. Stock at Valuation.—JAMES AND SON, Business Valuers, &c., Poole Hill, Bournemouth.

TO BE LET or SOLD (Freehold) with Immediate Possession, an Outdoor ROSE NURSERY, planted with all the Leading Market Sorts, consisting of 5 acres, with two Dwelling Houses, Sheds, Stabling &c., situate on the high road, with easy driving distance of London Markets.
Apply, J. CROUCH, Houndsfield, Lower Edm. nton.

Woolwich, S.E.

Adjoining the Dockyard Station (S.E.R.), and within 8 miles of London.

THE Valuable, Long Leasehold NURSERY, situate as aforesaid, having a splendid frontage to the railway and Station Road, comprising five large, well-heated Greenhouses, large piece of Belling-out Ground, a small brick-built Cottage, and other useful buildings. The whole forming an undisputed, reliable concern for an energetic man.

Full particulars obtained of Messrs. R. PECKITT and CO., House Agents and Valuers, 1, Wellington Street, Woolwich.

TO LET, owing to ill-health, a Genuine SEED and FLORIST BUSINESS, in good Market Town, 21 miles from London. Splendid position in main street. Small Nursery, containing four Greenhouses. Stock and Goodwill at valuation.—W. G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

TO THE TRADE.—400 CALLAS, good strong plants, all showing flower. Low price for cash. GEO. AYLOTT, Florist, Kingston Road, New Malden, Surrey.

EUCHARIS AMAZONICA.—For Sale, a batch of about 150 pots. Must be sold, as the room is wanted. No reasonable offer refused. Apply—H. ROSE, Oakfield Nursery, Hampton.

FERNS! FERNS!—Trade.—Greenhouse and

Stove, 25 saleable sorts, in 2½-in. pots, 12s. per 100; 10 best market sorts, in 4½-in. pots, 6s. per doz.; good stores, 6s. per 100. Large Adiantum cuneatum, value in fronds, 6s. per dozen. Cyperus, Aralias, Solanums and Primulas, in 4½-in. good value, 6s. per doz. Palms, Ficus, Erica hymenalis and Dracenas, in 4½-in. 1s. each. Selected P. tremula and A. cuneatum, for making large plants quickly, 16s. and 20s. per 100, well packed, put on rail free for cash with order.—J. SMITH, London Fern Nurseries, Loughboro' Junction, London, S.W.

GREAT SALE of FILMY and OTHER FERNS,

JUST ARRIVED FROM NEW ZEALAND,

INCLUDING 120 FINE PLANTS OF TODEA SUPERBA.

A fine lot of the scarce Kidney Fern,

TRICHOMANES RENIFORME.

Several HYMENOPHYLLUMS, such as "DILATATUM," "CRISPATUM," and "DEMISSUM."

Being all from New Zealand, these are most suitable for growing in Cool or Temperate Houses.

ALSO,

EIGHTEEN FINE SPECIMENS OF CYATHEA SMITHII,

A scarce and beautiful Tree Fern, with good straight stems or trunks from 3 to 6 feet high.

Included in this Sale will be three

ALSOPHILA CRINITA, FROM CEYLON,

One of the rarest and most handsome of Tree Ferns.

The above to be SOLD by AUCTION by

MESSRS. PROTHEROE AND MORRIS,

At their CENTRAL SALE ROOMS, 67 and 68, CHEAPSIDE, E.C.,

On WEDNESDAY, December 14, 1892, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

FLOWERING THORNS.

Double Scarlet, Double Pink, and Single Scarlet. Standards, 1s. 6d. each, 15s. per dozen; Pyramids or Bushes, 9s. to 18s. per dozen, 50s. to 75s. per 100; extra large, 100s. to 120s. per 100.

H. LANE AND SON, Nurseries, Berkhamsted, Herts.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD AND NURSERIES, CARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS,
FERNS, &c., &c.

CATALOGUES, with full particulars, post free on application.

Special Quotations to the Trade.

FOR ORCHIDS and GARDENERS

to Grow Them, apply to SANDERS, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

EUONYMUS, GOLDEN BUSHY.

1 year old, 12s. per 100.
2 years old, £1 per 100.
3 years old, £1 10s. per 100.

CYCLAMEN, in 48-pots, clean, and very strong, just opening flower, and full of buds. About 1000 plants to be disposed of; open to a Trade offer.

M. K., The Nursery, Roxley, Ewell, Epsom, Surrey.

SPECIAL TRADE OFFER,

at reduced prices, as follows, all fine healthy trees:—

500,000 RHODODENDRONS, from 2 to 4 feet.

ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 9 to 10 feet.

Mountain, 3 to 4 feet, 6 to 7 feet, 9 to 10 feet, 10 to 12 ft.

BEECH, Common, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 10 to 12 ft.

BIRCH, 9 to 10 feet, and 10 to 12 feet, fine.

CHESTNUTS, Horse, 3 to 4 feet, 5 to 6 ft., 8 to 9 ft., 9 to 10 ft.

ELM, 3 to 4 feet, 6 to 8 feet, 9 to 10 feet, stout.

LIMES, red twigged, 6 to 7 feet, 8 to 9 feet, 9 to 10 feet.

Pinus, Weymouth, from 2 to 6 feet, various sizes.

POPLARS, 3 to 4 feet, intermediate sizes up to 10 feet.

PRIVET, oval-leaf, 2 and 3 feet; evergreen, 3 to 4 feet.

THORN QUICK, many hundred thousand, from 4 to 6 years old, very strong; SYCAMORE, 6 to 10 feet; LILACS,

PINES, Austrian, from 3 to 6 feet, fine trees; AUCUBAS,

LAURELS; HOLLIES, various; BERBERIS AQUIFOLIA, 1½ to 2½ feet; BOX, YEW, ELDER, golden;

IVIES, and General NURSERY STOCK.

For prices, &c., apply to ISAAC MATTHEWS AND SON,

The Nurseries, Milton, Stoke-on-Trent.

N.B.—Rhododendrons, early-flowering varieties, from 15 in. to 2½ feet, full of buds, at special low prices, for forcing. Over 500,000 to select from. Inspection invited.

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GRAND FLORAL FÊTE, YORK

JUNE 14, 15, and 16, 1893.

Prizes, £800. Schedules ready in January.

CHAS. W. SIMMONS, Secretary, 13, New Street, York.

Chrysanthemums.

ROBERT OWEN, F.N.C.S., Floral Nursery,

Maidenhead, Importer, Raiser, and Grower of

NEW AND CHOICE CHRYSANTHEMUMS.

The Largest and Best Collection in Europe.

Awarded 150 First-class Certificates and Eight Medals.

Catalogue Free.

All Latest Novelties distributed in early Spring.

Lists ready early in January.

COVERT FOR GAME.

LAURELS, Common, 1½ to 2 feet, bushy, 70s. per 1000.

" " 2 to 3 feet, bushy, 100s. per 1000.

" " 3 to 4 feet, 15s. per 100.

" Portugal, 1½ to 2 feet, bushy, 25s. per 100.

" 2 to 3 feet, very bushy, 50s. per 100.

BERBERIS AQUIFOLIA, 1½ to 2 feet, very bushy, 80s. per 1000

BEECH, 2 to 3 feet, strong, 30s. per 1000.

" 4 to 5 feet, very strong, 50s. per 1000.

HOLLIES, 2 to 3 feet, very bushy, 50s. per 100.

" 3 to 4 feet, fine plants, 75s. per 100.

PRIVET, Evergreen, 3 to 4 feet, bushy, 40s. per 1000.

LARCH, SCOTCH SPRUCE, FIR, and QUICKS, THORNS,

in large quantities, and OTHER TREES, equally cheap and good.

CATALOGUES and Samples free on application.

R. TUCKER, Nurseries, Faringdon, Berks.

The Best Present for a Gardener.
VINES and VINE CULTURE.
 The most complete and exhaustive Treatise on
 Grapes and their Culture ever published.
 Third Edition, just out.
 Price 5s., post-free, 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

THREE STERLING ARTICLES
 for SEED LISTS, 1893.

To the Trade.—Price per dozen and 100 packets, on application.
Hartland's Snowdrift Double-white fimbriated Poppy.
Hartland's April Queen Late Broccoli.

Cosmos bipinnatus, The Pearl.—This latter, for winter
 blooms and white flowers. Grown in pots and placed out
 of doors with Chrysanthemums, and then removed to a
 temperature of 55° or 60°, when a most continuous display
 of lovely white Queen Dahlia-like flowers can be cut until
 Christmas.—**WM. BAYLOR HARTLAND, F.R.H.S.,**
 Seedsman, 24, Patrick Street, Cork.

FOREST TREES, &c.—Alder, 2 to 3 feet,
 1s. per 1000; 4 to 5 feet, 2s. per 1000. Ash, common,
 1½ to 2 feet, 12s.; 2 to 3 feet, 16s.; 3 to 4 feet, 20s. Beech,
 1½ to 2 feet, 14s.; 2 to 3 feet, 16s.; 2½ to 3 feet, 20s.; 3 to 4 feet, 24s.
 Chestnut, Horse, 2 to 3 feet, 20s. per 1000. Spanish Chestnuts,
 1½ to 2 feet, 16s. Larch, 12 to 15 inches, 14s.; 1½ to 2 feet,
 20s.; 2 to 2½ feet, 26s. Spruce Fir, 12 to 18 inches, 14s.;
 1½ to 2 feet, 16s. Scotch Fir, 2-yr. tr., 18s. Silver Fir,
 3-yr. tr., 20s. Hazels, 2 to 3 feet, 20s. Oak, 2 feet, 16s.;
 2½ to 3 feet, 20s. P. austriaca, 2-yr. tr., 16s. P. Laricio,
 2-yr. tr., 20s. Privets, Oval, 2 to 2½ feet, 26s. Sycamore,
 2 feet, 12s.; 2½ feet, 16s.; 4 to 5 feet, 4s. per 100; 6 to 7 feet,
 7s. per 100; 12 feet, fine, 24s. per 100. Thorns, 12 to 13 inches,
 6s.; 2 feet, 8s.; 2½ feet, 10s.; 3 feet, 12s.; 3½ to 4 feet, 14s.;
 4 to 5 feet, 22s.

GARLIES MITCHELL, Nurseryman, Stranraer.

AUTUMN PLANTING
 The Subscribers
 invite inspection of
 their stock (one of the most
 complete in Europe) of
Forest and Ornamental
Trees, Shrubs, Plants
 &c. grown at their extensive Nurseries, in a high and
 exposed situation near Carlisle, admirably adapted for trans-
 planting to any situation in the United Kingdom.
By Royal Warrant
The Queen and H.R.H.
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Little & Ballantyne
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 The Queen and H.R.H.
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GARLISLE

CHRYSANTHEMUM CUTTINGS.—Madame
 Desgranges, 12s. per 1000; Bronze and good Yellow, 10s.
 per 1000. Also strong Cuttings of best show varieties of the
 newest varieties, 1s. per dozen.
CHIPPERFIELD, Thames Valley Nursery, Hampton Hill.

ROSES FROM DEVONSHIRE.
 Finest Bush Hybrid Perpetuals, 6s. per doz. } Strongly
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 Sellers' selection, strongest plants. Carriage and postage free.
 Cash with order. **ROSE CATALOGUE FREE** on application.
 Buyer's selection at Catalogue prices.
CURTIS, SANFORD AND CO, Devon Rosery, Torquay.

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JOHN SHARPE & SONS'
WHOLESALE CATALOGUE for 1893
 has now been sent to all their Customers, and others may
 receive it by applying to **Bardney**, or to
MR. J. H. MILLARD,
 BRANCH MANAGER, READING.

HARDILY - GROWN
FRUIT TREES
TRUE TO NAME:
LARGEST STOCK
IN THE KINGDOM,
 Including all
 the most Popular and
 Profitable
 Kinds in Cultivation.
 Descriptive Priced List Free on application.
DICKSONS The Nurseries, **CHESTER**
 (Limited).

VICTOR POTATOS (SHARPE'S).

This favourite first early Potato, suitable for any Garden,
 indispensable for Forcing and Early Borders, and likely to take
 the first rank amongst first earlies for market use. Quality
 and yield all that could be desired. One well-known market
 grower has this year had a yield of 15 tons per acre on a large
 acreage. London and Manchester salesmen speak highly of
 their quality, and report that Victors will keep their bloom
 and have a fresh appearance after being in the market some
 days, when other early Potatoes have become discoloured and
 unsaleable.

The stock we offer is the true yellow-fleshed variety and not
 the white variety, which is often substituted.

Price per cwt. and ton. State requirements to

W. W. JOHNSON & SON,
 Seed Growers and Merchants, Boston, Lincolnshire.

SPECIAL CULTURE OF

FRUIT TREES AND ROSES.

A LARGE AND SELECT STOCK IS NOW
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The Illustrated and Descriptive Catalogue of
 Fruits, post-free, 3d.

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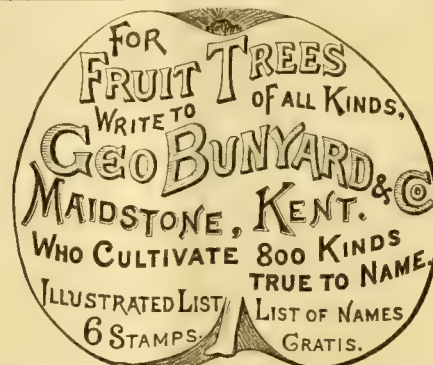
THOMAS RIVERS & SON,
 THE NURSERIES,
 SAWBRIDGEWORTH, HERTS.

THE COLORADO BLUE SPRUCE,

PICEA PUNGENS GLAUCA.

Handsome specimens, 2, 3, 4, 5, and 6 feet high. These are
 all of the *Bluest* type, and undoubtedly the finest Plants in
 Commerce. They are all Seedlings, the plants usually met
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ANTHONY WATERER,
 KNAP HILL NURSERY, WOKING, SURREY.



ORDER DIRECT—NO BRANCHES OR AGENTS.

NEW CHRYSANTHEMUMS.

NORMAN DAVIS

Begs to intimate that he has among the New
 Chrysanthemums of the present season, several
 of exceptionally fine quality, including the two
 magnificent New Crimson Japanese—

WILLIAM SEWARD & J. SHRIMPTON,
 the finest introductions of recent years, and which
 will be distributed by him during the coming
 spring. **CATALOGUE ON APPLICATION.**

CHRYSANTHEMUM NURSERIES,
 LILFORD ROAD, CAMBERWELL, LONDON, S.E.

NOW IS THE TIME TO PLANT

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NEW DESCRIPTIVE

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PRICED CATALOGUE

Of Fruit Trees, Roses, Conifers, Shrubs, Forest
 Trees, Climbers, &c. An immense Stock grown.

LANDSCAPE GARDENING
 A LEADING FEATURE.

GEO. JACKMAN & SON,
 Woking Nursery, Woking, Surrey.
 ESTABLISHED 1810.] [AREA, 150 ACRES

London County Council.

PARKS AND OPEN SPACES DEPARTMENT:
 ASSISTANT TO THE CHIEF OFFICER.

THE LONDON COUNTY COUNCIL is
 about to APPOINT an ASSISTANT to the Chief Officer
 of the Parks and Open Spaces Department. The duties attached
 to this post will be to Assist the Chief Officer in matters
 relating to Horticulture in the various Public Parks and
 Gardens in London, and in Supervising and Directing the
 Management of the Open Spaces, and the Laying-out of New
 Grounds, and generally to act in Outdoor-work, under the
 direction of the Chief Officer. Applicants must therefore
 possess a thorough knowledge of the science and the practice
 of Horticulture, and general experience in the Management
 of Parks and Gardens.

The salary attached to the office is £200 a year, but there
 will be no superannuation or pension. The office will be held
 during the pleasure of the Council, and the holder will be re-
 quired to give his whole time to the duties of his office and
 will not be allowed to take any private business, to hold any
 other appointment, or to occupy any other paid position.
 Applications, containing particulars of the qualifications and
 experience of the applicant must be on the forms to be obtained
 at this office, and must, with copies of recent testimonials
 attached, be addressed to "The Clerk of the London County
 Council, Spring Gardens, S.W.," and be endorsed on the outside
 "Assistant Superintendent, Parks."

They must be delivered here not later than 10 A.M. on the
 morning of December 9, after which time no application will
 be received. Any application which does not contain all the
 particulars above-mentioned, or which in any other respect
 fails to comply with the terms of this advertisement, will not
 be laid before the Council. Personal canvassing is strictly
 prohibited.

H. DE LA HOOKE, Clerk of the Council,
 Spring Gardens, S.W., November, 1892.

MYATT'S PROLIFIC, for Sale.—Grown on
 high land, and true; 50s. per 2-Ton Lots; less for
 larger quantity.

G. F. YOUNG, Swinehead Abbey, Boston.

CHRYSANTHEMUMS.—Awarded 1st prize
 for 48 Incurved, N.C.S. Centenary Show, 1890. Our de-
 scriptive CATALOGUE of New Varieties for 1893, and all the
 best of the latest introductions (Incurved and Japanese), will
 be sent post-free. Prices very low. True to name. Satisfac-
 tion guaranteed, or cash returned.

RAY AND CO., Florists, Teynham, Kent.

500 Prize-Strain GLOXINIA TUBERS,
 1 and 2 years old, 12s. per 100; 200 TUBEROUS
 BEGONIAS, 1 and 2 years, single, mixed, 20s. per 100; 5000
 Double White DAISIES, 2s. 6d. per 100. 20s. per 1000, cash
 with order. **SMITH**, Paul's Cray Hill, Kent.

SEAKALE for Forcing, superior selected
 Crowns, 80s. per 1000; under 500, at 9s. per 100. Cash
 with all orders.—**ALFRED ATWOOD**, Market Grower, 2',
 Shillington Street, Battersea, S.W.

ASPARAGUS, of fine quality—for Forcing,
 5-yr. old, splendid roots, 12s. 6d. per 100, free on rail;
 6-yr. old, extra fine, 15s. per 100. Cash with order. My Aspa-
 ragus always makes top price at Covent Garden.

Read the following unsolicited testimonial:—"Please send
 me another 200 of 5-yr. old Asparagus roots. I may say that
 the last 200 were the best lot of forcing roots I ever bought, and
 my employer says the quality is excellent.—**C. H. PERKINS**,
 The Gardens, Milton Abbey, Blandford."

J. J. CLARK, Market Gardener, Goldstone, Brighton.

DROVER'S BOOK on the **CHRYSANTHE-**
MUM (Illustrated, post-free, 1s. 2d.) should be read by
 every grower. Winners of two 25-Guinea Challenge Cups,
 Centenary Prize (48 Blooms), and Champion Cup (50 Guineas),
 Royal Aquarium, 1892. **CATALOGUE**, 3d. Nurseries, Fareham.

CHAS. FRAZER'S EXORS.—Conservatories,
 Orchid-houses, Vineries, Greenhouses, Plant and Forcing
 houses. Best Materials and Workmanship guaranteed, at Mode-
 rate Prices. Intending Purchasers waited upon by appointment.
HOT-WATER BOILERS and HEATING APPARATUS, for
 large or small Greenhouses. Great variety of Garden Frames
 and Handlights kept in stock. All kinds of Garden Requisites,
 Poultry Appliances, Portable Summer-houses, Tool-houses,
 Pigeon Cotes, Dog Kennels, and Rabbit Hutches. Profusely
 illustrated **CATALOGUE**, post-free, for six stamps.

PALACE PLAIN HORTICULTURAL WORKS, NORWICH.

WARE and SONS'
ARE THE FLOWER POTS BEST.

THE SUSSEX POTTERY WORKS, UCKFIELD

Quotations given for quantities. Carriage paid to any
 The Best Railway Station. are Cheapest.
SAMPLES and LISTS FREE. Crates packed.

ORCHID BASKETS,
RAFTS, BOATS, AND CYLINDERS,
AND ALL GARDEN SUNDRIES.

SEND FOR A

PRICE LIST

from the Largest Manufacturer in the Trade.

H. G. SMYTH,

21, GOLDSMITH STREET,
 DRURY LANE, W.O.

ROBERTS'S (IMPROVED) PATENT

STOVES

TERRA-COTTA! PORTABLE! FOR COAL!

Pure and ample heat, 24 hours for about 1d., without attention.

For Greenhouses, Bedrooms, &c.

GREENHOUSES Heated 24 Hours for about One Penny. Pamphlets, Drawings, and authenticated Testimonials sent. See in use at Patentee's,

THOMAS ROBERTS, 34, Victoria St., Westminster.

ARCHANGEL MATS—ARCHANGEL MATS*The RUSSIAN MAT IMPORTERS CO. are Now Selling for Cash with Order—*

NEW SEASON'S ARCHANGEL CARGO MATS, at 100s. per 100, or 10s. 6d. per bundle of 10.

NEW ST. PETERSBURG CARGO MATS, at 5s. per 100, or 5s. 6d. per bundle of 10.

(Special Quotations for Large Quantities)

40, GREAT TOWER ST., LONDON, E.C.

THE IMPROVED GARDEN GULLY (VINCE'S PATENT).

This useful invention is a great improvement on the ordinary Garden Grating, and is especially suitable for hilly walks and drives. As they never get stopped by rubbish or sand they effectually prevent the washing away of the gravel in heavy storms, and they save half the labour in cleaning out the cesspools. The prices are:—

6-in., 1s. 6d.; 8-in., 2s.; 10-in., 3s.; 12-in., 6s. 6d.; 15-in., 8s. (The larger sizes are very strong for carriage drives.)

FIXED.

Full Particulars on application. Testimonials:—

From Mr. J. WILLARD, Head Gardener to the BARONESS BURDETT-COUTTS, Holly Lodge Gardens, Highgate, N., July 12, 1892.—“Dear Sirs, Having given your Improved Garden Gully a fair trial, I may say that it proves in use all that you claim for it, and in my opinion has, for the sides of walks and drives, many advantages over the ordinary grating. Perhaps the best proof I can give you of this is that, as opportunity offers, I intend to use them instead of gratings. Faithfully yours, J. WILLARD.”—To Messrs. VINCE & VINE.

From W. WALTON, Esq., Secretary to the LONDON CEMETERY COMPANY, The London Cemetery Company, 29, New Bridge Street, Blackfriars, E.C., July 25, 1892.—“To Messrs. VINCE & VINE, Highgate. I am very happy to testify that your Patent Garden Gully-Frames in lieu of the old-fashioned gratings answer admirably. They were by my authority fixed in a new pathway made in Highgate Cemetery, and in the recent thunder showers they were severely tested and were

most effectual in preventing the scouring of the gravel. At the inspection my Directors were much pleased with them, and gave instructions that they were to be used when required at Nunhead Cemetery.—I am, yours truly, W. WALTON, Secretary.”

From Messrs. CUTBUSH AND SON, Highgate and Barnet Nurseries.—“Highgate Nurseries, London, July 27, 1892.—Dear Sirs,—Referring to the Improved Garden Gully you fixed for us some months ago, we are glad to say it answers admirably. As you are aware, our Nurseries here are very hilly, and during the recent storms all the ordinary gullies were blocked, whereas yours was in good working order. We shall not hesitate to recommend the same to anyone requiring the gullies for sides of paths and carriage-drives, and we feel certain, when it is known, there will be a great demand.—We are, yours faithfully, WM. CUTBUSH AND SON.—Messrs. VINCE & VINE.”

VINCE & VINE, 58, Chester Road, Upper Holloway, London, N.

“FRICI DOMO” CANVAS.

Made of prepared Hair and Wool, a perfect protection to all Plants, Blooms. Cheaper than any kind of mat, and will last for years.

To be had from all Nurserymen and Seedsmen.

FOR PRICE LIST & PARTICULARS ADDRESS: **BENJAMIN EDGINGTON** 2 DUKE ST. LONDON BRIDGE**BARB WIRE.**

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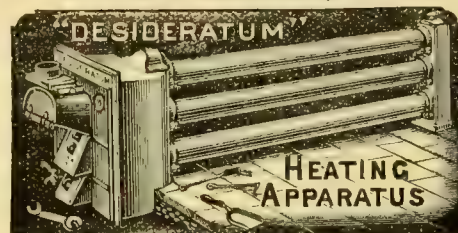
THE LONGFORD WIRE CO.

(LIMITED),

WARRINGTON.

**JONES & ATTWOOD.**

STOURBRIDGE.



For GREENHOUSES and OTHER BUILDINGS. CATALOGUE AND ESTIMATES FREE.

BOULTON & PAUL, HORTICULTURAL BUILDERS, NORWICH.

WINTER GARDENS, CONSERVATORIES, AND GREENHOUSES IN ALL STYLES.

GARDEN FRAMES in great VARIETY.



No. 80.

PORTABLE PLANT PRESERVER.

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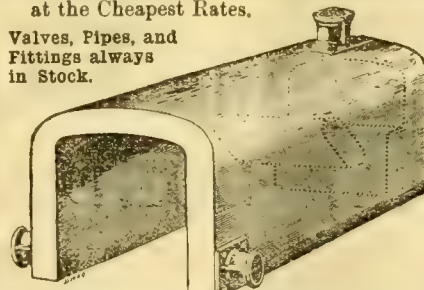
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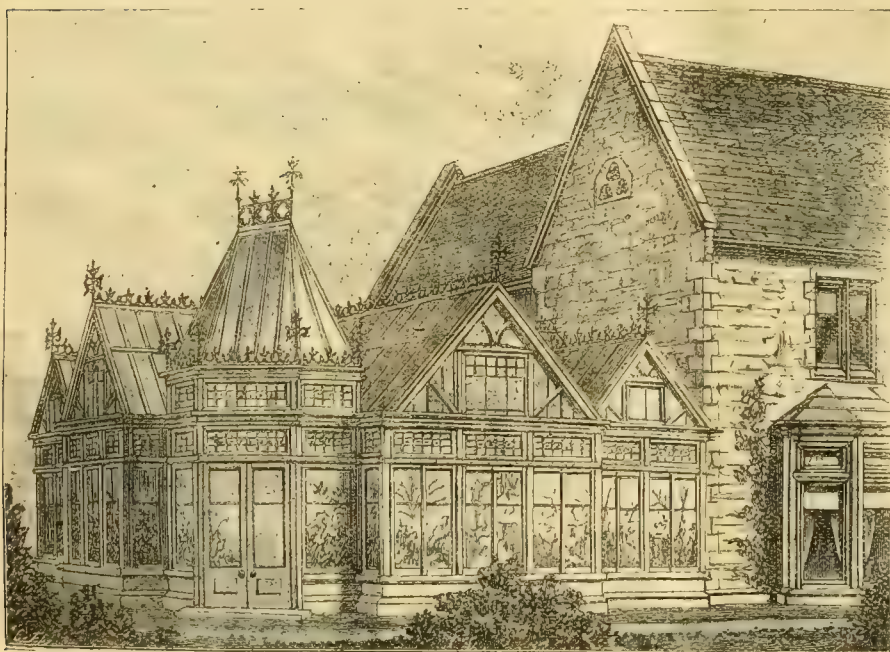
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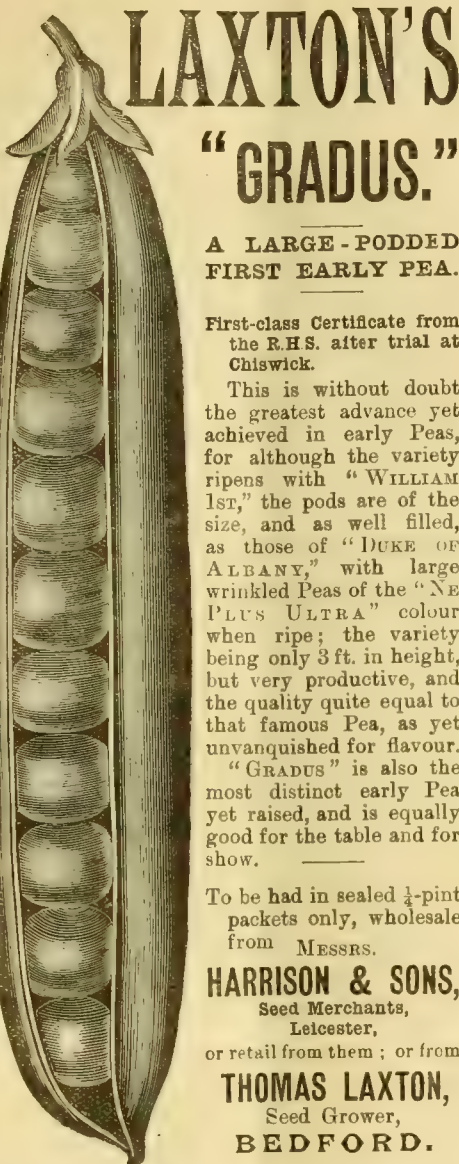
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" NEGUNDO VARIEGATUM, Standards, 8 to 10 feet.
" REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.
" SCHWEDLERI, 12 to 18 feet, girth 4 to 8 inches.
" WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.
CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
" Double White, 14 to 16 feet, girth 6 to 8 inches.
" Scarlet, 12 to 18 feet, girth 4 to 10 inches.
" Spanish, 12 to 14 feet, girth 4 to 5 inches.
ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
" Guernsey, 16 to 18 feet, girth 7 to 9 inches.
LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
" EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.
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OAK, English, 12 to 14 feet, girth 4 to 5 inches.
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 3, 1892.

RHODODENDRONS.*

RHODODENDRONS have held a prominent
position among popular garden plants for
nearly a hundred years. To-day they rank next
to the Rose among plants which are cultivated
for their flowers. The history of Rhodo-
dendrons, which is one of peculiar interest, is
scattered through all kinds of books and papers,
both botanical and horticultural, and it is there-
fore not easy for anyone to obtain a good
general idea of the genus as a whole. For this
reason I have made my paper chiefly historical.

Rhododendron is the second largest genus in
the Heath family, Erica itself being first with a
total of something like four hundred species.
But whilst we may reasonably assume that the
extent of the latter genus is already known,
there are good reasons for believing that the
Rhododendrons will eventually surpass the
Heaths in point of numbers. In 1764 Linnæus
knew only five species. In 1839 the number
known had increased to thirty-two species; and
in 1875, according to Hooker, in the *Genera
Plantarum*, the recognised species numbered
one hundred and thirty. Writing in November,
1890, Sir Joseph Hooker stated that "judging
by recent botanical explorations, the genus will
probably exceed in the number of its species all
previous estimates, the discoveries made in the
eastern Himalaya being only harbingers of what
the vast mountain regions further east may be
expected to yield in new forms of Rhododen-
drons. The genus which is represented in western
Europe by three species only, with two additional
in the southern Caucasus, develops remarkably
in the Himalaya region eastward. Considering
how imperfectly that great and lofty region has
been explored, it may safely be assumed that not
half of the Rhododendrons peculiar to India
have yet been discovered. In the western moun-
tains of China between sixty and seventy species
of Rhododendron have already been collected,
although only fragmentary explorations have
yet been made. It is, therefore, not impossible
that the Chinese Empire may contain more
species of this genus than all the rest of the
world besides."

The distribution of the known species is as
follows:—

Europe	3 species
India (British)	46 "
China and Japan	65 "
Malay and New Guinea	27 "
Rest of Asia	6 "
America, North	15 "

This gives a total of 162.

* A paper read before the Kew Gardeners' Society, by
W. Watson, Assistant Curator.

There are no Rhododendrons in Australia, none in Africa, none in South America. The plants known as Andean Rhododendrons are Befarias. They get near to the Australian continent in New Guinea, where several very beautiful species have been discovered at high altitudes. So far, however, not one of these has been introduced.

The limits of the genus in regard to temperature appear to be the cold of Lapland on the one hand, and an intermediate temperature on the other. Although plentiful on the mountains of tropical countries, not one descends to really tropical climes.

The genus, as it is now constituted, includes the hardy deciduous Azaleas and the greenhouse Azaleas, commonly known as Indian Azaleas. It is generally believed that the sinking of Azalea under Rhododendron is a recent botanical fad, but, as a matter of fact, it was proposed by Salisbury nearly ninety years ago. He wrote in 1805:—"To the genus Rhododendron I have no hesitation in referring all the Azaleas of other authors. They agree minutely in habit, inflorescence, filaments, anthers, pollen, fruit, and seeds. Mere number of stamens appear to be of no consequence whatever. The deciduous and evergreen species cross freely with each other, hybrids from the two being now in the nursery of Mr. Thompson at Mile End."

The authors of the *Genera Plantarum* divided the genus into nine sections, grouping under Azalea (section iv.) the deciduous hardy species represented by *R. sinense* and *R. ponticum*. The greenhouse Azaleas were placed under *Tausia* (section v.).

The names as they stand in gardens, albeit a little inconvenient, will probably continue to satisfy the requirements of horticulturists, who now call the evergreens of the genus Rhododendrons, except the greenhouse Azaleas, employing this latter name for the hardy deciduous species as well.

Turning now to the salient features of the genus, we first note a fact of some importance to horticulturists, namely, that scarcely one of the many species known is wanting in that kind of interest which we all look for in a garden plant. From the largest to the smallest in stature, in leaf and in flower, they are all eminently plants for the garden. Another commendable character of Rhododendrons is that of general good behaviour under cultivation. There are a few species, chiefly alpine, which are not always happy in low-lying gardens, and some are a little fastidious in regard to soil.

In stature the species vary from a height of about 50 feet, and a trunk 16 feet in girth, to the smallest tuft-like shrubs, only a few inches high. The leaves are extremely variable in size, the largest being those of *R. Falconeri*, which, according to Hooker, are sometimes 19 inches long by 8 inches wide; the smallest, *R. parvifolium*, *R. ericoides*, and *R. buxifolium*, the leaf dimensions of which are denoted by their names. The flowers vary as much as the leaves; *R. Griffithii* (Aucklandii) having beautiful white saucer-shaped flowers, 6 inches across, and *R. Nuttallii*, a large creamy-white bell, 5 inches deep and wide. In *R. glaucum* they are as small as the flowers of *Kalmias*, whilst in the small alpine species, such as *R. setosum* and *R. nivale*, they are less than a quarter of an inch wide. The arrangement of the flowers varies from a dense conical head, as in *R. arboreum*, to a loose umbel, or to solitary axillary bells. The attribute of fragrance is not uncommon in the Himalayan species, whilst it is general in the hardy Azaleas of North America. By cross-breeding, however, this desirable character has been made much more common, many of the hardy garden Rhododendrons possessing a decided and pleasing odour. The colours of the flowers range from the purest white to rose, red, crimson-purple, yellow, orange, in fact, every shade except pure blue.

There is very little variety in the seeds. The plants produce them freely under cultivation, and it is to this fact that we owe the rich variety and

improvement generally made in the genus by cultivators. Unless the seeds are required, it is advisable to remove the remains of the inflorescence as soon as the flowers have faded, the production of a crop of seeds being a waste of energy, which often affects the health of the plant.

So far as is known, the deciduous species are natives of northern regions, namely, North America and northern Asia, including China and Japan. The whole of those found in the Himalaya and the Malay Archipelago are evergreen. It is remarkable that a solitary deciduous species, *R. flavum*, the Pontic Azalea, should be found in Asia Minor, and another, *R. sinense*, in China, all the other deciduous species being natives of North America. *W. W.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

DENDROBIUM PHALÆNOPSIS, FITZGER. VAR. ROTHSCHILDIANA.*

This is one of the best and the most distinct varieties of this noble plant; we may regard it as a counterpart to the *Statterianum* variety (*v. Reichenbachia*, ser. ii., vol. i., pl. F.). The flowers are fully 4 inches broad, and nearly $3\frac{1}{2}$ inches in height. The colour is snowy-white, with the most tender blush of pink you can imagine; the side lobes of the lip are light pink, with some deeper-coloured lines on the disk. From the merely botanical point of view, this variety is well distinguished by the slender form of the directly lanceolate sepals. The rhomboidal petals and the compressed and by no means semi-globular spur ("subhæmisphæricum," in Mr. Fitzgerald's description). The column is broader than in the type and in other varieties, and shown from the front it is directly rhomboid; but, as we find in the variety "*Statterianum*," already an upwards enlarged column, it is quite impossible to regard this somewhat more enlarged column as a character of specific value. The plant flowered in Lord Rothschild's collection at Tring Park. *Dr. F. Kraenzlin.*

FOREIGN CORRESPONDENCE.

THE CHICAGO EXHIBITION.

AFTER a good many changes, and some disappointing postponements, the great dedication of the World's Fair took place on Friday, October 21. A great many plants were used to decorate the great Manufactures Building, but their effect was lost in the vast space, excepting to those who were seated on or near the platform. Perhaps the most conspicuous feature in the decoration was the hedge of *Salvia splendens* in front of the large Palms and other tall foliage plants which formed the stage setting. One of the most beautiful plants in the grouping was a fine *Livistona rotundifolia* from a private Philadelphia collection. A variety of *Chrysanthemum* plants were used around the galleries and in other parts of the hall. The luncheon tables were decorated with plants of *Grevillea robusta* and *Madame Crozy Cannas*, while a charming arrangement of Pansies, bordered with the bronzy leaves of the Scrub Oak, formed a tracery over the cloth.

So far the largest individual exhibit comes from the state of Pennsylvania; it comprises the largest number of valuable plants yet received. The Washington Botanic Garden has sent a fine lot,

* *Dendrobium Phalænopsis* Fitzger. var. *Rothschildiana*.—Sepalo dorsali oblongo-lanceolato acuto, lateralibus ovato-oblongis basi antice in mentum obtuse conicis postice in pseudocalcar, rectum compressum apice obtusum coalitis; petalis rhombeis antice obtusatis apiculatisque quarta longioribus triplo latioribus quam sepala; lab-lli lobis lateralibus obovatis antice rotundatis convolutis; lobo intermedio minore aquilongio oblongo acuto; disco in fundo lineis 5 rugosis (intermedio minore) instructo; gynostemii pede bilamellato; gynostemio ipso brevi antice energie dilatato a fronte viso fere rhombeo dorso carinato; anthera minuta; fovea stigmatica maxima. Totus flos $3\frac{1}{2}$ poll. altus fere 4 pollic. latus candidus; labellum (præsertim lobi laterale) tenerrime roseo suffusum.

including many rare or little-known plants. *Euphorbia grandidens* is among these; we are supposed to possess but three specimens of this curious *Euphorbia* in America. The Agaves, Fourcroyas, and Cacti from Washington will be used in the projected Arizona garden. So far, very few Orchids have been received, excepting a quantity of freshly-collected plants from the Guatemalan government; there are few varieties of value among them, nor are they likely to become sufficiently established to be of great interest by next year.

The Bureau of Floriculture is often embarrassed by the tender of plants that are really of no value, and of no cultural merit. When these useless specimens are sent some distance unpaid, they provoke exasperation.

One of the horticultural difficulties at the World's Fair is the extremely poor soil of Jackson Park. For the most part it is simply fine lake sand, with a thin covering of black humus on the top; it is too poor for the most unexacting plants, without a great deal of fertilising. Yet, in spite of its poverty, it is an abominably sticky compound in wet weather, and the roads call for a great deal of work before they will be fit for walking in comfort.

The display of *Chrysanthemums* is very good at time of writing. It is confidently asserted that American taste is reverting to the regular globular incurved sorts, instead of the widely irregular types recently in favour, and some good examples of Mrs. L. C. Madeira, a clear yellow; and Mrs. Robert Craig, creamy-white, show the coming form. Mr. Thorpe has a number of *Chrysanthemums* raised from European seed (seedsmen's stock), but the plants are invariably weedy, showing very little promise. The finest crimson among Mr. Thorpe's plants is G. W. Childs, which holds the highest rank among American growers, while among yellows, H. E. Widener and W. H. Lincoln keep high rank. Preparations are being made for an unusual display of *Chrysanthemums* at Jackson Park next year. Arrangement is rapidly progressing in the main horticultural building, with the intention of opening it to the public as a winter garden next month. *E. L. T. Chicago, U.S.A.*

NOTES FROM GERMANY.

Speaking of novelties in general, English horticulturists are, as we continental people admit, to the fore in the profession, but as far as regards trees and shrubs for the open air, some pre-eminence may reasonably be claimed for a few of our own countrymen. In perusing the catalogues (1892-93) of Dr. Dieck, National Arboretum at Zöschchen, and of Mr. L. Späth, Rixdorf, Berlin, two eminent promoters of German dendrology, we meet with a considerable number of species and varieties new to cultivation, and either directly introduced from their native country, or raised in their establishments by these two gentlemen. The readers of the *Gardeners' Chronicle* will, perhaps, remember the report of the National Arboretum at Zöschchen given two years ago by the writer of these lines; whilst a very detailed account of Mr. Späth's nurseries was published in this journal some time ago. Beginning with Dr. Dieck's novelties, the following are, perhaps, the most interesting:—

Acer pictum, Thbg., var. *Mono*.—Professor Dippel classes *A. mono* and *pictum* as the same species, but the forms received from Yezo under these two names show sufficient difference to claim, at least for *A. mono* the distinction of being a distinct variety. Evidently, the many forms of *A. pictum* are quite as characteristic of eastern Asia as those of *A. saccharinum* of eastern North America.

A. Trautvetteri, Medwed.—There is good reason to doubt if this Caucasian species is identical with *A. insignis*, Boiss., and it may be preferable to consider it as a distinct variety, which also is easily confounded with the common *Sycamore*.

A. Trautvetteri, Medw., var. *erythrocarpa*.—A variety from the same locality, distinguished by the splendid red colour of its seed wings, which renders the tree in autumn particularly beautiful.

A. mus occidentalis, Dipp., n. sp.—In Dr. Dieck's

last catalogue we meet with this Alder under the name of *A. rhombifolia*, Nutt., a Columbian species. Since then Professor Dippel has described it as *A. occidentalis*. A very beautiful tree, of fast growth, true from seed.

Andromeda japonica, Thunb., v. *foliis albo-variegatis*, Fr. et Sav.—A most charming and elegant variety.

Calyptrorhiza (*Diervilla*) *Miäddendorfsana*, Trautv. et Mey.—The flowers, of a sulphur-yellow colour, look like those of a Gloxinia. They are very beautiful, and far superior to those of other *Diervillas*. The plant requires a somewhat peaty soil.

Chiogenes hispidula, T. et Gr.—This nice little plant, with a creeping habit and white berries, was collected in the marshy woods of Michigan, and is liable to be mistaken for an *Oxycoccus*.

Colutea melanocalyx, Boiss.—Seeds of this very quick-growing species were received from Smyrna and the Pontus, and we may here remark that young plants formed in one year pretty shrubs, flowering abundantly.

Cytisus Schipkaensis, Dieck.—A low-growing plant, scarcely 1 foot high, with pure white flowers. Discovered at the summit of the Shipka Pass, where *Syringa vulgaris* and *Prunus Lauro-cerasus* also abound.

Diervilla florida, S. et Z.—Seeds from eastern Asia produced plants, which in almost every respect differ from all known forms of the above-mentioned species.

Fraxinus elonza, Dipp.—This Ash resembles equally *F. tamaricifolia* and *F. angustifolia*, and is said to come from Italy.

Gordonia lasianthus, L.—A Ternstroemiaceous genus not yet represented, as it seems, in the parks of Europe. Growing in the Alleghanies, this species will prove hardy, even in the German climate.

Magnolia Fraseri, Walt. (*auriculata*), Lam.—Erroneously, the name of this interesting species is often to be met with in catalogues, but almost in all cases we have to do with one form or other of the Japanese *M. obovata*. The high regions of the Alleghanies are the home of *M. Fraseri*, which in its flowers resembles *M. glauca*, but is much hardier, and less particular as to soil and locality.

Polygonum Baldschuanicum, Rgl.—A most luxuriously-growing and very ornamental woody climber from eastern South Turkestan.

Prunus armeniaca, L., *spontanea*.—As the spontaneous form of *P. armeniaca*, Dr. Dieck only knows a forest shrub of south-western Russia, especially of Bessarabia, which shows the short-pointed leaf of our cultivated Apricots. (The original country of the Apricot extends, according to A. De Candolle, in his *Origine des Plantes Cultivées*, from north-western India to China; in other parts of Asia only naturalised forms of it can be found.)

Prunus Pseudo-Cerasus, Lindl., *spontanea*.—Of the Sakura of Japan, we have had, up to the present time, only the cultivated forms, and Dr. Dieck now offers plants of the typical form, distinguished by larger leaves.

Prunus Salzeri, Zdarek.—Belonging to the Padus group, with a yellowish-white fruit, and said to be true from seed. Discovered three years ago in Carinthia and Styria.

Pterostyrax corymbosum, S. et K.—The *Ovatsya* of Japan, a mountainous plant; whilst the other species, *P. hispidum*, the *Asagara*, introduced a good while ago, grows in the plains.

Quercus alnifolia, Poeck.—This Oak, remarkable for its distinctness and beauty, is probably a survivor from a long past period; it has a very restricted habitat, the Troodos Mountains of Cyprus. The variation of the foliage is almost unlimited, but a form with leaves like a *Camellia* prevails. The old leaves are commonly covered underneath with a splendid golden pubescence. Dr. Dieck owes this interesting introduction to the present Governor of Cyprus, and in the introductory remarks of his catalogue he fully recognises the valuable services Lord Lytton has rendered to botanical enterprise.

Quercus macedonica, A. DC.—A magnificent Oak of the *Cerris* group, bearing large edible acorns.

Robinia Neo-Mexicana, Gray, var. *luxurians*, Dieck.—This beautiful form inhabits the Colorado Plateau and the Southern Rocky Mountains. The typical form has a dwarfish habit. This variety grows much higher, and its racemes are mostly branched. In



FIG. 102.—CHRYSANthemum CARINATUM, FLORE PLENO.
(SEE P. 670.)

Züschen it flowered twice a year, first in June, and then in August on the youngest branchlets.

Rosa glutinosa, Sieb. et Sm., var. *Yarmalensis*, Dieck.—A very neat, small-leaved variety, from the mountains of Smyrna, where at a height of 1950 to 2294 feet it grows in very rich soil. This shrub, not



FIG. 103.—LOBELIA ERINUS GOLDELSE. (SEE P. 670.)

much higher than 2½ feet, is characterised by its strong uncinat spines, very similar to those of *Rosa Serafini*. Its comparatively large flowers are of a whitish-red colour. A valuable acquisition for the rock garden.

Salix Hoyeriana, Dieck.—Lieutenant Hoyer, Dr. Dieck's collector in British Columbia, discovered this highly-interesting Willow in the higher mountain regions. It evidently represents an American

parallel to the Siberian *Salix pyrolæfolia* (*sabulosa*, Turcz.). Its chief peculiarities are that the plant lies quite close on the ground, just as if bent down. The leaves are roundish-oval, short pointed, and light green.

Zelkova japonica, Dipp., var. *Verschaaffeltii*, Dipp.—In Belgian catalogues this elegant tree of small size appears as *Ulmus Verschaaffeltii*, and Dr. Dieck formerly announced it to be *Planera japonica*.

Besides these briefly-mentioned novelties, the Züschen catalogue contains a great many more, but for English readers we think we have made a sufficient selection.

Coming now to Mr. Späth's new acquisitions, the following deserve special notice:—

Acer hybridum.—Of this very interesting Bastard Maple, seldom to be met with in commerce, Professor Dippel rediscovered an old medium-sized tree with a compact roundish crown. The dense and dark green foliage is somewhat peculiar.

Acer truncatum, H. bot. Berol.—Seeds from China produced a good many young plants. Flowers and fruit are still unknown, but there are good reasons to believe that they belong either to Bunge's species of the above name, or are closely related to *A. pictum*, Thbg. The tree has dense light green foliage, and is of vigorous growth. Leaves, long, petiolate, glabrous, five-lobed; lobes acuminate; margin irregularly undulate and crispate, with a few small or larger teeth.

Fagus sylvatica fol. striatis, Bose.—This beautiful Beech was discovered many years ago in a forest of Hessa. Soon after opening, the leaves show a quite regular golden striation, parallel with the nerves, and this striking appearance lasts till the leaves fall off in autumn. Thanks to the efforts of Professor Dippel, this long-known tree has now been introduced in our gardens.

Fagus sylvatica Zlatia, Späth.—The golden Beech of Serbia was discovered by Professor Dragashevitch in the mountainous district of that country, and probably originated from seeds. A splendid ornament for our parks is this fine tree, with a circumference of some 5 feet, and very dense foliage; it will take a prominent place amongst the green-leaved varieties. The native name is "Zladna bukwa," that is Golden Beech; and to mark his delight in meeting with such a magnificent tree, Professor Dragashevitch has named it *Zlatia*, a playful expression, meaning the golden-haired sweetheart.

Ilex decidua, Wald. (*Prinos decidua*, De C.).—Mr. Späth obtained this deciduous Holly from seed, which were received from the Arnold Arboretum.

Populus euphratica, Oliv.—Some ten years ago, Mr. Koopman sent young plants of this species from Turkestan. At first they grew well, especially one specimen in the Horticultural school at Potsdam; but by some accident or other, they were all lost. Mr. Späth has now succeeded in getting another lot, and so we may hope that this tree, with such an interesting history, will become established in our gardens. Modern commentators prove this to be the Scriptural "Willow," upon which the Jews hanged their harps, since *Salix babylonica* has not been seen growing by the streams of Babylon. The diversity in the foliage of this remarkable tree is most striking; one would describe it as a Poplar with Willow leaves, in looking at the young trees, which at first only show the small glaucous foliage of the purple Willow. But this is only one extreme of the variable foliage, which assumes many forms, until it finally puts out the large kidney-shaped leaf of the *Cercis*. In its native habitat, the sand-steppes or the vicinity of streams, this species shows a great indifference to the nature of the soil.

Salix blanda, Anderss.—According to Professor Dippel, the broad-leaved Weeping Willow was discovered in the vicinity of Hanau. Some botanists consider it a cross between *S. babylonica* and *S. fragilis*. The branches and twigs are elegantly arching, and covered with leaves similar to those of *S. babylonica*, but much longer and larger.

Sorbus alnifolia, Wennig.—Described and figured

in the *Gartenflora*, 1892, p. 282. The introduction of this small tree is due to Dr. Nagai, of Japan, and it will certainly be appreciated as a good acquisition for our shrubberies.

In conclusion may we be allowed to say a few words in reference to the German Dendrological Society, which has just issued its first circular. There is no doubt that dendrology becomes more and more acknowledged as a branch of systematic botany; the works of the late Professor C. Koch, and of the late, Mr. W. Lauche, have done much in this way, and the more recent publications of Professor Dippel and of Mr. L. Beissner, the latter especially on Coniferous plants, will be welcomed by all interested in this matter. The new society proposes to popularise this science, a journal is to be founded, meetings will be held regularly, and the names of the gentlemen at the head of this new enterprise give us the best guarantee that it will be no vain one, and that gardeners and amateurs alike will profit much by it. *Dr. Edmund Goetze, Botanic Garden, Greifswald.*

CONTINENTAL NOVELTIES.

MR. LORENZ, of Erfurt, sends us illustrations of novelties to be sent out by him during the present season.

CHRYSANTHEMUM CARINATUM (fig. 102).—The varieties selected are commended on account of the perfect double condition and brilliant colouring of the flowers, which ranges from white to yellow, red, and purple.

LOBELIA ERINUS, "Goldelse" (fig. 103).—A compact variety with golden-yellow foliage.

MIGNONETTE, LORENZ'S IMPROVED *VICTORIA* (fig. 104).—The height is said not to exceed 6 inches, and the reddish flowers larger than those of the old *Victoria Mignonette*.

CHRYSANTHEMUM CUTTINGS.

WHEN the cuttings should be inserted, in order that they may produce the finest plants and blooms, is a question upon which cultivators differ somewhat. The common-sense view of the matter seems to point to the conclusion, that to give a plant a long season of steady growth is a decided advantage. It is admitted generally that *Chrysanthemums* abhor heat in all stages of their growth. When early propagation is practised, there is ample time for a steady growth in a cool temperature; it has the best possible chance of becoming solid through the proper maturation of the tissues of the plants, and without maturation the best results cannot be secured, especially in the case of the incurved section, where solidity of the blooms is most essential. Plants that have extra strong gross leaves and stems, quite green and soft to the touch in September, never produce blooms of high quality; they may be large in diameter, but they lack depth and solidity.

In the case of growers residing in the northern counties, late propagation is a decided disadvantage; the wood of late-struck plants never ripens thoroughly. Early propagation there, for the reasons stated above, is most essential for plants intended to produce large blooms, whether for exhibition or home use, and for specimen trained plants, where quantity as well as quality has to be considered. I do not, however, say that the cuttings must be inserted on any particular day or week, because I know such a hard-and-fast rule is not practicable; indeed, the cuttings of some varieties cannot be procured when required. In the case of bush plants, where quantity rather than quality is the first consideration, the cuttings need not be inserted so early. The end of January will be a good time for this section. In the two former instances, the month of December is a good time; but if longer deferred, much valuable space, which could be better occupied, has to be taken up for storing the old stools. A commencement should be made with the weak-growing sorts, such as Lady

Hardinge and Princess Beatrice, for example, and the weaker-growing sorts of Japanese.

The best cuttings are those taken some distance from the stem of the old plant, and about 3 inches long. Such cuttings are termed suckers; why they are best is, that coming from a distance away from the old stem, they are more likely to make clean growth, and less likely to form premature bloom-buds, which causes a check to the plant every time this takes place, and the fewer checks a *Chrysanthemum* plant receives from the time the cuttings are inserted until the blooms are produced the better.

Some attention should be paid to the cutting itself; avoid those which have bloom-buds at their apex, for these are of little use, and are certain to stop growing very early after they have been inserted. The cuttings should be cut square across below a joint; remove the lower pair of leaves. The kind of soil which some persons employ to strike the cuttings in is not of the best; they appear to think that anything will suffice, and very often use nothing but the refuse soil from old plants of *Chrysanthemums* which have been highly fed—the consequence is, that the soil is soured, and not at all good for the production of new and tender roots, especially when the sorts are of weakly growth.

None but new soil should be employed; there is nothing better than equal parts of loam, leaf-mould, and sharp silver-sand, well mixed together, and passed through a half-inch sieve. With a view of economising time and space, some persons insert two, three, and sometimes four, cuttings around the edge of a 3-inch pot. There is no reason why they will not strike quite as readily in this manner as any other, but there is another and a great objection to the plan—that of giving a check to the plants when dividing them for transferring to single pots, as they eventually must be. Single pots, 2½ inches in diameter, are much the best; these should be long and narrow, as the roots strike directly downwards, and a larger number of such pots can be arranged in a given space than others of the same capacity, wider, but not so deep. The pots should be perfectly clean, for in turning plants out of dirty pots, the roots cling so tenaciously to their sides, that many of them are broken in the action of removing them. If clean pots have been used, the plants are shifted with their roots intact, and experience not the slightest check from the operation. One crock is sufficient drainage for each pot, and it should be covered with a little rough decomposed leaf-soil; or, what is handier, the rougher portions taken from the compost by passing it through a fine sieve. Fill the pots firmly with the soil, and on the top sprinkle a little sand, to be carried down to the bottom of the hole with the dibbler for the cuttings to rest on. The soil should be pressed firmly about the cutting, particularly its base, and a gentle watering given through a fine rose waterpot to settle the compost.

The best position to strike the cuttings in is the next consideration. Some advocate bottom heat, but this is neither necessary nor advisable, the application of heat at this stage tending to weaken the cuttings. A sturdy growth is desirable, and bottom heat is not the best means of securing it. Some prefer a cold frame, but, although frost will not kill the cuttings, while they are in such condition, for perhaps a fortnight or more, they are not making roots, and much valuable time is lost. If they are protected from frost by an outside covering, which at times must be left on many days, the leaves are liable to damp. The best method is to put them under handlights, or in a propagating frame placed in a house having a temperature of from 40° to 50°. It matters little whether it be a vinery, Peach-house, or greenhouse, so long as the cuttings are fairly near to the glass, and of the temperature named. If the lights are placed on a lattice stage, means must be taken to make the bottom air-tight; first cover the stage with slates, and then a layer of coal ashes, for securing a cool moist foundation. The lights must be kept closed until roots are formed, except during an hour in the morning to dispel excessive moisture, and in the evening the inside of the glass should be wiped dry with a sponge. All these may appear

trifling details, but the small percentage of losses through cuttings damping will be the best proof of the wisdom of such treatment. Shading, as a rule, will not be required, unless the position is a very sunny one, but if the leaves show a tendency to flag they must be shaded. In a month many of the cuttings will be rooted, the strongest growing varieties especially so. A little air should then be given by tilting the lights a little on one side, and increasing the ventilation until they can be safely removed. While some need air, the leaves of others will flag, some varieties requiring more time to root than others. These should be removed to a frame by themselves, where they can be kept closer than those which do not flag, and that require more air to retain that stocky growth which is indispensable. Through keeping the frames closed but little water is required during the rooting process, yet the soil must be kept moist for the support of the cuttings or plants.

When the cuttings are well rooted, and the roots are running on the outside of the soil, they should be removed from the frame to a position nearer the glass. Where a permanent shelf is not at hand, a temporary one can easily be made by suspending a 9-inch wide thin board to the rafters by means of screws and wire. If a groove is made on both sides of the upper surface of the shelf it will act as a conductor to run the water off to one end, which can easily be done by allowing a slight slope in fixing the shelf. Any plants standing under the *Chrysanthemums* are not then splashed by the water given to the plants overhead. *E. Molyneux.*

OUVIRANDRA FENESTRALIS (THE LATTICE-LEAF PLANT).

WITHOUT doubt, this is the most beautiful of all submerged aquatic plants under cultivation. More especially does this apply to plants that are in a flourishing condition, and where graceful and delicate leaves are considered as the standard of perfection. The peculiar leaves are unique, though some plants have perforated leaves, as *Monstera deliciosa*; but these openings are only scattered here and there over the surface, while in the plant in question we have numerous small openings of great regularity, seeming to obliterate the whole of the cellular tissue. In examining a number of young leaves, it is found that many of the openings which are present when the leaves have attained their full size, are closed and filled with parenchymatous tissue in early stages of their growth. One naturally enquires what part these numerous openings play in the economy of the plant. It may, perhaps, be for the purpose of allowing the light to reach those leaves which are not so much favoured as those near to the surface of the water, an element of which they would get but little of, if it were not for these openings, as the leaves are spread out horizontally.

It is not in every establishment where this plant is grown that it can be said to thrive; the finest specimens that I have had the pleasure of seeing were those in the Edinburgh Botanic Gardens, and those of Chatsworth, though I make no doubt that there are many places where it is equally as well-grown as in the above-mentioned gardens. In the Sheffield gardens we have some thriving specimens with leaves 16½ inches in length, and 4 inches broad.

Those who are desirous of cultivating this interesting plant should procure a vessel some 2½ feet in diameter, or upwards, and about 18 inches in depth; a wooden tub answers the purpose admirably, and in which they appear to thrive better than in any other of different material. It must be placed in a house which is kept at a stove temperature, with a minimum of 60° to 65°, and may stand upon the floor of the house or stage, shading slightly from the sun during the brightest part of the summer. It is also important that the water in which it is grown be kept at a minimum temperature of 60° as near as can be, the maximum should not exceed 75°. Perhaps the most important item of all is a good supply of soft water, and where the natural supply is not of this character, rain water only should be secured and

used, as in water which contains much sulphate of lime this plant cannot flourish, but grows less and less, eventually dying outright. The leaves of the plant require to be kept clean, and this end is secured under natural conditions by the plant growing in shallow water in running streams. Out of many plans that I have tried for keeping the water in motion, and so preventing the confervæ from becoming attached to the leaves, none have succeeded better than having a small vessel of water placed several feet above the tub in which the specimen is growing, and to which a small tap is fixed, which is regulated so as to let out a continual dropping into the tub of some forty or fifty drops per minute. This, with a syringing overhead two or three times a day, and the plant occasionally gone over with a painter's ordinary sash tool, will be found sufficient to keep it in a very cleanly condition. *Ouvirandra fenestralis* is the species which is in general cultivation, the leaves of which are oblong in form, very rarely exceeding 1 foot in length, and 3 inches in breadth, with an obtuse apex; but there is a form of this species (or so it appears to me) with larger leaves, broadest towards the extremity, and with a retuse much indented apex. Mr. Thomas, of the Royal Gardens, Frogmore, writing to me from Chatsworth respecting this plant, says that an interesting point concerning it is that it does not flower, while *O. fenestralis* flowers, and propagates itself readily from seed, which fact I am able to endorse. At Chatsworth this non-flowering species is grown under the name of *O. Berneriana*, but it is impossible for it to be that species, as the leaves of this plant are much longer and narrower than even those of *O. fenestralis*, and the meshes closer together. *O. Berneriana* is a plant I have never seen in cultivation, but only as dried specimens. I enclose you a photograph of *O. fenestralis*, and the varietal form which I propose calling *retusa*. A friend of mine sent me a specimen some time ago of *O. fenestralis* bearing two leaves upon one stalk, spreading out horizontally, with the inner margins slightly overlapping; while I gathered a specimen of a double leaf from a plant of *O. fenestralis* var. *retusa*, in which one leaf lies upon the other in a superimposed condition.

O. fenestralis var. *retusa* bears very handsome foliage, and in appearance is preferable to the species. It is a native of Madagascar. The natives collect its fleshy farinaceous roots as an article of food, calling the plant, on this account, *Ouvirandra*, which means literally Water Yam, and this is the source of the generic name. *W. Harrow, Botanical and Horticultural Society's Gardens, Sheffield.*

THE ROSERY.

NEW ROSES OF 1891-92.

THE standard of Roses is so high now, that a new Rose, to be of any special merit, must indeed be a good one; or at any rate, something quite distinct from existing kinds. New Roses are readily secured in quantity, but really "decided acquisitions" are rare. It is my object to point out the few best; and, although I have not grown and flowered all of these, I have a large number of them, and have seen fair examples of the remainder. In the majority of cases, the raiser's description is far too glowing. It would seem that they know old growers will discount their descriptions considerably, and so they put them higher than ever in order to catch old as well as new growers. I am alluding more particularly to the French and German growers as a body. Our home raisers generally give a fair description when one remembers they are praising their own productions and pets.

Marchioness of Dufferin (A. Dickson & Son) is a very large Rose, of fairly good shape, having reflexed petals, with a very slight shade of yellow at their base. The main colour of the flower is a beautiful rosy-pink. A good grower.

Margaret Dickson (A. Dickson & Son) is one of

the best and most distinct Roses sent out. The petals are pure white, except for a very pale flesh centre. It is somewhat after the form of Baroness Rothschild and Merveille de Lyon, but is fuller than either, and a much purer white than the latter.

Jeannie Dickson (A. Dickson & Son) is one of our grandest cupped Roses; the petals are large, the flower well built up, and with a high centre. Colour, a bright rosy-pink; very pleasing, and an exceedingly free bloomer.

Mrs. William Watson (A. Dickson & Son) is pale pink, with a silvery back to the petals. I understand it to be a cross between Madame Vidot and Merveille de Lyon, and it has every appearance of being a true cross between these two.

T. W. Girdlestone (A. Dickson & Son) is thoroughly distinct, and may be described as a brilliant red, with a slight shading of lake at the base of the petals. It is a good grower, good shape, and very sweet-scented.

This firm, Messrs. A. Dickson & Son, of Newtownards, Ireland, has sent out some grand Roses of late. Among them I may mention Mrs. J. Wilson, Ethel Brownlow, Lady Helen Stewart, Lady Arthur Hill, Caroline d'Arden, and Earl of Dufferin. They also raised Mrs. W. G. Grant, the Gold Medal Rose of 1892. This is really a grand Rose, but is unfor-



FIG. 104.—MIGNONETTE, LORENZ'S IMPROVED VICTORIA.
(SEE P. 670.)

tunately, sold to an American firm, so that I am afraid we shall not see it again until 1894 or 1895. However, Messrs. Dickson have several more grand Roses in hand, some of which were shown as "seedlings" among the new Roses at Chester. I also hear a grand account of Marchioness of Londonderry.

Elise Fugier (Bonnaire) is a good button-hole Rose, having long-pointed buds in the way of Niphetos, but of a pale lemon colour.

Souvenir de Madame Sabbyrolles (Bonnaire) is another acquisition to the button-hole class. It is apricot, pink, and yellow, suffused into one another, and is more full than the former variety.

Caroline Testout (Pernet & Ducher) has pleased me very much, and may be briefly described as a salmon La France. It is very pretty, and makes a grand pot Rose.

Danmark (Zeiner-Lassen & Dithmer) is a little too much like La France as far as the bloom is concerned. The growth, however, is distinct.

Gustave Regis (Pernet & Ducher) has long pointed buds of canary-yellow, with the deep apricot-tint towards the centre that is found in Sunset.

Pink Rover (Wm. Paul & Son) possesses the same delicate colour as the old Maiden's Blush, with a little deeper centre. It is large, full, and rather a flat flower.

Triomphe de Pernet, père (Pernet, p.) is an excellent grower, a free bloomer, and has a long pointed bud of bright red colour. It will make a grand garden Rose.

Crimson Queen (Wm. Paul & Son) is a fine

scarlet with velvety shadings, and forms a large globular flower.

Dowager Duchess of Marlborough (G. Paul & Son), pure silvery rose, good cupped form, very sweet, and a good grower.

Waban (E. M. Wood), a sport from Catherine Mermet; many shades deeper in colour—in fact, almost red; in other respects, it seems almost as good as C. Mermet, but I do not consider it so strong a grower. It may improve in this respect when the strain of excessive propagation is removed. The Bride has turned out a much stronger grower than was at first imagined, and I have the same hopes of Waban.

Medea (William Paul & Son), is a high-centred flower of globular form; lemon-yellow, with a deeper centre, a good grower, and very promising.

Mrs. Paul (G. Paul & Son) is one of the finest Bourbon Roses we have. The flower is large, and has thick petals, that are beautifully reflexed; colour blush-white, with a soft rosy-peach shading—a grand Rose, and thoroughly distinct.

Bruce Findlay (G. Paul & Son) is much like a China in its free and autumnal-blooming character; the flowers are bright crimson, large, and well-shaped.

Salamander (Wm. Paul & Son) changes its colour during the season, being deeper towards the end of the summer. It is a pure scarlet-crimson in the early part of the season. The flowers are well built, and of fine substance. It gained the National Rose Society's Gold Medal in 1890. Has very handsome foliage, and a vigorous constitution.

Christine de Nouë (Guillot), light purplish-red, with deeper shading—very sweet.

Spenser (Wm. Paul & Son) is one of our best new Roses; beautiful satiny-pink in colour, much deeper than Baroness Rothschild, and of somewhat similar growth. It is large and very full; quite distinct.

Climbing Perle des Jardins (Henderson) is a grand yellow climber. The flowers are similar to the normal variety, but the growth is much more vigorous, and it promises to become as great a favourite as Maréchal Niel. It has a distinct advantage of the latter variety, as it flowers in an equally perpetual manner as the old "Perle." Under glass, or for south walls, it is grand.

The following is a list of the best Roses brought out in 1889-90:—Souvenir de Gomot, Margaret Haywood, Marchioness of Lorne, Madame Renahy, Lady A. Hill, J. D. Pawle, Gustave Piganeau, Madame Carnot, La France of '89, Augustine Guinoiseau, Souvenir de S. A. Prince, Sappho, May Rivers, Kaiserin Friedrich, J. B. Varrone, and Cleopatra.

All of the Roses in this list are good, and distinct from older varieties.

The four best Roses that I know of, and that have yet to come out, are Mrs. W. G. Grant, Marchioness of Londonderry, Princess May, and Mrs. Harkness. *A. Piper.*

COLLECTING BRIAR STOCKS.

The present is a good time to collect stocks of the Dog-Rose for budding next July and August, and grafting this winter in heat. Select those with clean stems three-quarters of an inch in diameter, and that are not hide-bound. Trim them of side-shoots, and behead the roots somewhat, and after lopping the stock at various heights, plant them in rows 4 feet apart, and at 6 inches apart in the rows. After the planting is finished, drive a stoutish stake into the ground at each end of the row, with others (according to the length of the rows) between; then stretch some stout tarred string from stake to stake, and tie each Briar thereto; and finish off with a mulch 3 inches thick of leaf-mould or half-rotted dung. *H. W. Ward.* [Roses can be grafted on potted stocks put into mild heat at the new year, the grafts usually flowering in April and early May, when they may be stood amongst the greenhouse occupants to open and show off their blooms. The plants also flower a second time, about the time that their fellow stocks that were planted out are being budded.]

The graft is as secure as the bud, and quite a year is saved. In grafting, slip, whip, or wedge methods are adopted, and the end of the stock and at the scion are tipped, as well as the point of union, with grating-wax, Hommele Fort. Ed.]

ORCHID NOTES AND GLEANINGS.

CATTELEYA ALEXANDRE.

THIS remarkable *Cattleya* was described early in the present year (*Gardeners' Chronicle*, 1892, pt. i., p. 522) from a dried specimen, and living plants were introduced by Messrs. Linden, of Brussels. It is interesting to record that it has now flowered in more than one collection. A first flower expanded with Messrs. Linden on October 9, which was followed by one at Kew about a fortnight later. Others have appeared with Messrs. Linden, one of which was exhibited at a meeting of the Orchidéenne, of Brussels, on November 13, and unanimously awarded a First-class Diploma of Honour. One of these flowers I have had the pleasure of seeing, and can say it confirms the indications of colour originally stated. The sepals and petals are both excessively undulated, in which respect they remind one of a *Schomburgkia*, and the colour is a light coppery-brown, recalling *Lælia grandis tenebrosa*. This flower, however, showed no shading off to violet on the margins. The lip is much like that of *Cattleya Leopoldii*, both in shape and colour, the front lobe being of a light rose-pink shade, and the acute side-lobes pale blush. The Kew flower had light green segments spotted with brown, though identical in other respects, thus indicating a certain amount of variability. Although not yet established, as is abundantly evident, it gives promise of being a great acquisition when fully established. The species has since also been introduced by Messrs. F. Sander & Co., of St. Albans. R. A. R.

ONCIDIUM SAINT LEGERIANUM.

This Orchid, which I discovered in Brazil, was brought to London last May, and some specimens were sold by Mr. Stevens to Mr. Sander, who grew them at St. Albans, and the plant was also shown to Mr. Rolfe, who recognised it as being new, and described it in the *Gardeners' Chronicle* on the 12th of last month. Mr. Sander showed the plant at the Royal Horticultural Society on November 1, where it attracted considerable attention. *Oncidium Saint Legerianum* is easy of cultivation. I discovered it in a district where the winter temperature falls to 2° and 4° C. below zero; and where, for six months of the year, it is covered with water, while for the rest of the year it is completely dry. The Indians fire the plains to raise pasturage for their animals. I was obliged to treat with the Indians before I could bring away the few specimens remaining, which unfortunately amounted only to about 3,500 in number. I transported these to Rio Janeiro, and there, under my care, they bloomed readily, one clump of seven or nine bulbs bearing forty to sixty flowers. Such an acquisition may supersede *Odontoglossums* as cut flowers, being of easy culture in a cool-house in Europe. There are four varieties of it known, and which render it acceptable both to professional and amateur horticulturists. It will surpass my *Oncidium Jonesianum* which I found in Central Paraguay, and which requires greater heat. *Cyrtopodium St. Legerianum*, which I also discovered, grows in the same latitude, as does *O. Jonesianum*; it flowers badly in Europe, because it has too much moisture. Its habitat is Upper Paraguay, on the frontier of Matto Grosso, Brazil, on the mountains and tree-tops; while *O. Jonesianum* comes from Central Paraguay, a warm dry climate, which cannot easily be imitated in European houses, wherein the plants live only two or three years; *Oncidium St. Legerianum*, on the contrary, can endure both damp, drought, and coolness. My thanks are due to Mr. Rolfe for naming the Orchid after me, and to Mr. Sander

for growing, flowering, and showing it. *Vicomte de Saint Léger*.

LÆLIA ANCEPS "MORADA."

Under this name the Liverpool Horticultural Company, Garston, Liverpool, has for several years sold importations which, while producing the largest and richest-coloured forms in cultivation, have not contained any indifferent varieties. A delicately-beautiful flower is sent, of which Mr. Cowan says:—"It is very near the one sold by us some years ago, and which was afterwards named *L. a. Amesiana*." The flower has a labellum with the three raised orange-coloured keels down the centre, and the same rich violet-crimson front lobe as *L. a. Amesiana*, but the purplish-lilac tinging on the nearly-white sepals and petals is more pronounced than in that variety. It is a variety of great beauty, and the specimen is in the collection of W. Wells, Esq., Broomfield, Sale, near Manchester. J. O'B.

CYPRIPEDIUM ALBERTIANUM, J. Hye.

A very fine hybrid obtained from *C. Spicerianum* × *C. insigne* Wallacei. Dorsal sepal very large, round, orbicular in form and prettily undulated, foundation white, two-thirds of the centre speckled with reddish-violet, the central vein of a deeper violet than are the spots or blotches in the centre, the remaining third of the border snow-white, the base of the sepal green, speckled with sepia. The lower sepal is greenish-white in the centre and base, the border and the tip are milk-white, slightly lined and spotted with clear violet. The petals are moderately long, horizontal, much undulated, at the base golden yellow almost covered with chestnut-brown; the tip of it and edges are fawn-coloured, the background and petals covered with many spots of clear sepia. The lip is very open, golden-chestnut above and bronze-green underneath as well as at the extremity, the interior is also much spotted. Staminate way round the edge, translucent in the centre, and round the column creamy-white, surmounted by a large patch of chrome-yellow. A very sturdy hybrid with fine foliage moderately long, deep green, much variegated with blackish-brown round the base of the leaves. Floral scape erect, sturdy, and black. A decided acquisition. The first flower opened on October 25, 1892. The hybrid was raised by the well-known amateur orchidist, M. Jules Hye, of Ghent.

FINE SPECIMEN OF RENANTHERA LOWI.

A plant with five racemes, 6½ feet long, is now blooming with M. R. Lemoine at Lille; four others of equal beauty have just finished blooming. I also saw a *Cypripedium Chamberlainianum*, bearing a small but very pretty bloom. Ch. de B.

DENDROBIUM MACCARTHYI.

This is "rather a slow grower, and requires considerable care, in order to keep it healthy. The temperature of its native habitat is said to be very equable, and to range between about 24° and 30° Centigrade (75° to 86° Fahrenheit), and throughout the year showers are sufficiently numerous to keep delicate Ferns quite fresh and growing, while during the rainy season, from May to about August, the rainfall is abundant. These circumstances indicate the conditions under which it must be cultivated; it should receive plenty of heat, light, and water. After its growths are finished, which is often rather late in the season, it should be removed to a somewhat cooler and drier situation, so that it may have a few weeks' rest. Care, however, must be taken to avoid letting the compost become too dry, so as to prevent the plant from shrivelling. Dr. Trimen, the present Director of the Botanic Garden at Peradeniya, states that this handsome Orchid is becoming very scarce, and will soon be extinct; but it is to be hoped that steps may be taken to prevent the occurrence of such a calamity. Ceylon has not a large number of handsome native Orchids, and the extermination of the best of them can surely be prevented if proper steps are taken before too late." *Lindonia*, November, 1892, p. 29.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

ADIANTUMS.—If these plants have been grown under cool treatment during the summer and autumn months, the fronds will now be in a hardy state, and will last much longer when used in a cut state than if grown in a high temperature. Plants which are at rest will require less water at the roots, and a high temperature at night should be avoided. For a supply of plants and fronds for decorative purposes during February and March, the required number of plants should be placed in a low warm structure. If possible, plunge the pots in a bed of cocoa-nut fibre, where a gentle bottom-heat is at command. Those plants should be selected which have been cut, and been kept rather dry for a few weeks. Such plants as these will quickly start away, and when the necessary growth has been obtained, remove them to a cooler house, to prepare them for the purposes for which they will be required. By starting a portion of the stock at intervals, according to the demand, a constant supply of plants is always at hand. Keep a sharp look-out for slugs, or they will soon damage the young growths.

CHRYSANTHEMUMS.—Before the time these lines are in print, the majority of these will be past their best, and should be cut down to within a few inches of the surface of the soil, and afterwards removed to pits or a cool Peach-house, safe from frost. Some varieties are very free in throwing up suckers or shoots from the base of the plant; in such cases these should be thinned out, so that those which are left may become stronger. The variety *Boule de Neige* is undoubtedly one of the best for late work, and when a quantity of bloom is required until the new year comes in, it should be grown freely.

BOUVARDIAS.—The night temperature should range between 50° and 55°, with a corresponding rise by day. Keep the heads of the plants well up to the roof glass, admitting air on all favourable occasions for a few hours, to prevent the flowers being injured by damp. Succession plants should be thoroughly looked over before the flowers expand, and should any fly be detected, they must be thoroughly cleared off, for if allowed to make headway, they quickly disfigure the blooms.

TROPÆOLUM BALL OF FIRE.—From this time, and all through the winter months, this plant will continue to give quantities of its bright scarlet flowers, which at this season of the year cannot but be welcome. A good compost is three parts of fibrous loam, one of leaf soil, and a little sharp sand. Young plants which are occupying 5 and 6-inch pots, and are well-rooted, may be shifted into 10 or 12-inch, merely taking away the old drainage from the bottom of the ball. Give careful watering until the roots have entered the fresh compost. This plant is most useful for training up pillars, or for the rafters of a warm greenhouse or conservatory, allowing the young growths to hang about loosely, which tends to show off its scarlet coloured flowers to a better advantage.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

LIFTING FRUIT TREES.—This kind of work is best when finished off as soon as possible, although with care the work may be carried out at any time during the winter in mild weather; but the results from late lifting are seldom very satisfactory. The lifting of large trees, as was remarked in a previous calendar, to make sure of success, should be prepared during two years previous to removal. In commencing a job of tree lifting, take out a trench at 4 to 6 feet distant from the stem, and to a depth of 2 to 3 feet, and then by degrees dig down and undermine the mass of roots till they are exposed, then with a keen knife pare off such as have been damaged during the progress of the work, and relay the roots on a layer of good soil well trodden to a firm condition, and fill in above them with some of the same, and finally with the staple soil, compacting the soil as it is thrown in upon the roots a few shovelfuls at a time, and finish off with a mulch. This method is applicable to trees and bushes of all kinds, and when it is done at relatively short intervals, good results usually follow the operation. In some kinds

of soil a fruitful habit is soon engendered, and root-pruning in after years is rarely called for by trees that have begun to bear fruit abundantly and regularly, except when frosts in the spring have rendered the trees unfruitful for several seasons.

YOUNG STANDARD TREES.—Such of these as stand in orchards under turf should have the grass cut away round about the stems for a few years subsequent to being planted, and be liberally supplied with manure if the soil be poor; and if ground game abounds, some kind of protection must be placed round each tree, or the orchard effectually fenced in. There are various methods of protection in use, viz., galvanised-iron rabbit-netting, bundles of ash or hazel-rods strung together by means of a bit of wire at the top and bottom, and separated about an inch by means of little blocks of old Elder wood. This is a capital fence against rabbits, &c., and large stock. It should not be secured tight to the stem. Then there is a mixture with which the stems may be smeared up to a height of 6 feet, which consists of water, clay, soot, and cow-dung, or lime, together with half a pint of petroleum to a pailful. This kind of smear is also a good preventive of American blight and scale on Apple trees; or for these two last-mentioned foes of the gardener, soft-soap, train-oil, or petroleum may be used instead. If hay-bands have been made use of on any of the trees, burn them, as the larvæ of various kinds of mischievous insects find a hiding-place in them. If time permits, wash all trees with strong soapuds, mixed with a small quantity of petroleum, intimately mixed together whilst being used. Grease-bands, which I had never much faith in, are apparently giving way to the old and valuable remedy of dusting the trees with lime, and the free use of soapuds, &c.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

PROTECTING BROCCOLI.—Broccoli plants are not now layed or heeled over as much as was formerly the case; but after the experience of the past two winters, it will be prudent if the old method be followed. Growth is very tender this season, and should sharp frosts come, there will be much loss to deplore. No time should therefore be lost in laying the later-heading Broccolis, with the ends of the leaves turned to the north, protecting the stems with soil removed from one side of the plants, and making it firm about the stems, and so high up it that the bases of the leaves are protected; the heads may be smaller than unlayed plants, but it is better to have small heads than none at all. Early kinds coming into use need not be heeled in, but they can be put under cover when the heads are of usable size.

BROCCOLI AND CAULIFLOWERS IN FRAMES.—These, if in pots, will now require good attention. Have the sashes removed daily, weather permitting, keeping the plants free of mildew by the liberal use of dry wood-ashes sprinkled over the foliage and soil. Those plants which are growing in pots should have the latter sunk in finely-sifted coal-ashes, &c. But little root-moisture will be necessary after plunging the pots, and attention given to securing a sturdy plant, by free ventilation, when there is no frost, by day, and admitting air in small quantities by night.

SALADS.—Lettuce and Endive in frames will soon prove valuable. So far, salads have needed but little, if any, protection against frost, but means should now be taken to preserve them. Lettuce should be lifted with a ball of roots and soil, and planted in frames, or in fruit wall cases, &c., being well ventilated in mild weather to prevent decay, scarcely any water being afforded them, if the soil was moist when they were planted, one good watering being sufficient to settle the soil. If the plants have to be covered where they stand, the sashes should be placed over them at this date. Full-grown blanched heads may be covered with mats in severe weather; others, pricked out under frames for spring cutting, should likewise be covered at night, if frost threatens, and by day if the weather is wet. Endive needs much the same kind of treatment, except that it is hardier—that is, the large round-leaved Batavian is. The plants should be tied up, or otherwise blanched, in quantity sufficient for requirements. The curled-leaved Endives need the same sort of protection from the weather as Lettuce, soon decaying if frozen. Half-grown plants for succession may be protected

where growing, but not the curled varieties—these are too tender.

CHICORY AND DANDELION.—The roots of these plants should now be dug up, and stored in the root shed, after cutting off the tops to within 1 inch of the root.

CORN SALAD requires protection in hard weather, by litter or bracken being shaken over the bed.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

PEACH AND NECTARINE BORDERS.—Exhausted trees are neither encouraging nor remunerative to the grower, and should therefore be replaced with young ones. This is most desirable when the borders are old, badly drained, and consequently unsuitable for the roots of these plants. The best time for commencing this operation is during the severe frosts of early winter, as walks and ground are then in good form to support the transport of materials over them. All things should therefore be in readiness for a start on the approach of hard weather. In clearing out the soil, no notice should be taken of its present depth, unless it rests on a stratum of gravel, for these old borders often reveal strange ideas of earlier days, some having 4 feet of soil above the drainage, while others may be found resting on a bed of cement $2\frac{1}{2}$ feet below the surface (I have just had to deal with one of this kind). The kind of soil to be employed in forming the new border, and the natural means of drainage, should determine the amount of soil, &c., to take out. If the subsoil be gravel, and the turf which is to be used is of a loamy nature, then $2\frac{1}{2}$ feet will be a sufficient depth, but if the under stratum be clay, a foot deeper will be necessary, in order that ample drainage may be provided by filling this space with stones or clinkers. Should, however, the soil for the new border be very stiff, and approaching clay in character, the border will be better if a little less than $2\frac{1}{2}$ feet in depth. On the other hand, a sandy loam will be none the worse for being from $2\frac{1}{2}$ to 3 feet deep for these trees. Of whatever nature the soil that is to be employed, it should be mixed with wood ashes, lime, chalk, or old plaster to the extent of four parts of soil to one of either of the last mentioned materials. To this compost I would add a cwt. of basic slag to every five loads, but no other manures, as the plants will grow freely enough for the first few years without any further assistance beyond an occasional dressing with kainit during the growing season. After renovations of this sort, it is sometimes desirable to erect new trellising, and in doing so these ought to be placed so that the largest area possible in the structure will be utilised for the production of fruit. For lean-to houses, a curvilinear trellis, running from the front to within 4 or 5 feet of the back wall, and about 6 feet at this point in height from the floor of the house, should be provided. Besides this trellis, the wall itself should be wired. A thorough cleansing and re-painting of all wood and iron-work should also be effected, and if scale has been present, syringing the walls with paraffin oil before whitewashing them. Every means should be taken to secure entire immunity from insect pests, and this done, make sure that none but clean trees find a place within.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

CARRIAGE DRIVES.—There are nooks and open spaces in close proximity to carriage-drives which, by planting with alternate clumps of good varieties of Rhododendrons, evergreens, and flowering trees and shrubs, would be considerably improved. Where there is a good expanse of turf on either side, such beds or belts should be made of considerable size, irregular, and at fairly wide distances apart. Among flowering shrubs the Weigelas should be included. Scarlet Oaks, Japanese Maples (see p. 616), and other subjects, which are noted for the beauty of their autumn tints, should be planted. The ground should be prepared in the manner described in the Calendar for November 19, p. 616, and the trees and shrubs put pretty closely together for immediate effect, subsequently thinning out and transplanting elsewhere before they get crowded.

CLOTHING TRUNKS OF OLD TREES.—There are to be found in most places half-dead gnarled trees whose trunks and branches might be rendered attractive by planting the under-mentioned climbers

at their base, and training their rambling shoots over them, namely Clematis Jackmanni, C. flam-mula, C. vitalba, Ampelopsis hederacea (Virginian Creeper), A. Veitchii, Lonicera brachypoda and L. sempervirens (evergreen Honeysuckle), Wisteria sinensis, Passiflora cœrulea (in southern counties), Jasminum nudiflorum (yellow), J. officinale (white), J. revolutum (yellow), Vitis heterophylla, and such Roses as Banksiaeflora, Adelaide d'Orleans, Donna Maria, Félicité-Perpétue, Jules Margottin, General Jacqueminot, Achille Gounod, and Celine Forestier.

ROSE CUTTINGS.—Cuttings taken off with a heel, if not already done, may now be put in, in rows about 9 inches apart, and 2 inches in the row, on a north or east border, where the soil is light and sandy. The cuttings, about 9 inches long, may be inserted 5 or 6 inches deep, pressing the soil firmly. Cuttings may also be inserted in pots or boxes filled with sandy soil, watered, and placed in a cold pit or frame. In the spring, these can be put in heat, and potted off singly into 3-inch pots as soon as they are well rooted.

PRUNING DECIDUOUS TREES AND SHRUBS.—Any deciduous trees and shrubs that require their shoots thinned out or shortened back, should be seen to forthwith; doing the work in such a manner as to conceal the wounds made during the operation, as much as possible.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

GENERAL CULTURE.—A good deal of trouble is experienced with many Orchids before the right position can be found for them. Step by step the orchidist finds for his plants places that are most favourable to growth, and having done this, it is well to be cautious before again removing them (except for the purpose of resting the plants), notwithstanding reverse treatment that he may read or hear of; for after all, owing to the various methods of building houses and the different aspects afforded them, the cool-house of one grower may resemble the intermediate-house of another in general conditions, and this I think is often a source of misguidance.

Oncidium cheiroporum, now showing flower-spikes, will probably be safer if placed in the intermediate-house for the winter. O. splendidum, also showing for flower, is a lovely species, but unfortunately it is rarely seen in a thriving condition, except for a few years. Its large leathery leaves seem to require a great amount of sunshine to mature them. I find it grows best suspended in the Mexican-house. O. Jonesianum should be wintered in the same house, but when growing, it requires the warmth of the Dendrobium-house. Odontoglossum Londeboroughianum is a species rarely to be observed grown to perfection. It thrives best here when afforded similar treatment to the Mexican Lælias. O. Phalaenopsis should have the warmest end of the intermediate-house during winter, and be watered but sparingly, otherwise the tips of the leaves turn of a black colour, as in the case of O. vexillarium. Lælia harpophylla and L. monophylla do well in the coolest house, but Lælia majalis should have the warmth of the Mexican-house, for if allowed to get too cool in the winter, the foliage is apt to turn yellow, and drop. Cattleya intermedia should have a little more warmth at this season than the type, as growth is now most active. C. Lawrenceana, which should be kept warm whilst growing, may be rested in the ordinary Cattleya-house. C. Percivalliana is just now pushing up its flowers, and if subjected to any sudden change of temperature, the flower-spikes may turn black in the sheath, and consequently never open. A steady temperature of 55° to 65° will be best, in order to get flowers of good quality; the same conditions will apply to any C. Trianae which are forward in showing flower. Black spot on the foliage of Dendrobium thyrsiflorum and D. densiflorum may generally be attributed to a low temperature in winter.

GENERAL WORK.—This will consist at this season of a thorough cleaning of the plants and of the houses. A good supply of sphagnum moss should be got in, and picked over ready for use. Potting commences early in the year, and then, owing to frosts and snow, it may not be convenient to get it. A supply of good fibrous peat should be got in stock also, and this may be broken in small pieces, and the fine particles taken from it during spare time. Tying-sticks in various lengths should be painted, and other necessities, such as labels, &c., be got ready.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY,	DEC. 5.	Smithfield Cattle Show commences, and will include the usual classes for roots and seeds.
THURSDAY,	DEC. 8.	Brighton and Sussex New Horticultural Society.
SATURDAY,	DEC. 10.	Royal Botanic Society.

SALES

MONDAY,	DEC. 5.	Dutch Bulbs, at Stevens' Rooms. Bulbs and Plants, at Protheroe & Morris' Rooms.
TUESDAY,	DEC. 6.	Bulbs and Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	DEC. 7.	Lilies and Bulbs at Protheroe & Morris' Rooms. Liliams from Japan at Stevens' Rooms.
THURSDAY,	DEC. 8.	Plants and Bulbs at Protheroe & Morris' Rooms. Roses, Shrubs, and Border Plants at Stevens' Rooms.
FRIDAY,	DEC. 9.	Large Orchid Sale, by order of Mr. F. Sander, at Messrs. Protheroe & Morris' Rooms.
SATURDAY,	DEC. 10.	Lily of the Valley, Spireas, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°1.

DECIDEDLY one of the most encouraging signs of the times is the tendency everywhere observable, where circumstances permit, to diffuse a knowledge of first principles in agriculture and horticulture. In other cases it is impossible to do otherwise for the present than rush at once into practical details, in spite of the fact that they would ultimately be much more fruitful if based upon previous knowledge of principles. But we must take things as we find them, and make the best of the opportunities which present themselves at the moment. And so we cannot but rejoice at the continued progress of sound practical teaching in our villages through the agency of the County Council lecturers. It is, in a measure, the realisation of hopes, and a step toward the fulfilment, of what has been advocated in these columns for years past.

Intimately connected with the subject of technical education is the question of allotments for the rural population. It would be of no use teaching a man how a fruit tree grows, and how it should be treated to produce the best results, if he is to be deprived of all means of carrying into practice what he has been taught. We want to make a man a contented and a competent citizen. To do this, we must give those who cannot help themselves every available help in feeding both mind and body, so as to enable them to work to their own advantage, and the benefit of the community. To this end we clothe and educate and watch over the interests of our children. To this end should those who have the power, aid in the development of the labourer, and the promotion of the welfare of the

country. One means of effecting these objects is doubtless supplied by the granting of allotments to competent men under equitable conditions. On this subject, Mr. BRUCE FINDLAY has recently been expressing his views to the citizens of Manchester. We need not say Mr. FINDLAY's remarks are worthy of respectful consideration. Limitations of space forbid us from doing more than laying certain portions only of Mr. FINDLAY's address before our readers—enough, however, we think, to illustrate his views and substantiate our statements.

"It seems to me that in no way can the objects of a Botanical and Horticultural Society be more efficiently accomplished than becoming as it were a centre towards which all the practical improvements made in its vicinity shall tend, and from which they may again be disseminated to fructify in a wider circle. In looking over the published proceedings in connection with the Fruit Congress of last year, there are, of course, many inferences to be drawn. The President of the first day's Conference, the Earl of Derby, made a few observations which I think deserve most careful consideration. His lordship said, 'that every expedient which tends to increase the value of English soil and leads to the profitable employment of labour upon it deserves our serious attention.' It seems to me that this statesmanlike utterance is pregnant with meaning. We think that the extension of fruit culture in this country will tend very much to 'increase the value of English soil.'

"We are all absolutely dependent upon the vegetable world for our existence; this is, of course, a simple elementary fact, but I fear that the bulk of mankind are prone to forget first principles. There seems to be a tendency in this age to 'leave the elementary principles,' and 'go on' to, alas, not 'perfection,' but things of a baser sort. I suppose that it will be admitted without controversy that the food we eat (whether animal or vegetable), the raiment we wear, the fuel we burn, and all the elegancies of life come to us from God's works, as set forth in the vegetable kingdom. Seeing that these things are so, why, I ask, should our rulers in this country be so backward to recognise the importance of this matter under consideration? If a vote on account is proposed in Parliament to purchase some works of art, costing the nation a million of pounds, there is not much difficulty in passing such a resolution. But if it is proposed to spend a few thousands in connection with agriculture or horticulture, the 'items' shake empty heads and cry 'madness.'

"There is at the present time a larger quantity of land devoted to the cultivation of fruit than has been the case at any previous period in our history, but this has only been brought about very recently. 'For many years prior to 1887, the system of granting garden allotments to agricultural labourers and to others of our rural populations had been established.' The returns showing the number of allotments granted from the date of the passing of the Allotments Act in 1887, prove that a very large number of people have availed themselves of the privileges of this Act. For many years prior to the passing of this measure it was well known that the agricultural labourers of this country had not the same interest in the soil as they once had. A constant disavowing of the land from the limited holders had been going on for several centuries. Though a necessary consequence of the improved state of agriculture, the decay of the cottar tenantry was an evil which was not sufficiently appreciated.

"It seems to me consistent with sound policy to let every English labourer, when practicable, have some certain provision uninfluenced by the fluctuations of the labour market to which he might resort in time of need. My recommendation is that, however small, he should, if possible, have his share of the land. History speaks loudly and distinctly on this point, and traces the melancholy fate of the most powerful empires and states to the cutting off of every particle

of the soil from those who were so closely attached to it. I wish not to be misunderstood on this important point, and beg to state that I entirely disapprove of any and every scheme which means confiscation and robbery; equality of possessions cannot surely be entertained seriously by anyone. But there can be no doubt, I think, that it would be well, if possible, to admit all into the benefits of the social compact, for the man who rents a perch of land is invariably found to be a better subject than he who is without any. He is more disposed to obey the laws of his country, and more energetic in spreading abroad a love for those laws, just because he knows that to them he is indebted for the preservation of his little property.

"The records which are available enable us to form a fairly approximate estimate of the impetus given to the extension by the discussion, and by the passing the Allotments Acts. The following figures seem to me rather startling. The number of allotments in Great Britain in the year 1873 amounted to 246,398, and in the year 1890 to 455,005. The increase per annum between the years 1873 to 1886, a period of thirteen years, amounted to 8569, and from the years 1886 to 1890, a period of four years, 24,302. It is noteworthy that the rate of annual increase in the last four years has been apparently three times as rapid as between 1873 and 1886. Clearly, then, there has been a great increase in the acquirement of allotments, directly or indirectly, under the influence of the Allotments Acts of 1887 and 1890, and it is probable that the increase will continue for some time to come. Nor can there be any doubt that such allotments are a very great boon, especially to rural populations.

"I have very little faith in the 'various ways' by which some propose to better the condition of the agricultural labourer. A 'variety of measures' is, in my opinion, quite incompatible with his capacities, his powers being altogether centred in the soil, and in sowing and reaping its products. Out of this element he is timid and helpless, but in it all his powers seem to be gratified, and the desire he evinces to become possessed of a patch of land to cultivate on his own account, is little short of a passion.

"I do not for a moment consider that the best system of allotments would be a universal panacea applicable to every labouring man. The allotment system itself will throw out thousands as unworthy to touch the soil. Let us look at the chief agent which it embraces—vegetation. It is stirring either in a right or wrong direction every hour of our life. Of what use, therefore, would sluggards prove in directing such a power; or stupefied drunkards far away in the alehouse; or the various other inert classes who hate to work, and who would rather let their crops rot in the fields than answer the demands upon them for exertion? In truth, no system will save such men, and at last, if at all, they are fit only to be servants of others, their best master being anyone save themselves.

"What is wanted is, that those who engage in the cultivation of fruit upon land which does not belong to them should have greater security for their outlay than exists at the present time. Lord DERBY said on this subject, 'I am quite sure that when disputes occur between landlord and tenant, they arise in nine cases out of ten not out of a wish [on either side to over-reach the other, but from the easy rural fashion of letting things go on without distinct and definite agreement as to the rights of both parties, but on the basis of some vague understanding which is apt to end in misunderstanding.' It seems to me only fair and just that tenants should be able to secure adequate compensation for unexhausted improvements or security of tenure. I have often thought that if the middlemen were out of the way, and landlord and tenant brought face to face with each other, that we should not have so much heartburning in connection with the matter. I mean by the middlemen the political agitator and the landlord's agent. The former often persuades the tenant to



DENDROCALAMUS SIKKIMENSIS, IN THE CONSERVATORY, CASTLEWELLAN.

pay no rent even when he can afford to do so; the latter very often deals with the tenant in a most harsh and arbitrary way, the result being in both instances most unsatisfactory.

"That the subject with which we are dealing is one of the most vital import is clearly proved by the public press. The position of many farmers is most deplorable, and the wretched climatic conditions through which we have recently passed have tended very much to intensify this lamentable state of things. The question is—What is the remedy? or is there a remedy?"

"In his address at the Fruit Conference, Sir JAMES WHITEHEAD said, 'That those who engage in the cultivation of fruit upon land which does not belong to them should have greater security for their outlay than exists at the present time. If a tenant quits his holding before ten years have expired from the time of the planting of the fruit trees, the cost of the trees, and the tending to them for five years, should be a permanent improvement under the cultural Holdings Act; or the trees should be taken at a valuation, either by the landlord or by the incoming tenant.'

"I have very great hope indeed that the allotment system will have a most salutary effect upon our rural population when it gets into full swing. It will inspire hope in the breast of the labouring-man. The only hope worthy of encouragement arises from the labours of the man himself, and inspires him in every industrial art—in digging, sowing, reaping, and in all other services, whether performed for himself or his employer, because he knows that, in either case, they invariably carry their reward with them. They also call into exercise the virtue of prudence. Where no gain can be made, the labourer is too apt to settle down into a state of indifference.

"Is it likely that a man will care much about being industrious when no one by his industry can avoid being a pauper? Once enable a man to save a few shillings, and a love of independence takes possession of him, and with that an incitement to sober habits. Considered as a moral agent, the allotment system is active and powerful. To have an industrious, contented, and happy population is even more than can at all times be expected in our present state. This, however, the allotment system, when properly conducted, will, I think, go far to ensure."

DENDROCALAMUS SIKKIMENSIS.—We are indebted to the courtesy of the Earl of ANNESLEY, for the opportunity of figuring this handsome Bamboo. It is planted in the Winter Garden at Castlewellan, co. Down. It was received from India as a small plant in a Wardian case, but is now about 16 feet high. It is a noble Bamboo, and well worthy of cultivation by those who can afford the necessary space. The leaf is like that of *Bambusa palmata*, but longer and larger. It is doubtful if it will prove hardy, though in view of the hardihood of some of the Japanese species, it would be quite worth trying in suitable situations. A figure of the foliage is given in a former volume, June 28th, 1890.

PROFESSORIAL APPOINTMENT.—Mr. FRANCIS URWIN, son of the great Naturalist, and the joint author of *The Power of Movement in Plants*, and at present Reader in Botany at Cambridge, has, on the nomination of Professor BABINGTON, been appointed Deputy-Professor for the current academical year.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We have received notice from Mr. GEORGE J. INGRAM, Secretary, of a general meeting of the members of the Institution, which will be held at Simpson's Restaurant, Strand, London, on Tuesday, December 20, 1892, at 3 P.M., for the purpose of passing a special resolution to change the name of the Institution from the Benevolent Institution for the Relief of Aged and Indigent Gardeners and their Widows, which was the original designation, to that of The Gardeners' Royal Benevolent Institution, by which it is now generally known, for the purpose of registration. Some alterations and additions to

the rules of the Institution, recommended by the committee of management, will also be considered at the same time.

KENT COUNTY COUNCIL.—The Experiments Committee met last Thursday at the Horticultural College, Swanley. Amongst the letters read was one from Mr. BASIL HODGES, C.C., dealing very ably with the difficulties with which farmers and growers have to contend in purchasing artificial manures. It transpired that a resolution had already been entered upon the minutes, which accorded with Mr. BASIL HODGES' opinion that only manures of known composition and analysis should be used in the Committee's experiments, and a long discussion ensued as to the best way to render assistance to growers in the matter. Professor CHESHIRE promised to bring before the Committee at their next meeting a new method he had devised, whereby those not possessing a knowledge of chemistry could determine in what constituents any soil might be deficient, and thus know how to proceed in the purchase of artificial manures. Letters from Lord SUDELEY and Mr. BEACH were read, giving the results of trials in fruit evaporation, which tended to confirm the general opinion of the Committee that this method of fruit preservation is not likely to prove remunerative in England. It was, however, decided that a final trial should be made at the College next summer, with a machine kindly placed at the disposal of the Committee by Mr. E. D. HILL. Professor CHESHIRE then gave an address on the use of basic slag, illustrating his remarks by various experiments. Basic slag is a waste product of steel manufacturers, very finely ground, and containing thirty-five to forty-five per cent. phosphate and ten per cent. iron. The present price is about fifty shillings a ton. Some very good specimens of Lupin and Clover were exhibited, to show the nodules on the roots, which accumulate nitrogen from the air.

TECHNICAL LECTURES IN HORTICULTURE.—We are glad to hear that, in spite of dense fogs and other climatal impediments, the lectures in the provinces have progressed satisfactorily. Mr. FISH has just completed a first course of twenty-five lectures in Cambridgeshire, and is now engaged in other districts. Great interest is shown in these lectures, and much sympathy and hospitality evinced by landowners and clergy.

GARDENERS' ORPHAN FUND.—We would draw the attention of our readers to a benefit which is to be given in aid of the above most-deserving charity at "Venice in London" at Olympia during the Cattle Show week, from December the 5th to 10th, and from the 12th to 17th. The usual attractions of the place will be enhanced by the band of the Grenadier Guards under the personal leadership of Lieutenant Dan Godfrey, the London Orchestral Band, conducted by Mr. Dan Godfrey, jun., and the military band of forty Carabinieri. New costumes to the value of £10,000 have been added to the grand spectacle. Tickets of admission can be obtained before the dates mentioned from the leading nurserymen, seedsmen, and florists, the members of the executive committee of the Gardeners' Orphan Fund, from our office, and of the hon. secretary, Mr. A. F. BARRON, Royal Horticultural Gardens, Chiswick. These tickets are identical with those sold at Olympia at similar prices, and entitle the holders to similar seats. It has been arranged that payments made at the doors will not benefit the Fund. Olympia, *via* Addison Road station, is easily reached by the Metropolitan, District, London and North Western, London and South Western, Great Western, and London, Brighton, & South Coast railways.

THE NATIONAL CHRYSANTHEMUM SOCIETY.—The Committee of the above society are engaged in repaying in full the compliments paid them by the Chrysanthemum growers in New Zealand, when, represented by Mr. JOHN EARLAND, they sent across to the mother country, in a frozen condition, the flowers raised by the latter. The Committee have

made arrangements with the Cold Storage Company at Blackfriars, to freeze and forward to New Zealand a number of blooms for exhibition at the annual show at Wellington in April next. Mr. W. HERBERT FOWLER of Taunton has furnished the Committee with a dozen of the finest Japanese blooms, with which he won one of the Holmes Memorial Challenge Cups at the exhibition at the Royal Aquarium on November 8; and a similar number of the finest incurved varieties shown, by Mr. W. MEASE, gr. to A. TATE, Esq., Downside Leatherhead. Instead of freezing each bloom in a metal cylinder, as was done in the case of the flowers sent from New Zealand, the blooms have been placed in an ordinary stand for twelve, with cups and tubes complete, as if to be staged for exhibition; they were then stood in a zinc case 15 inches in depth, but sufficiently roomy to admit of there being 3 inches of water all round the stand when in position. The body of water will be gradually frozen—an operation requiring several days—the lid of the zinc case soldered down, placed in a wooden case, covered with sawdust, and that in its turn carefully fastened. The two cases will then be despatched to New Zealand, and Chrysanthemum growers at the Antipodes will have an opportunity of seeing some of the best productions of English growers. The project and its successful carrying is largely due to Mr. ROBERT BALLANTINE, the chairman of the committee, and he has had the hearty co-operation of Mr. KAYE, the Manager of the Cold Storage Company, who has rendered every facility, and offered to convey the cases to New Zealand free of cost.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—The Floral Committee of the above on the occasion of the meetings of the Society on October 12 and November 9, made the following awards.—First-class Certificates to E. H. KEELAGE & SON, Haarlem, for *Dahlia* "Rosa cactus" (introduced new plant); *Kniphofia* hybr. "Chloris" (introduced new plant); *K. foliosa* Hochstetter (insufficiently-known plant). To Mr. C. G. VAN TUBERGEN, JR., Haarlem, for *Cyrtanthus hybridus* (*C. sanguineus* × *Vallota purpurea*) (new plant); *Nerine pudica* Hook. var. *alba pura* (new plant); *N. sarniensis* Herb. var. *carnosa* (new plant). Second-class Certificates to Messrs. ANT. ROOZEN & SON, Overveen, for *Eryngium amethystinum*, Linn.; to Messrs. E. H. KEELAGE & SON, Haarlem, for *Cactus Dahlia* "Millie Cupham" (introduced new plant); *Kniphofia aloides magnifica* (insufficiently-known plant); *K. speciosa*, Baker (introduced new plant); to Mr. C. G. Van Tubergen, Jr., Haarlem, for *Nerine amabilis*, Hort. var. *rosea* (new plant); *N. hybr.* "Novelty" var. *striata* (new plant); *N. pudica*, Hook. var. *rosea* (new plant).

BRAZILIAN EXHIBITION.—The exhibition of Brazilian Orchids and other products, which is to be got together in Paris under the superintendence of the Viscount de SAINT LÉGER, will not be opened till April. Owing to a misapprehension, we lately announced it as already opened.

LONDON PANSY SOCIETY.—The first meeting of the above Society was held at the Guildhall Tavern on November 24. A number of gentlemen interested in the subject attended, and rules, &c., were drawn up which will be submitted at the general meeting to be held early in January, 1893. The Hon. Secretary is Mr. GEO. MCLEOD, Chingford, from whom the rules of membership and other information can be obtained regarding the objects of the Society.

CARDIFF GARDENERS' SOCIETY.—At the weekly meeting of this Society on Tuesday last, a paper on "The Culture of the Gloxinia," was read by Mr. CLARK, gr. to Colonel HILL, Rookwood, Llandaff. A good discussion, led by Mr. HOCKEY, followed. The subject for next week is "Cyclamen Culture," by Mr. WALL.

CHRYSANTHEMUMS AT AMSTERDAM.—The third National Chrysanthemum exhibition of the

Dutch Horticultural and Botanic Society at Amsterdam was a highly interesting one. Looked forward to with more than ordinary interest by specialists and lovers in general of this gay and popular flower, it was to them the great horticultural event of the year. Indeed, the Chrysanthemum show was a very distinct advance upon the work of former years. There was a bright and attractive display of splendid and new varieties; groups sent by KUYK BROTHERS from Utrecht, and Messrs. GROENEWEGEN & Co. from Amsterdam, were admirable in every respect—a glow of colour; such varieties as the following were shown: Louis Boëmer, Edwin Lonsdale, Etoile de Lyon, Edwin Molyneux, W. H. Lincoln, Delaware, H. Ballantine, Madame Marie Hoste, *Enfant des Deux Mondes*, *Lundown*, and many other choice varieties. All plants perfectly cultivated, and with very large flowers.

THE CHRYSANTHEMUM AT HAMBURG.—A fine display of Chrysanthemums was made on November 17 and three following days at the Zoological Gardens, by Messrs. GÖTZE & HAMKENS, nurserymen, of Wandsbeck, Hamburg. The firm, which makes a speciality of this flower, had more than 2000 plants, tastefully arranged, and the body of the hall was occupied by three large beds, in the centre one of which the different varieties were placed in groups, and the other beds contained numerous fine specimens of leading varieties, good dwarf plants being employed to form an edging to these. Small branches of Spruce Fir were used to hide the outer row of pots from view. The exhibition, which attracted a great number of visitors, was the first of the kind ever held in Hamburg.

POTATOS AT THE BIRMINGHAM CATTLE AND ROOT SHOW.—A splendid display of tubers was made at this show in competition for the prizes offered by the Society. That fine Potato, Sutton's Satisfaction, seemed to be the most popular variety amongst exhibitors, as it was staged no fewer than twenty-six times, and appeared in the first prize lots in six classes out of nine devoted to Potatoes already in commerce, as well as taking the first prize in the class for the most handsome dish of any variety.

VEGETARIANISM.—The Christmas Number of *The Vegetarian* promises to be a very interesting one. It will contain articles by A. F. Hills, President of the London Vegetarian Society; Rev. Prof. J. E. B. Mayor, Senior Fellow of St. John's College, Cambridge; Josiah Oldfield, M.A., B.C.L.; Sir Charles Cameron, M.D., Prof. Wynter Blyth, Alderman Harry Phillips, and many other well-known advocates of vegetarian principles.

WOOLLENISED JUTE.—We have more than once recorded the progress made in the preparation of "woollenised jute," a new fibre to be spun into material for upholsterers' use. The manufacturers in Dundee, who were for some time in competition with a French firm spinning fibre for the same purpose from China-grass, have recently patented their invention, and have already so great a demand for it that it is being dyed, it is said, by the ton, in eighteen shades. From the sample we have seen, we should say that it is likely to continue a success, being evenly coloured throughout, and extremely strong.

M. EDOUARD ANDRÉ.—This eminent landscape gardener has been nominated Professor of landscape gardening and construction at L'Ecole Nationale d'Horticulture at Versailles.

THE DARWIN MEDAL.—At the anniversary meeting of the Royal Society on Wednesday last, the Darwin Medal was awarded to Sir JOSEPH HOOKER. Professor HUXLEY, in alluding to the matter at the dinner presided over by Lord KELVIN, the President, said: The Darwin Medal was instituted in honour of one of his best and dearest friends, and it was now

conferred upon a man who was one of the staunchest friends he had had for the last forty years. He might fairly appeal to Sir JOSEPH HOOKER's present activity, put him down also among the young men, and thereby save the credit of the Council in the matter of its own regulation. To those who knew the *Life and Letters of Darwin*, talk about Sir JOSEPH HOOKER's right to the Darwin Medal was as futile as the attempt to judge MANLIUS in sight of the Capitol. He knew no more remarkable example of life-long devotion, of stores of information laid open, of useful criticism, and of still more useful encouragement, by one man to another, than that exhibited by Sir JOSEPH HOOKER in this picture. It might be that even the man whose motto was, "It's dogged as does it," and who so patiently laboured for half a lifetime at the great fabric of the origin of species, might have fainted by the way without this friend's aid. And, assuredly, HOOKER's great study of geographical distribution was a most important factor in DARWIN's work. It lay in the eternal fitness of things that WALLACE and HOOKER should receive the Darwin Medal; and that these old young-men should give it a heightened value for the young young-men to whom it would hereafter pass. Mr. LANGLEY responded for the other medallists and himself, and in the course of his speech he read the following extract from a letter from Sir JOSEPH HOOKER:—"The award to me of the Darwin Medal is a triple source of gratification; for, first, the honour is a very great one and most dearly prized; then its receipt from the hand of a president whom I have known personally almost from childhood (for we sat together in his father's mathematical class at Glasgow nearer sixty than fifty years ago) adds a special interest to the award; and, lastly, the allusion which the president and council have been pleased to make to my intimate association with my venerated master in studies preliminary to the *Origin of Species* has, I need not say, affected me deeply. That association was indeed intimate; its birth, youth, and maturity are detailed in full in the masterly 'Life' of his father, written by FRANCIS DARWIN; and that it has been thought worthy of record by the Royal Society, as an episode in the history of the Darwin Medal, is a crowning honour, for which I tender my sincerest thanks."

THE EARLIER OPENING OF KEW GARDENS.—A deputation from the Richmond Town Council waited upon Mr. SHAW-LEFEVRE, M.P., First Commissioner of Works, for the purpose of urging upon him that Kew Gardens should be opened to the public at 9 o'clock in the morning, instead of 12 as at present. Mr. SHAW-LEFEVRE was accompanied by Mr. DYER, Director of the Royal Gardens; and Mr. H. W. PRIMROSE, Secretary to the Office of Works. Mr. SHAW-LEFEVRE, in reply, expressed his sympathy with the general object of the deputation. The question of the earlier opening of Kew Gardens was an old story, but it was one that was not altogether free from difficulty. In 1879, it was the subject of a long discussion in the House of Commons upon a motion by Sir TREVOR LAWRENCE, and it was then stated by the First Commissioner that the opening of the gardens at 9 o'clock throughout the year would entail an additional cost upon the management of from £1,500 to £2,000 a year. The Commissioner also alleged other arguments against it, and was supported by a considerable number of members of the House in the interests of science, it being pointed out that the use of the gardens in the early part of the day for scientific investigation was most important, and was a privilege that was highly appreciated. He had been recently further considering the matter, and had referred the question of expense to a committee, which was now considering the labourers' wages at Kew and in the Royal parks generally, and until he knew accurately what the real cost of the arrangement suggested by the deputation would be, he could not come to a final determination upon the matter. It was certain, however, that the expense would not be inconsiderable. He disputed the statement of the deputation, that not much watching would be

required in the gardens in the early morning, for the Director assured him that it was just when there were few people about that most watching was required. The gardens were now, and for some time had been, open to the public on the mornings of Bank holidays, and although railway companies advertised that fact very largely, comparatively few people arrived before 12 o'clock, the great mass of people who went in such throngs on those occasions making their appearance after that hour. It must also be borne in mind that there was a great interest in the other direction, namely, that of the scientific men who were allowed the privilege of frequenting the gardens in the morning, and Sir JOSEPH HOOKER, when director, reported very strongly against that privilege being withdrawn. A large number of persons now availed themselves of that regulation, and he had received letters from gentlemen interested in the gardens objecting to the withdrawal of the privilege by the general admission of the public, and stating that it was of great importance in the interests of science that scientists should still have special opportunities of studying the plants. Among others, he had a letter from an eminent scientific man, Mr. ALFRED WALLACE, a distinguished advocate of land nationalisation, who no doubt would have special views on the subject upon public grounds, and who said that he had frequently gone into the gardens for some days together for the purpose of being allowed to handle the plants and to make investigations of a minute character that would be wholly impossible if the public generally were admitted. He could only say that he would carefully consider the question after he had ascertained what the cost would be. He believed that the present Chancellor of the Exchequer had the same general sympathy which he had with the public movement in favour of open spaces. Both the public interest and the interest of scientific men should be fully considered. *Times*.

CHICAGO EXHIBITION.—We learn that Mr. J. MCINDOE, gr. to Sir J. W. PEASE, Bart., M.P., Hutton Hall, Guisborough, has been applied to by the executive of the above to exhibit at the Great Horticultural Show, which will be held in the autumn of 1893, a collection of fruit similar to the one shown by him at the International Exhibition, Earl's Court, in August last. Mr. MCINDOE has accepted the invitation.

PLANT PORTRAITS.

BULBOPHYLLUM ANCEPS, Rolfe, sp. n., Borneo, *Lindenia*, t. 351.

DENDROBIUM MACCARTHYI, *Lindenia*, t. 349.

DISA VEITCHII X, a cross between *D. racemosa* and *D. grandiflora*, *Garden*, November 5.

HIBISCUS HUGELI, *Garden*, November 12.

ODONTOGLOSSUM NEBULOSUM, *Lindenia*, t. 350.

STANHOPEA INSIGNIS, *Lindenia*, t. 352.

NOTICES OF BOOKS.

BENEATH HELVELLYN'S SHADE. By Samuel Barber. (Elliot Stock, Paternoster Row.)

This is a book which we should expect to find in the reading-room of an hotel in the Lake District, and is perhaps written with this idea in view. It is a thin volume, composed of fourteen short chapters, eked out with much margin, and many nearly blank pages. The author has endeavoured "to be exact as far as was possible," and considers that a "fragmentary or sketchy treatment" of his subject is not inconsistent with "accuracy, and, indeed, thoroughness." After this introduction, we are not surprised to find that he discourses in short space on many most varied subjects, ranging from archæology to the clouds. The weather has been the principal subject of Mr. Barber's search, and this is only natural, considering the climate of Wythburn and the neighbourhood. We are treated to long descrip-

tions of cloud and mist effects, and to attempts at classification of the many shapes the ever-changing clouds assume. "Vaporology" is certainly a neglected science at present. As was inevitable in such a book, the quotations from Wordsworth are many, and altogether this is not a conventional guide-book, nor a sermon, nor a scientific treatise, but a mixture of all three with information with which no other single volume could furnish the reader. Its interest is essentially local, and it may be considered, on the whole, an acceptable addition to the literature of the neighbourhood. It is not illustrated.

SHARP EYES: A RAMBLER'S CALENDAR OF FIFTY-TWO WEEKS AMONG INSECTS, BIRDS, AND FLOWERS. By Wm. Hamilton Gibson. (Harper and Brothers, Franklin Street, New York.)

This is a very elegantly got up book, and its appearance at this season of the year suggests it as appropriate for a gift which will be equally welcome in the school-room as in the drawing-room. The author discourses, as his title would lead us to expect, upon the natural history of the year, interspersing his remarks with many pretty pictures of various sizes, drawn by his own pencil. As the book emanates from New York, some of the "popular" names as well as the creatures to which they refer will not be familiar to European readers. The information given is suggestive rather than exhaustive, and the author, with no pretence to scientific exactitude, endeavours to incite those with sharp eyes to observe for themselves some of the manifold details of the nature around them. A guide so pleasantly written and so attractive in appearance should be very popular.

CULTURE VERSUS NATURE.

In a paper under this heading, published in your issue of July 9 last, the following appears:—"You may collect two plants from a mountain-side, 10,000 feet or so in altitude, near the equator, and one will be perfectly hardy in Northern Europe, and the other will die at the first touch of frost. Why this is we do not fully know; but we may at least keep the question in our minds, and hope some day to solve the problem."

There should be no difficulty in accounting for this apparent anomaly.

The altitudinal range within which plants grow, either in a state of Nature or under cultivation, on the mountains of the tropics, averages, as a rule, some 3000 feet, that is, on ascending the mountain when a given plant is first noticed at, say, 5000 feet, we find its range likely to extend up to about 8000 feet. But some plants have a more restricted vertical distribution, such as various species of Cinchona, with a range of less than 2000 feet; others, again, have a range embracing 6000 feet, and even more. The range diminishes on receding from the equator towards the confines of the tropics.

A very remarkable instance of the constitutional flexibility with which some plants are endowed, may be adduced in the case of Maize (*Zea Mays*), than which, in all probability, no other important cultivated plant flourishes under conditions of elevations so diversified. Throughout the tropics Maize is largely cultivated from the level of the sea; and in Colombia it is most extensively cultivated at all heights up to 9600 feet, at which the crops require twelve months to ripen. The difference between the temperature at the level of the sea, and at 9600 feet is very marked, the one a sweltering tropical clime, the other a cold region, in which touches of frost frequently occur.

We have thus an extreme range of 9600 feet for one plant, a plant cultivated throughout on a great scale, and with the utmost success; a plant which is not only the companion of the Cocoa-nut Palm on the hottest plains, but everywhere accompanies upland Coffee culture, and extends through and considerably above the still more elevated Cinchona region, thence grows side by side with Oats, Barley, and Potatoes; furthermore, a plant that will not

yield even to the Apple tree, or the Peach tree, or to the wild Strawberry, for these prefer a warmer climate lower down the Andes.

We know nothing of the limits to which each of the two species growing at 10,000 feet extend. It may be that this altitude is the mean for both species, but one of them is constitutionally fitted to occupy a wider area of distribution, thus penetrating near to the line of perpetual snow; or it may be that the two species diverge from the altitude indicated in opposite directions. *Robert Thomson, Bogota, Republic of Colombia, September 20, 1892 (formerly Superintendent Botanical Department, Jamaica).*

WASHINGTONIA FILIFERA.

I AM of opinion that the photograph sent you as of *Washingtonia filifera* (see *Gardeners' Chronicle*, November 12, p. 591), really represents a Sabal, probably *S. Blackburniana*, the giant Fan-palm of Bermuda, of which there is a fine specimen in the Kew Palm-house; or it may be *S. Palmetto*, the Saw-Palm of the S. United States. *Washingtonia* is a well-marked genus, probably monotypic, and is characterised by a very stout stem, large fan-shaped leaves, with stout sheathing petioles, the margins of which are armed with stout broad-based dark brown spines. These spines and the long thread-like white filaments, which hang in profusion from the leaf segments, are characters which taken together are sufficient to identify *Washingtonia* from all other genera of Palms.

There is a most interesting account of this Californian Palm in *Garden and Forest*, vol. iii. (1890), p. 51, by Mr. G. B. Parish, of San Bernardino, which contains a great deal of information respecting the stature and habits of the *Washingtonia* in the deserts of California, where it is as remarkable an arboreal feature as the Sequoia is in the forests of the sierra. It is there known as the Desert Palm. Mr. Parish says:—"75 feet is probably the greatest height reached by the Desert Palm. The top is crowned by a cluster of light green leaves, whose stout stems (petioles), deeply channeled, and beset along the edges with hooked spines, are 8 feet or more in length. The plaited blades are some 4 feet in diameter gladiately cleft at the edges, which are abundantly furnished with long thread-like filaments.

"A mature tree produces in June three or four large panicles of small scarious flowers. The stout terete peduncle ascends from the axil of a leaf near the centre of the crown, and is of the length of the petioles, so that the ultimate divisions droop over the blades. Gradually the peduncle declines, till in September or October the ripe fruit hangs pendent over the mass of dead leaves. Each cluster produces some ten pounds of fruit, the size of a large Pea, with a thin sweetish pulp, and a bony seed.

"A tree growing on Second Street, in San Bernardino, twenty-two years old, from the seed, measures: to the leaves 22 feet, crown 10 feet, total height, 32 feet; circumference (of stem), 3 feet from the ground, 9 feet 2 inches. This tree has produced flowers and fruit, for the first time, the present year (1890).

"During the last few years many thousands of these Palms have been planted in southern California, which in time will become notable features in the landscape."

Two trees of *W. filifera*, growing at Los Angeles, in California, are said to be about 95 feet high, and to have trunks 7 feet in diameter. They are supposed to be a hundred years old. The rate of growth of this Palm is astonishingly rapid. It is one of the commonest Palms in the gardens on the Riviera, where many of the specimens are quite enormous, although only about eighteen years old. Three years ago I saw some there with stems 15 feet high, and one, which I was assured was only twelve years old, had a stem 10 feet high, and nearly 3 feet in diameter at the base, whilst the head, which was composed of about ninety large leaves, was 20 feet through. The thickest stem I saw was a little over 14 feet in circumference. The stems when young are

more or less Onion-shaped, i.e., swollen at the base. There must be hundreds of thousands of this grand Palm on the Riviera alone.

So far as I can make out, there is no difference between ordinary *W. filifera* and that called *W. robusta*. Mr. Parish goes so far as to say that seeds of the one are made to do duty for both by collectors. Nor can I see any difference between *W. Sonora* of Sereno Watson, of which the author sent seeds to Kew in 1888, where there are now strong plants, in no way distinguishable from *W. filifera*. Of course, there are variations in such characters as the length and number of the filaments, the spines, &c., but they are not of much account, in this Palm at any rate.

The value of *W. filifera* in English gardens is not yet generally recognised. That it grows perfectly in an ordinary greenhouse temperature may be seen in the large winter garden at Kew, where there are several good examples, which have been there five years. I believe it would thrive out-of-doors in such places as Devon and Cornwall. At any rate, it is well worth trying, as it thrives in exposed situations on the Riviera, where 10° or more of frost sometimes occur. It is a Palm of exceptional interest and value, and is one of the noblest of the fan-leaved species. *W. W.*

NEW MODES OF DISPOSING OF FRUITS AND VEGETABLES.

I SUPPOSE we people on the land are to regard Mr. Charles Whitehead's amusing article, entitled the above, in the last *Journal of the Royal Agricultural Society of England*, as a strong hint to mend our ways, and a straight tip as to one of the ways of improving our positions. With all due humility, I beg to hint that a gentleman who has but little experience of trade, is not perhaps, the best teacher, that if he had on his hands 10 or 15 cwt. of assorted jams he would not know what to do with it. Mr. C. Whitehead states that an American fruit grower shuddered at our way of putting up Cherries, and suggested their being put in boxes. It would have been more to the purpose had a price been quoted for boxed fruit. Mr. Emory E. Smith, the grower referred to, would shiver at the price we get for our Cherries in some seasons when our own clash with foreign produce, or the weather is cold and wet; it would also make him feel queer if he paid the usual rail rates for small packages of English fruit. What would he think of 45s. per ton for 30 miles (South-Eastern Railway's charge from Cliffe to Covent Garden), by luggage train and rough vans? The foreign fruit comes by express, and at cheaper rates. As many Cherry orchards round Maidstone are sold by auction, why does not the writer of the article purchase one, and show how one of the new modes work in practice? No one asserts the wicker receptacle is an ideal one, but it has yet to be demonstrated that the price realised for English fruit will pay for any other. I have the account at my side of the returns of the Cherry orchard on this farm for the last seventeen years, and I know every market in London, so that I am not talking without my book. I agree with the writer that our own systems of distribution are not perfect, but for that, our railway companies are largely to blame. I can also assure him that it is impossible for the farmer or market-gardener to vary his market at a moment's notice. In fact, I advise him as an experiment to buy 20 acres of podding Peas and a few hundred bags, just to learn why we are unwilling to try new ideas I am giving him the easiest task, as I should like to bet my "bottom dollar" that Mr. Whitehead does not know how to put up Peas in bushels for two London markets I could name, not to mention attempting to supply a dozen or so of country markets.

Then, as to evaporating fruit, &c.: if one can believe one's eyes and ears, the work is done in a large way in the United States, and the advice given could only be followed here with any degree of success by growers with very large acreages; and the same may

be said of canning and jam making. I may add that the writer seems to be unaware that Vegetable Marrows, &c., have played a large part some years in factory made jams, and glucose is known also, so that people who deal in these things are supposed to supply it in dear as well as in cheap years. The making of jam, &c., in more or less (comparatively) small quantities may answer in the United States where conditions are different; but in this country the swopping, say, of 26 lb. of Raspberry, 16 lb. of Gooseberry, and 26 lb. of Damson jam for a new wheelbarrow, would be a task that even Mr. Charles Whitehead would not want to repeat. In newly settled countries, where towns are few, it is possible to exchange one commodity for another, and the makers are known. Here, whatever is produced, must be sold in a shop, and fruit, &c., preserved, evaporated, or canned by a dozen different makers would have all the faults of our present dairy-made butter—want of uniformity. I am afraid that a factory would only be supplied on the principle of, of two evils choose the lesser. We are a thick-headed lot, and will not be taught, and I dare to say the editor of the *Journal of the Royal Agricultural Society of England* thought the article would enlighten us. It certainly is entertaining, and one can almost imagine one's self in a good old farmhouse kitchen reading Mrs. Beaton's *Cookery Book*, helping to make the Christmas pudding by stealing the candied peel, while perusing five pages out of the eight forming the article. Such an essay does for one of the London dailies, making pretty reading for the City man who grows Scarlet Runners to hide his garden wall at Blackheath, and who gives his surplus Beans to Jones if neighbour Brown gets tired of them; but to the intelligent market grower, with a knowledge of the markets, it is receiving a stone when expecting bread. Peas have been sold off this farm at 6d. per bushel, Beans at 9d., Cauliflowers and Cabbages at 6d. per dozen and less; bad as these prices are, I should have been sorry to send my own baskets careering over the country on the offchance of the goods selling better elsewhere, or to have tried to pickle, can, or evaporate them; and to deal with acres of produce requires an extensive plant. With hot dry weather prevailing, Peas will not wait, and when picked, they must be shelled. Two years ago, in a little over one week, nearly 900 bushels from this farm did not pay for picking and other expenses. Now, will Mr. Whitehead tell me where I could have got the hands to tin those Peas? or, how I could find out in the time better markets, to take that quantity off my hand, and it is only a small one by comparison, as I have a friend at Chertsey who thinks nothing of bringing nearly 1000 bushels of Peas to market in one day. It is one peculiarity of the present agricultural depression, that all the good advice comes from outsiders, not from those who have been in the fight and know what it is to be at their wit's end to decide what to grow, or in the equally delightful position of not knowing what to do with it when it is grown. I make the remark with all humbleness, but it is not just possible that some of our advisers are just a little out of their depth occasionally. My foreman, when he went to Mr. Whitehead's to fetch the Vermorel's horse-power vaporiser last year for me, saw an orchard extremely near that gentleman's house that to his eye looked neglected; he was a practical gardener, and had been "through the mill," and he expressed his astonishment, until I explained that probably the trees were left to themselves as an experiment; also that there was a proverb, "the nearer to church, &c." Mr. Charles Whitehead means well, and so far as jam, &c., is concerned has perhaps given good advice to capitalists; still, in regard to the marketing of garden produce he knows nothing, and his advice would only pass muster among drawing-room agriculturists and horticulturists. It would be as well for our friends to realise the fact that we do not owe all our misfortunes to want of adaptability, that we do not meet our foreign competitors on an equal footing, and that the grower who has had an awkward season to contend with has increased expenses to meet; and why, if we are so wanting in knowledge,

do the foreigners grow Tomatos, &c., from English seed, &c.? We do not want advice, but we do want better and more regular prices; and advice which is afforded would come better from those who are in the thick of the fight. *W. Whitehead Cousins.*

ROUND BIRMINGHAM.

(Continued from p. 642.)

LEAMINGTON AND NEIGHBOURHOOD.—A drive to Leamington and round about that bright and pleasant watering-place suggests the thought, that not only have its springs healing qualities, but the pure air of the district is equally beneficial. In evidence of the salubrity of the town, the clean, bright appearance of the trees of its avenues, and in the Arboretum and pleasant walks of the Jephson Gardens, were all the more striking, as we were fresh from large towns very different in the quality of the atmosphere though not so far distant. The nursery gardens in all such places are mostly devoted to plants for cut flowers or for sale in shops, and as soon as they are ready they are packed off. A look into the Lillington Nursery of Mr. Fred. Perkins disclosed the same healthy appearance in the trees and shrubs as noted in other parts of the town. The rockery in front, the stones of which are moss-grown, and covered in places with Ivy, is very pretty even at this season, when the brightness is off most things in the open garden; in summer it must be very effective.

WARWICK SCHOOL.

Here the head master, the Rev. J. P. Way, takes much interest in gardening, and especially in the culture of hardy herbaceous and alpine plants in the outdoor garden, and of Orchids in the glasshouses, and in both of these departments good success in proportion to the space allotted has been attained. The hardy plant garden has been very showy and interesting, so much so that an extension is in progress, and as the manner of carrying out the work is simple, and the result attained satisfactory, a few remarks on the subject may be useful. First, then, the form of the garden or extension is determined on, and afterwards its walks are pegged out on the level ground. The walks are then countersunk and carried through at different gradients, the soil removed being banked-up on either side, so that by the time the deeply-cut, winding, and undulating walks are finished, there only remains to put the banks and hillocks beside them in form, fit them with suitable rockery (a small amount, merely as a shelter or protection to the plants is here used) to plant and tend carefully until established. So made and planted, the hardy garden at Warwick School has been very satisfactory, and when the new extension has been finished and had time to settle down, it will be a model garden of its kind.

In the first Orchid-house, the climbing Lily (*Gloriosa superba*) and *Aristolochia elegans* were flowering on the roof, and various *Cattleyas* making a show either of flowers or buds. Among them was a singular-looking plant bought from the Liverpool Horticultural Co., and which may be the original *Cattleya Warscewiczii*. Its flowers are very large, lighter in colour than the forms of *C. gigas* usually seen, and with the lip rounder, and, indeed, more like that of a fine form of *C. Luddemanniana*. It appears to be new to gardens, and the same thing has been flowered out of an importation made by Messrs. F. Sander & Co. In the same house, in flower, were good *Leelia præstans*, *L. Dayana*, *Dendrobium Wardianum*, good, but rather out of season; *Trichopilia tortilis*, some very bright *Cattleya labiata vera*, and good *Odontoglossum grande*, *Oncidium ornithorhynchum*, *O. varicosum*, *Rogersii*, &c., the whole very creditably grown and well arranged by Mr. Walter Rouse, the gardener here. In another house was a very good collection of *Cypripediums* of moderate size; in a cool house a good lot of *Odontoglossums*, *Masdevallias*, *Sophrontias*, &c., some of them in bloom; and in the greenhouses a large and well-grown collection of *Chrysanthemums*.

HOME CORRESPONDENCE.

GRAPE, GROS COLMAR.—In your columns of November 19, I note a reply to a correspondent, as to the proper spelling of the name of that fine Grape, Gros Colmar, or Gros Colman of some, and Gros Golman of others. With all due respect to authorities who may differ, I believe Gros Colmar is more likely to be the original and correct name than Gros Colman. The Grape was sent with others to Mr. Rivers, in November, 1849, from Mr. Vibert, of Angers; and, in the *Gardeners' Chronicle* of November 9, 1878, p. 602, Mr. T. Francis Rivers says:—"It is not at all unlikely that the clerk, in copying the invoice, mistook the French *r* for an *n*, a mistake very likely to be made." Further on, in the same communication, he says:—"Colman, as a correspondent points out, is hardly a French name, and it is very likely that the proper name is Gros Colmar." Mr. Barron, in his excellent work on the Vine, quotes Dr. Hogg, that it can be traced through Germany, where it has been for many years known as Gros Kölner; and it is of this name that the French Gros Colman, or Gros Golman, and Gros Colmar are corruptions. He also gives the authority of Herr Horvath, who remarks, "that the name 'Colman' is a corruption of the word Kölner, as stated by Dr. Hogg; but the Grosse Kölner Grape, which in German works relating to the Vine is called Bläue Urbanist Traube, is not identical with the Gros Colman, but is quite distinct." This seems to point to the fact that our Gros Colmar, or Gros Colman, is not of German origin, but French, therefore, a purely French name, is most likely to be correct. Assuming that the Grape is of French origin, the probabilities are in favour of its having been named Gros Colmar, after the town of Colmar in the Rhine Provinces, between the Rhine and the Vosges. Colmar is already a familiar name to the pomologist. In Pears, we have the names Passe Colmar, and its synonyms, Passe Colmar Doré, and Passe Colmar Gris. Then there is Passe Colmar Musque, Colmar, Colmar d'Été, and others. To anyone with even a slight knowledge of the French language, these names have the correct ring about them. With Gros Colman, Coleman, or Golman, it is different. Half-French, and half-English, the name appears to be neither good French nor good English. If you retain the English part, then Anglicise the other half, making it Great Colman; but if you retain the French word Gros, then make it French altogether, as Gros Colmar. If we retain names made up of words from different languages, it may become sanctioned by custom, but in can scarcely be correct. If Gros Colman, or Gros Golman is right, then it should be equally admissible to say, "Aut Caesar aut nobody," or, as Mr. Stelling in the *Strand Magazine* of November, facetiously remarks to his guests, "The tempus is fugiting." *Sans Peur.*

CHRYSANTHEMUMS OUT-OF-DOORS.—Those who have the above growing on walls, and as clumps in borders protected by walls and hedges, will have this mild season reaped a great harvest of beauty. In autumn, when sharp frosts have prevailed during the month of November, the results may have been good, but the duration of the flowering season has been shortened by a week or two, whereas mine are still in full bloom at this date (November 25), and might be better if the blooms were not so tempting for cutting to fill vases and flower-glasses, and there is nothing else in the garden now, if one excepts the opening blooms of the Christmas Rose, a few sad-looking Stocks and Wallflowers, and, by the way, abortive flowers of Alpine Auriculas which have hurriedly shot up a weakly truss here and there. I thin out the shoots of my Chrysanthemums to six or eight of the strongest that spring from the root, and cut these half-way back in June—about the 15th, unless they are late bloomers, and then they are not decapitated. The shoots are trained fanwise with shreds and ties, and when time can be spared, a certain amount of bud-thinning is done as soon as the buds can be seized with the point of the knife, although that is not very essential, as very nice flowers can be secured by affording the plants after the buds have appeared a weekly or bi-weekly watering with diluted house-slops. My greatest enemy is the leaf-miner, against whom a war to the knife must be waged till September, when he usually ceases from troubling. The varieties that I grow are Sunflower, Peter the Great, Madame Rendatler, Meg Merrilies, Chang, Pigny, &c., and several of the fine old incurved varieties, which always do well

But the Chrysanthemum being a hardy plant, almost any variety or kind may be planted outside; and even those flowers which one would suppose were too dense, and would therefore hold moisture in large quantities, come quite lax outdoors, and last as long as the single-flowered. Chrysanthemums do well as clumps in the herbaceous border, and if they have the stems reduced in number to six or eight, they are highly decorative objects at this season. It is a pity people should think that they are only fit to grow under glass, considering how easy it is to grow them, and how well they would furnish our very bare beds and borders in November and December. *Suburbs.*

CHRYSANTHEMUMS AT BIDDICK HALL, DURHAM.—On one of the few fine days last week I had the pleasure of seeing an exceptionally good show of Chrysanthemums at the above-named place, which the cold damp summer and autumn of this year seems to have had no ill-effect upon. Mr. Scott, the gardener, showed me one batch of the plants covering an area of 200 square feet, not a single plant of which indicated poor culture. The flowers were quite a feast to look upon—all shades of colour harmoniously blended, the foliage of a deep green and leathery texture, and the flowers ranging from 5 to 11 inches in diameter, with well-developed centres. Mr. Bunn, Golden Beverley, Peter the Great, Elaine, La Triomphante, Ada Spaulding, Charlie Sharman, Golden Dragon, President Hyde, Edwin Molyneux, and many others were excellent. A number of Chrysanthemums for succeeding these were observed in the Peach-houses and vineries. *Wanderer.*

BOUVARDIA MRS. ROBERT GREEN.—This lovely variety was sent out by Mr. May a few years ago, and was awarded a First-class Certificate by the Royal Horticultural Society. It recommends itself by the great beauty of its large trusses of flowers, which are of a clear salmon-pink colour, and flowers as finely as B. Bridal Wreath, a very good variety for winter flowering, but with too little brightness in its flowers. I do not hesitate to say that amongst the coloured Bouvardias it stands first as a winter flowerer. It is much lighter in colour in winter than in summer, and for this reason it should not be kept too warm. *Maidenhair.*

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The time draws near for another election of pensioners for the above excellent charity. Anxious candidates are applying for votes. I should like to impress on all gardeners the desirability of joining as subscribers, so that in the future, if want should overtake them, they could boldly send in their application for the pension. Many more could do so than are now enrolled on its books by a little carefulness in some way. I have known several men, now pensioners, who little thought years ago they would need any help, but have since been thankful to receive it when distress came upon them. What a comfort if, in case of need, you may rely upon £20 a year, and, should your wife survive you, she may receive £16 a year. Some of my friends say, "Vote for subscribers," that we may persuade others to subscribe, but many old and deserving applicants would thus be helpless. Having a large family myself, there were many ways for my wages, but when I mentioned the Institution to my employer, he at once gave me half, and I made up the total life-subscription. I am surprised to meet with so many who have scarcely heard of the Society. Could not we bring it by some means more and more before the eyes of the gardeners and their employers? *N. Kneller, Malshanger.*

URCEOLINA PENDULA AUREA.—If this plant had no other good qualities to recommend it than its distinct and interesting appearance when furnished with umbels of pendent flowers, they are sufficient to entitle it to be more extensively cultured than it has, apart from its uncommon appearance. It is a pretty subject, and useful as a pot-plant or for cutting purposes. Being deciduous, and flowering when bare of foliage, it is at a disadvantage compared with some others, and for this reason it is seen at its best when associated with such plants as Ferns, &c., and it can be in this way effectively employed upon rockeries, or the front of stages, &c., while it is one of the not too plentiful plants that may be placed in Orchid-houses, without appearing incongruous, and there help to enliven a dull season. Ordinary stove temperature suits it, and it grows well in a compost of peat and loam, with enough sand to keep it porous. It likes a plentiful supply of

weak liquid manure during its season of growth. Water should be gradually withheld when growth is completed, and at last it may be placed upon a shelf and kept dry until the flower-spikes begin to push. It succeeds best in 48's, which will accommodate five or six flowering bulbs. This plant belongs to a small genus, which appears to be closely allied to some others, which is evidenced by the beautiful hybrid (*Urceocharis Clibrani*), which was raised by Messrs. Clibran & Son, by crossing this species with *Eucharis grandiflora*. *T. Coomber.*

NEW TOMATO.—A variety sent out this spring under the name of Regina has proved one of the best I ever had. Sown on the same day as several other kinds, it was a fortnight earlier in ripening. It is a heavy cropper, and the fruit is handsome in shape and colour. It has such a flavour that persons unable to eat ordinary varieties enjoy it. *Jas. Towler, Carleton, Skipton.*

HEELING-IN BROCCOLI.—Growers of Broccoli will have reason to remember last winter on account of the great losses that occurred amongst Broccolis, especially in rich garden soil, where Broccoli always suffer more from frost than in fields, the soil of which is usually less rich in plant food. There can be no question but that the dwarf varieties are the hardier, and I have always found Veitch's Model superior in that respect to any other, and excellent in all respects. Cattel's Eclipse is another very hardy variety, but its being brimstone-coloured is against it for the best table. With regard to laying-in, the earlier that this is now done the better, as we cannot expect to have mild weather much longer, and any heads that are now formed run the risk of being spoiled. The better way of managing the early kinds that are now in, or turning in, is to take up all the plants, and wheel them to some sunny border or warm sheltered nook, where they can be laid tolerably close together in trenches. A little clean straw thrown over when frost is expected, or a mat or two to cover the bed will make them safe. A cold frame or pit, if either can be spared, is a good place to preserve forward Broccoli; but when so placed, plenty of air must be given. This year I have a good many in open sheds, packed closely together, and at night we hang a thick tarpaulin in front. The later ones, and those for spring use, should be heeled over, where they are growing, and any expert spadesman will do this quickly, by taking out a deep spit behind each plant and then pushing it over and burying up the stem. In doing this the earth should be brought quite up to the lower leaves, but I like to have all the plants in long continuous trenches, and I believe the work of so placing them may be carried out quicker, and by having them more together they help to shelter each other. Why Broccolis escape so much better when laid over is that besides having the stems buried, the leaves fall over the heart, and lie flat on the ground, where, as when left standing, it is a well-known fact that frost makes them hang straight down the stalks, and exposes the hearts to the full action of the weather. It is much the same if a fall of snow comes, but if the plants are in a slanting position near the earth, the snow covers them entirely up, and frost then cannot harm them. *J. Sheppard.*

ABBOTSBURY, DORSET.—The rockery, which is close on to the sea, is becoming very pretty with the different sorts of Mesembryanthemums. They astonish me, having been in bloom since last May, and are now, when the sun is out, quite a picture. They are Mesembryanthemum Eckloni, M. barbatum, M. vaginatum, M. tigrinum, M. floribundum, M. edule; the latter I have had sent me from Cannes as cuttings, 3 inches long, and now they measure 4 feet, and are growing permanently outside, as well as a host of other things, such as sweet Alyssum, Datura fastuosa, Cytisus, Helianthemum, Auricula, Lithospermum prostratum, Violas, Valottas, Calendula, &c., her ladyship being delighted with the *tout ensemble*. We have Magnolia grandiflora in bloom still; Rhododendron Thomsonianum; R. Falconeri is very fat with flower-buds—too much so, if we have frosts. Schizostylis coccinea does very well here, and we have large clumps which are all ablaze with bloom. *J. B.*

RECENT NOTICES OF GARDENS.—We beg to say there are three places of which short notices appeared recently in the *Gardeners' Chronicle*, which seem to us to deserve further some notice. At Mr. J. Chamberlains', Highbury, we constructed the ferneries, in-

side and outside, the rocky dell and the stream, waterfalls, &c. At Dawpool we constructed the fernery, inside and outside, and we may say that it is an unique piece of work, as the rock cliff planted about outside forms the wall of the front and end of the inside fernery. The rocky Fern-clad dell and the rocks joining on to the natural cliff, were built to break the force of the wind, which is so strong there. This union of the natural with the artificial is accomplished in a manner which deceives the eye. The concrete paths consist of our "Gravelite," which I have no doubt was found as perfect as the week it was laid down, a score years ago. As to the fountain, adversely criticised as being unfit for the place, the figures with umbrella are not children of ours. One more thing, still most of our rockwork may be *Ars celare artem*, the art so concealed that it is supposed to be natural, not the work of men's hands, and therefore not so noticed, to the regret of Pulham & Son.

OXFORD BOTANIC GARDEN.—In the paragraph relating to this garden on p. 620 of the *Gardeners' Chronicle*, in respect to the question of the first Curator, a quotation from Ingram's *Memorials of Oxford* is made, in which the garden walls are incidentally mentioned. The statement of their completion with the archway in 1633 is perhaps more open to question than that of the appointment of the elder Tradescant to the first curatorship. According to Professor Dr. C. Daubeny, the Botanic (Physic) Garden was founded on July 25, 1632, by Henry Lord Danvers, created Lord Danby (of Cirencester), and on that day a foundation-stone of the present archway was, with some ceremony, laid by the then Vice-Chancellor. This was subsequently completed under the direction of Inigo Jones, excepting the two statues of Charles I. and II., but the commencement of the Civil Wars, it is said, interfered with progress in the erection of the massive walls, which, with the arch, involved the expenditure of a sum stated to have exceeded £5000. The death of Lord Danby occurred twelve or thirteen years after the date of the founding of the garden, at which time the walls were not completed. However, they soon contained a collection of plants that acquired a fame that, under successive Curators, has been maintained down to the present day. It is recorded that the cost of the statues referred to was defrayed from a fine imposed on Antony à Wood, the consequence of a libel. *John E. Jefferies, Oxford.*

SOCIETIES.

YEOVIL CHRYSANTHEMUM.

NOVEMBER 16.—The exhibition of Chrysanthemums, fruits, flowers, and vegetables was the best hitherto held by the Society. Groups of Chrysanthemums, together with groups of miscellaneous plants, and arranged for effect, are always a strong feature in the Yeovil shows. The 1st prize for a group of Chrysanthemums was won by Mr. A. Crossman, gr. to Jas. Brutton, Esq., Yeovil; Mr. C. Anthony, gr. to Thomas Moore, Esq., Yeovil, was a good 2nd; and Mr. Gear, gr. to B. Penny, Esq., Yeovil, was 3rd.

Out of three groups of miscellaneous plants, Mr. Biss, gr. to Jabez Bradford, Esq., Yeovil, had the best.

Plants.—Mr. Crossman was the most successful exhibitor of Chrysanthemums in pots, gaining five 1st prizes for well-trained and profusely-flowered plants. Messrs. Anthony, Appleby, and Sampson, of Bridport, also showed well.

Double and single-flowered Primulas, pot-Violets (Marie Louise), and Mignonette (Machet), six plants of each, were well shown by Messrs. Anthony, Crossman, G. Gillingham (gr. to Felix Drake, Esq., East Coker), and S. Shire (gr. to Fred. Ewens, Esq., Yeovil).

Cut blooms were shown extensively in the several classes provided for them.

There were seven good stands of thirty-six Japanese, in not fewer than twenty-four varieties, staged in competition for the Silver Cup, or £5. Mr. William Iggulden, gr. to the Earl of Cork, Marston House, Frome, was 1st, winning by eleven points with uniformly fine blooms; Mr. Crossman was 2nd. Mr. Iggulden was also 1st for twelve blooms of Japanese, distinct.

Mr. Copp was well ahead in the class for eighteen incurved, in not less than twelve varieties, staging moderately large blooms, of fine depth, even in size, and fresh.

To Mr. A. Crossman was awarded all the three Certificates of Merit offered by the National Chrysanthemum Society for the best group of Chrysanthemums, the best specimen plants, and the best cut bloom.

Fruit was well shown throughout, judiciously-arranged classes being open for Grapes, Apples, Pears, &c., some of which were confined to tenant farmers. Many honorary exhibits (which the pressure upon our space forbids us to note) adding much to the effect of a thoroughly good autumn exhibition.

TUNBRIDGE WELLS AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 16, 17.—The competition in plants was not very spirited, but those presented were put up in good condition.

For a group of Chrysanthemums arranged for effect, Mr. Scammell, gr. to C. Reily, Esq., The Priory, Nevill Park, was easily 1st. The groups were all arranged in the stereotyped manner, but the quality of the flowers was good.

Miscellaneous groups are always interesting at Chrysanthemum exhibitions. The 1st prize in this instance went to Mr. L. Dupond, gr. to C. B. Powell, Esq., Old Hall, Southborough; Mr. W. Wikens, gr. to J. Wheelwright, Esq., Nevill Park, Tunbridge Wells, was a good 2nd.

Mr. J. Tickner, gr. to W. Gridley, Esq., 4, Broadwater Down, exhibited very good trained Japanese. Mr. Smooker had the best trained pyramids.

Cut blooms in the incurved class were not perhaps up to the average of those exhibited here. Mr. J. R. Heasman, gr. to Mrs. Oxley, Fern Place, Turner's Hill, Worth, had the best blooms, winning 1st prizes for twenty-four and twelve.

There was a good competition for Japanese blooms, Mr. Heasman winning easily again in the classes for twenty-four and twelve.

In other classes there was a good competition, the blooms being very good in some cases. Mr. J. Tickner and Mr. G. Tickner both exhibited well in miscellaneous plants. Mr. J. Tickner exhibited excellent single Chinese Primroses; the best double varieties were sent by Mr. G. Tickner. Celosias and Poinsettias were well shown by Mr. Smooker.

Vegetables in collections made an admirable display, the quality being very good indeed.

Fruit was a principal feature in the show. Black Grapes were of good colour, and some of them were well finished; and there was an admirable collection of hardy fruits of first quality.

HULL CHRYSANTHEMUM SHOW.

NOVEMBER 16, 17.—The usual show of Chrysanthemums was held on the above dates. It is an event which evokes much interest amongst the growers in the North, and is looked forward to with a sense of delight by the inhabitants of Hull and neighbourhood; moreover, it has shown wonderful vitality and progress under the management of the able chairman, Mr. P. Falconer Jameson, a widely-known amateur. The show was a remarkable one, for nowhere else are found such fine groups of Chrysanthemums, or such mixed groups, or such general good quality. Our reporter states that a distinct advance upon previous years was remarked in the cut blooms. The large hall at the artillery barracks was the scene of the friendly contest, and here the groups were arranged in the centre, and the cut blooms on benches at the sides.

For the best group, a Challenge Cup of twenty guineas value, the gift of G. Bohn, Esq., and money in addition, were awarded to Mr. G. Wilson, gr. to J. Rockett, Esq., Swanland Manor, Brough. The winner having won the cup on two previous occasions it now becomes his. The plants of which the group consisted were good specimens of cultivation, and they were put together with lightness and good taste; the 2nd prizewinner for a group was Mr. J. Coates, gr. to W. Wheatley, Esq., Hull, whose group was a very good one; 3rd, Mr. G. Cottam, Alma Gardens, Cottingham.

Specimen plants are much encouraged, and these were in considerable numbers.

For six bush-grown but not formally trained plants, 1st, Mr. Goodhill, 32, Stanley Street, Hull; and 2nd, Mr. H. Taylor, gr., Newland, Hull.

Mr. J. Hemming, gr. to E. Leatham, Esq., Beechholme, Newland, Hull, was 1st for three trained specimens, with good plants of the Rundle type; and 2nd, Mr. R. Thirak, Grove Hill Road, Beverley;

Mr. Hemming had also the best standard trained plants, and the best pyramids.

There was a class for six cut-back plants, put in with a view to encouraging the growth of dwarfish plants, and there were no fewer than nine entries, which, as a whole, made a fine display. Mr. G. Coates was 1st in this class, with plants about 3 feet high, carrying fine blooms and excellent foliage; Mr. G. Wilson was 2nd.

Cut blooms were numerous, there being no fewer than fourteen entries in the twenty-four class of incurved varieties. Mr. A. Coombes, gr. to Earl Dudley, Himley Hall, Dudley, was 1st, with leading varieties; 2nd, Mr. H. Shoesmith, gr. to M. Hodgson, Esq., Shirley Lodge, Croydon, with fresh blooms, a trifle smaller than those which won the 1st prize; 3rd, Mr. J. Myers, gr. to Earl Sandwich, Hinchbrook Castle, Huntingdon. The first two named exhibitors occupied similar positions in the competition for twelve incurved.

The competition was very strong in Japanese, no fewer than ten persons competing for the Silver Cup and money prize offered for twenty-four distinct varieties. Mr. Myers with some really very fresh blooms just succeeded in getting into the first place; Mr. G. S. Musk, gr. to Lord de Ramsay, Haverland Hall, Norwich, being his close antagonist.

Mr. D. Heaney, gr. to H. G. Schintz, Esq., Mossley Hill, Liverpool, had a strong lot of blooms in the twelve varieties class; and Mr. Musk was 2nd.

Mr. Heaney and Mr. Shoesmith secured 1st and 2nd prizes in the order of their names for twelve blooms, all to be white. The nine who competed in this class made a fine display.

The prizes for six bunches of three blooms each of the "Rundle" family, were taken by Mr. Wells, Earlewood Nurseries, Redhill, Surrey, 1st; and Mr. G. E. Smith, Paull, 2nd.

Anemone varieties were well shown. In the class for twelve, Mr. W. B. Davidson, gr. to R. Jameson, Esq., East Ella, Hull, was undeniably 1st, and Mr. G. Burrows, gr. to Sir H. Bennett, Westlands, Grimsby, 2nd.

Mr. Myers won 1st, for twelve reflexed varieties, with leading varieties. Mr. G. Smith won in the classes for both Pompon and single-flowered varieties, with creditable stands.

Numerous classes were provided for residents by the town, the chief prize-winners being Mr. D. Wilson, Park House, Cottingham; Mr. C. H. Johnson, Thorgumbald, Hull; Mr. R. Jameson, and Mr. H. Witty, the Wellingtonians, Hull. Amateurs mustered in great numbers, and their exhibits of cut blooms filled one side of the saloon. Mr. W. Gillett, Mr. J. W. Beupark, Mr. W. H. Clark, and Mr. A. W. Stanley showing well.

The premier Japanese bloom was decided to be one of Viviani Morel in Mr. Musk's stand of twelve Japanese, and the finest incurved was a golden Queen of England in Mr. Myers' stand.

The Silver Medal offered by the proprietors of the *Gardeners' Magazine* was awarded to Mr. Coombes for his stand of twenty-four incurved varieties.

First-class Certificates were awarded to Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, for Chrysanthemum Mrs. Mitchell, a buff sport with a purple shade obtained from Empress Eugénie; to Mr. Cannell for Lord Brooke; to Messrs. Pitcher and Manda for the same variety, and also to The Tribune, a promising seedling of a yellow colour; to Mr. Newbould, gr. to H. Jacobs, Esq., Rawdon, Leeds, for Mrs. Jacobs, a bronze sport from Madame Baco.

NEATH CHRYSANTHEMUM SHOW.

NOVEMBER 17.—A most successful show rewarded the efforts of this young society, the quantity and quality of the various exhibits being altogether satisfactory. The following are some of the chief prize-winners.

For twenty-four blooms, twelve incurved and twelve Japanese, Mr. Milner, gr. to Miss Talbot, Penrice, Swansea, 1st; Mr. R. C. Williams, gr. to the Right Hon. Earl of Lisburne, Crosswood Park, 2nd. Mr. Milner, 1st for twelve Japanese, distinct; Mr. Cleeve, gr. to J. H. Rogers, Esq., Llanelly, 2nd; and Mr. Williams, 3rd.

For twelve incurved, distinct, Mr. Williams was placed 1st with a splendid board; Mr. Milner taking 2nd. Mr. Williams took similar honours, too, for twelve incurved, distinct, in a class open to South Wales. Mr. Watts, gr. to Mrs. Gwyn, Dyffryn, Neath, being 2nd.

For twelve Japanese in this class, Mr. Harding,

gr. to Mr. Gough, of Yngscedwyn, was 1st; Mr. Cleeve, 2nd; and Mr. Milner, 3rd.

For twelve blooms, six incurved and six Japanese, Mr. Cleeve was placed 1st; Mr. Williams and Mr. Milner 2nd and 3rd. Mr. Milner was awarded 1st for best bloom in the show, staging a splendid bloom of John Lambert. Mr. Williams had the best three blooms of Mrs. Clibran, a good incurved; and Mr. Cleeve the best six blooms of any one variety.

Mr. Watts, The Dyffryn, led in groups, being 1st for miscellaneous group, and for group of Chrysanthemums; Mr. Smith, gr. to H. H. Price, Esq., following 2nd, and also taking 1st for trained plants.

Mr. Milner, as might be expected, staged excellent vegetables, his two 1st prize collections in two classes containing exceedingly fine dishes of kitchen garden products; Mr. Croft, gr. to Mrs. Palmer, Rheola, staged a very even 2nd prize collection in the open; Mr. Cleeve taking 3rd. Mr. Croft was a good 1st with collection of Potatoes.

Mr. Cleeve won with collection of fruit, and Mr. Croft took 2nd.

Bouquets and other floral arrangements were largely staged for competition; and also as honorary exhibits by the local trade; and in addition, Messrs. W. Clibran & Son, of Altrincham, staged several stands of Chrysanthemums, and a very fine collection of hardy fruit.

NORWICH CHRYSANTHEMUM.

NOVEMBER 17, 18.—In St. Andrew's Hall the annual autumn exhibition was, in every way, a success, the exhibits being numerous, and the quality good. The cut blooms were arranged on tables in the middle of the hall, with small plants down the centre of each. To Norwich belongs the honour of holding the first Chrysanthemum exhibition in England, which took place in 1829.

Cut blooms were the most important part of the show. For forty-eight distinct, half incurved, and the rest Japanese, Mr. Gilbert, gr. to B. Le Neve Foster, Esq., Sennowe Hall, Norwich, was 1st; and Mr. Sheddeck, gr. to the Hon. A. F. Fellowes, Honningham Hall, Norwich, 2nd.

Japanese were best shown by Mr. Gilbert, who also took premier award for twenty-four and twelve distinct. Mr. Atkinson, gr. to E. S. Trafford, Esq., Wroxham Hall, was 2nd in the larger class. Mr. Musk, gr. to Lord de Ramsay, Haverland Hall, Norwich, occupied a similar position in the minor class.

With Viviani Morel, in good condition, Mr. Atkinson secured 1st prize for six, any one variety.

Mr. Gilbert followed up his previous successes by taking first honours in the classes for twenty-four, twelve, and six, one variety incurved, in all cases staging creditable blooms.

Mr. Gilbert won 1st prize for six Anemone, six Japanese Anemone, twelve Pompon, and six Anemone Pompons, in all cases showing finely-developed blooms. To this exhibitor was also awarded the Silver Medals of the National Chrysanthemum Society for premier blooms in the incurved and the Japanese section, also two Certificates given by the National Chrysanthemum Society for cultural merit.

Plants were not shown in large numbers, but of fairly good quality. For six incurved, Mr. Bolton, gr. to J. G. Snelling, Esq., Eaton Hall, Norwich, was 1st, and also 1st for six Japanese with freely-flowered plants.

Mr. Woodhouse was 1st for six Pompons and the same number of reflexed.

There were also classes for Orchids, Primulas, fruit, and vegetables.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 23.—If any evidence were necessary to show the lateness of the Chrysanthemum bloom this season, it was seen in the number of finely-developed blooms at the above meeting, nearly one hundred varieties being sent for consideration. First-class Certificates were awarded to Mr. E. Molyneux, Swanmore Park Gardens, for incurved Mrs. Mitchell, a white sport from Empress Eugénie, having the fine build, outline, and petal of its type; to Mr. Owen, nurseryman, Maidenhead, for incurved Japanese Waban, a large pale pink, broad petalled variety, with a silvery reverse, extra fine; also for Robert Owen, a very fine incurved variety, but not equal to its possibilities, owing to the flowers having been taken from late-propagated plants; the base of the flower is bronze, with orange and gold centre. This

variety fully maintains the high estimate formed of it when exhibited for the first time in 1891; and to Japanese Mrs. Bruce Findlay, a large pale blush variety, very pretty, and nicely fringed. To Messrs. H. Cannell & Sons, nurserymen, Swanley, for Kentish Yellow, a large broad-petalled reflexed Japanese in the way of Tribune, but darker in colour, and very promising. To Messrs. Pitcher & Manda, American Nursery, Hextable, Swanley, for Japanese Primrose League, a large white reflexed Japanese, with a primrose base, quite distinct from Florence Davis, being of a different tint.

Beauté de Toulonsaine, crimson with deep buff reverse, an incurved Japanese, is very promising; it came from Messrs. H. Cannell & Sons. From Mr. E. Rowbottom, the Priory Gardens, Hornsey, came Pompon Harry Hicks, having a pale lilac-pink

Obituary.

JOHN DOWNIE.—It is with deep regret that we record the death of one of Scotland's most esteemed horticulturists, which occurred on Friday morning, November 25. On Tuesday, November 29, his remains were interred in the Grange Cemetery, Edinburgh, in presence of a large concourse of sorrowing friends who were deeply moved at being bereft of an estimable friend and one respected and trusted by all classes of the community. Whether in a business or social capacity, he was to all the same courteous "John Downie." Most of the leading nurserymen and seedsmen from and around Edinburgh were present at the funeral, as well as many of the leading gardeners, who came regardless

Sons have for a number of years been a separate firm, and Mr. Laing has migrated to Forest Hill. Being one of those pawky, shrewd and industrious Scotchmen (said by some not to be now so plentiful as in years gone by), Mr. Downie attained a high position as a man of business, and was often employed by leading proprietors to give advice in beautifying and improving their property. As a landscape gardener he had much experience, and in many fine seats examples of his knowledge and good taste may be seen. His association with horticultural literature, his interest in the Royal Caledonian Horticultural Society and in the Scottish Horticultural Association, of which he was one of the founders, his readiness to assist gardeners and all who loved gardening, made the name of John Downie for many years one of the best known and most revered among Scottish horticulturists.



THE LATE JOHN DOWNIE.

base, and a lighter centre, a seedling of 1891, large as shown, but the committee wished to see it again. An Anemone-flowered variety, named Garnet, from the same exhibitor, bright amaranth-red and silver, is very promising. Incurved Japanese Mrs. Walter Cutting, silvery-pink, was commended for its promising appearance. Mr. H. Shoesmith, gr., The Cottage, Shirley, Croydon, had blooms of two incurved varieties, viz., Flora McDonald, very like Jeanne d'Arc, but with a delicate sulphur-tinted centre; and Richard Parker, which was sent for comparison with Miss M. A. Haggas, and differing but very slightly from it. Tribune, a large pale yellow Japanese, from Messrs. Pitcher & Manda, was commended.

From Mr. J. P. Kendall, The Gardens, Templeton House, Roehampton, came flowering branches of *Ruellia macrantha*, to show its value as a plant for winter-flowering. It is grown by Mr. Kendall in an intermediate-house; the leafage is ample, and the Campanula-like flowers are of a pretty mauve-lilac colour. It appears to be a plant well deserving of a much larger culture. It is propagated by cuttings taken in April and May.

of the storm of wind and rain, to show their deep respect to one whose wisdom on all matters horticultural, whose urbanity, and integrity, endeared him to so many of his race—not only in and around Edinburgh, but throughout a great portion of Britain. His great knowledge of florists' flowers (which he laboured most assiduously to improve, and disseminate a knowledge of) rendered his services of much request as a judge in whom exhibitors had the utmost confidence. He was the originator of the now popular race of fancy Pansies, first exhibited in London in 1858. It was not in florists' flowers alone that his knowledge and ability were conspicuous, but in every branch of horticulture. Mr. Downie served his apprenticeship at Canaan House, Edinburgh, and succeeded his father as head gardener at South Bank, Edinburgh.

For more than fifty years Mr. Downie had been in business as a successful nurseryman and seedman, many years as a partner in the well-remembered firm of Downie, Laird & Laing. Messrs. Laird &

He took great interest in technical education, indeed in any scheme having for its object the welfare of gardeners. For our own parts we have lost a valuable friend and a wise counsellor, to whom we were often indebted for advice and assistance in matters relating to Scottish horticulture. The seed trade at 144, Princes Street, Edinburgh, and the nurseries at Beechill, Murrayfield, are, we learn, to be carried on under the same able management which has characterised them heretofore. Mr. Downie has left a widow, two daughters, and a son to mourn his loss. The latter, who is to assume the head of the firm, is finishing an education which has been preparing him to successfully conduct a business, which it is hoped, will retain the high repute which it attained under his father.

TRADE NOTICES.

Mr. THOMAS GODFREY, who was formerly manager of Mr. Wm. Whiteley's Hillingdon Nurseries, has taken over the lease, goodwill, and valuable stock

of plants, &c., of the late Mr. Charles Edmonds, Hillingdon.

The business of Nurserymen, Seedsmen and Florists, formerly carried on under the title of V. DÖPPLEB, Erfurt, Germany, will in future be carried on as heretofore under the title of JOHN & ED. DÖPPLEB.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCOMULATED.				No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
	Above (+) or below (—) the Mean for the week ending November 26.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.				
0	1 +	9	24	— 132 + 244	8	230	44.0	22
1	0 aver	4	27	— 351 + 303	5	184	26.6	8
2	1 +	15	8	— 223 + 215	5	182	24.4	0
3	0 aver	8	21	— 200 + 201	3	168	25.9	1
4	0 aver	7	21	— 179 + 282	3	161	22.3	3
5	1 +	23	9	— 161 + 131	2	147	22.7	7
6	0 aver	9	17	— 245 + 232	7	185	42.6	7
7	0 aver	16	10	— 177 + 174	4	186	34.0	8
8	3 +	34	0	— 149 + 122	5	173	28.1	3
9	3 +	23	2	— 186 + 133	1	207	35.4	8
10	4 +	42	0	— 126 + 149	11	181	36.5	13
*	3 +	57	0	+ 15 + 41	6	174	27.2	16

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.

Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending November 26, is furnished from the Meteorological Office:—

"The weather during this period was exceedingly dull and gloomy in all parts of the kingdom, excepting the extreme north of Scotland; a good deal of mist or fog was reported. Not much rain fell over Great Britain, but in the extreme south of Ireland the fall was very heavy and persistent.

"The temperature scarcely differed from the normal over Scotland and the greater part of England; but, in 'England, S.W.,' the 'Channel Islands,' and 'Ireland,' it was 3° or 4° in excess. The highest of the maxima were recorded on the 26th, and ranged from 57° in 'England, S.,' to 50° in 'England, E.,' and the 'Midland Counties.' The lowest of the minima were registered, as a rule, during the earlier part of the period, when the thermometer fell to 21° in 'Scotland, E.,' 25° in 'Scotland, N.,' and 27° in 'Ireland, N.,' and to between 28° and 33° in most other districts; in the 'Channel Islands,' however, the lowest reading was 39°.

"The rainfall was more than twice the mean amount in 'Ireland, S.,' and still larger in some parts of the district; but, in all other districts there was a deficit.

"The bright sunshine exceeded the mean for the time of year in 'Scotland, N.,' in all other districts it was considerably less. The percentage of the possible duration ranged from 22 in 'Scotland, N.,' and from 16 in the 'Channel Islands,' to only 3 in the 'Midland Counties' and 'England, S.W.,' to 1 in 'England, E.,' and to less than 0.5 in 'England, N.E.,'

MARKETS.

COVENT GARDEN, December 1.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, &c.]

MARKET very dull with good supplies, and prices unaltered. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 0-3 6	Melons, each ... 0 6-1 3
— Nova Scotia, ... 0 6-1 3	Pine-apples, St. Michael ... 4 0-6 0
per barrel 10 0-17 6	Oranges, Florida, per case... 14 0-18 0
Cobs, per 100 lb.... 100 0-102 6	
Grapes, per lb. ... 0 6-2 0	
Lemons, per case ... 15 0-35 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ferns, various, doz. 4 0-9 0
Aspidistra, per doz. 15 0-30 0	— per 100 ... 5 0-8 0
— specimen, each 7 6-21 0	Ficus elastica, each 1 6-7 6
Begonia, per doz. ... 6 0-12 0	Heliotrope, per doz. 3 0-6 0
Chrysanthemums, p. doz. ... 4 0-12 0	Marguerite, per doz. 6 0-12 0
— large plants, ea. 1 6-2 6	Mignonette, doz pots 6 0-12 0
Cyclamen, doz. ... 9 0-18 0	Palms, various, each 2 0-10 0
Cyperus, per dozen 4 0-10 0	— specimens, each 10 6-84 0
Dracena, each ... 1 0-5 0	Pelargoniums, scarlet, p. doz. ... 4 0-6 0
Erica, various, doz. 9 0-18 0	Solanums, per doz. 9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 4 0-6 0	Mignonette, 12 bun. 3 0-6 0
Bouvardias, per bun. 0 9 1 0	Narciss (Paper-white) French, doz. bun. 1 6-3 0
Carnations, 12 blms. 1 0-3 0	Pelargonium, scarlet, per 12 bunches ... 5 0-8 0
Chrysanthemums, p. doz. blooms 1 6-6 0	— 12 sprays ... 0 9-1 0
— p. doz. bunches 4 0-10 0	Poinsettias, per doz. blooms 4 0 9 0
Cyclamen, doz. blms. 0 3-0 6	Primula, double ... 0 6-0 9
Eucharis, per dozen 3 0-6 0	Pyrethrum ... 2 0-4 0
Gardenia, per dozen 2 0-4 0	Roses, Tea, per dozen 1 0-2 0
Heliotrope, per doz. sprays ... 0 6 0 9	— coloured, dozen 1 6-3 0
Hyacinth, Roman, doz. sprays 0 6-1 0	— yellow (Maréchal), per doz. 3 0-6 0
Lilac, white French, per bunch 5 0-6 0	— red, per dozen ... 1 0-2 0
Lilium Harrisii, doz. 8 0-10 0	— (French) p. doz. 1 6-4 0
— various, doz. 2 0-4 0	Stephanotis, per 12 sprays 6 0-8 0
Lily of the Valley, doz. sprays 4 0-9 0	Tuberose, 12 blms. 0 3-0 9
Maiden Hair Fern, 12 bunches ... 4 0-6 0	Violets, Parme-French, per bunch 3 0-4 6
Marguerite, per doz. bunches ... 3 0-4 0	— Czar, French, per bunch 2 0-2 6
Mimosa, French, bun. 1 0-2 0	— small French, p. doz. bunches 1 6-2 0
Orchids:— Cattleya, 12 blms. 6 0-12 0	— small English, p. doz. bunches 1 6-2 0
Odontoglossum crispum, 12 blms. 2 0-6 0	

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4-0 6	Mushrooms, punnet 2 0-
Beans, French, lb. ... 1 0-1 6	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 2 0-3 0	Parsley per bunch... 0 3-0 6
Carrots, per bunch... 0 4-0 6	Seakale, per basket... 2 6-...
Cauliflowers, each 0 3-0 6	Shallots, per lb. ... 0 6-...
Cucumbers, each 0 4-0 8	Spinach, per bushel 3 6-...
Endive, per dozen 2 0-3 0	Tomatoes, per lb. ... 0 6-1 0
Herbs, per bunch ... 0 9-1 0	Turnips, per bunch... 0 4-0 6
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

Market still continues very firm for best samples, at prices from 80s. to 90s. Owing to the large arrivals of foreign Potatoes, which are of fair quality, it tends to keep the prices low of our home-grown ordinary sorts; in fact, they are a drag even at the low prices they are being sold at. J. B. Thomas.

SEEDS.

LONDON: Nov. 30.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maize Pond, Borough, London, S.E., write that, as is usual at this time of the year, to-day's seed market was thinly attended, with but little business doing. For American Red, cable quotations come strong. French and German Clover seeds are held at prohibitively high rates. There is no change this week in either Alsike, White, or Trefoil. Rye-grasses are firm. For Turkish Canary Seed, Liverpool asks, 75s. per q. Hemp Seed is scarce and dear. Mustard, both white and brown, continues in active request. Low rates still prevail for Rape Seed. Blue Peas and Haricot Beans move off slowly. Linseed, Buckwheat, and Millet are without feature.

FRUITS AND VEGETABLES.

SPITALFIELDS: Nov. 29.—Quotations:—Seakale, 1s. to 1s. 6d. per punnet; Curry Kale, 1s. 2d. to 1s. 6d. do.; Spinach, 1s. 3d. to 1s. 6d. per bushel; Cabbage, 2s. to 2s. 6d.; Savoy, 2s. to 4s.; Cauliflowers, 4s. to 6s. per tally; Brussels Sprouts, 1s. to 1s. 3d. per half-sieve; Turnips, 1s. 6d. to 2s.; Carrots, 2s. to 3s.; Parsley, 1s. to 2s. per dozen bunches; Parsnips, 4d. to 8d.; Cos Lettuce, 6d. to 1s. per score; Carrots, 50s. to 60s. per ton; Endive, 6d. to 9d.; Leeks, 1s. 6d. to 2s.; frame Cu-

cumbers, 3s. to 6s.; Beetroot, 1s. to 1s. 6d.; Cabbage Lettuce, 6d. to 8d. per dozen; Mustard and Cress, 2s. per dozen baskets; English Onions, 5s. to 5s. 6d. per cwt.; Bordeaux do., 3s. to 4s. do.; Spanish do., 5s. to 8s. per case; Belgian and Dutch Onions, 4s. to 5s. per bag of 110 lb.; Celery, 9d. to 1s. 3d.; Horseradish, 1s. 3d. to 1s. 6d. per bundle; English Apples, 2s. 6d. to 6s. per bushel; American Apples, 10s. to 16s. per barrel; English Tomatoes, 2s. 6d. to 5s. per peck; foreign do., 1s. to 1s. 6d. per box; Almonds, 45s. to 50s.; Chestnuts, 6s. 6d. to 10s. 6d. per bag.

BOROUGH: Nov. 29.—Quotations:—Cabbages, 2s. to 2s. 6d. per tally; Cauliflowers, 9d. to 1s. 3d. per dozen; Spinach, 1s. to 1s. 6d. per bushel; Brussels Sprouts, 1s. to 1s. 3d. per half-sieve; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 1s. 6d. per dozen bunches; English Onions, 6s. to 6s. 6d.; Dutch do., 4s. 6d. per cwt.; Horseradish, 2s. to 2s. 3d.; and foreign do., 1s. 6d. per bundle; English Apples, 2s. 6d. to 10s. per bushel.

STRATFORD, Nov. 29.—The supplies to this market have been excellent during the past week, and, with a large attendance of buyers, a brisk trade was done at the undermentioned quotations:—Cabbages, 2s. to 3s. 6d. per tally; Savoy, 2s. 6d. to 4s. do.; Greens, 9d. to 1s. 3d. per sieve; do., 1s. to 1s. 6d. per dozen; Brussels Sprouts, 1s. to 1s. 6d. per half-sieve; do., 1s. 6d. to 2s. per flat; Cauliflowers, 6d. to 1s. per dozen; do., 2s. 6d. to 4s. 6d. per tally; Celery, 9d. to 1s. 2d. per roll; Horseradish, 1s. to 1s. 9d. per bundle; Turnips, 1s. 6d. to 2s. per dozen bunches; do., 2s. to 40s. per ton; Carrots, household, 40s. to 50s. per ton; do., cattle-feeding, 28s. to 35s. per ton; Parsnips, 55s. to 60s. per ton; Mangolds, 16s. to 18s. per ton; Swedes, 16s. to 21s. per ton; Onions, English, 100s. to 120s. per ton; do., Dutch, 3s. 6d. to 4s. per bag; Apples, English, 2s. 3d. to 5s. 6d. per bushel; do., American, 12s. to 20s. per barrel.

FARRINGTON: Dec. 1.—Quotations:—Beetroot, 1s. 6d. to 2s. per bushel; Horseradish, 1s. 6d. to 1s. 8d. per bundle; Cauliflowers, 3s. to 4s. per tally; Celery, 7s. to 8s. per dozen; English Onions, 7s. per cwt.; Spanish do., 5s. 6d. to 6s. per case; Carrots, 2s. 6d. per cwt.; Turnips, 2s. 6d. do.; Almena Grapes, 12s. to 15s. per box; Baldwin's (Avenae) Apples, 14s. to 15s. per barrel; English Apples, 3s. 6d. per basket; Blenheim, 5s. to 7s. per bushel.

POTATOS.

BOROUGH: Nov. 29.—Quotations:—English Magnums, 55s. to 65s.; Snowdrops, 60s. to 70s.; Hebrons, 60s. to 68s. per ton.

SPITALFIELDS: Nov. 29.—Quotations:—German Magnums, 2s. 6d. to 3s. per bag; Magnums, 50s. to 80s.; Regents, 50s. to 60s.; Champions, 45s. to 60s.; Imperators, 50s. to 70s. per ton.

STRATFORD: Nov. 29.—Quotations:—Magnums, 45s. to 65s.; Imperators, 55s. to 65s.; Main Crop, 70s. to 80s. per ton.

FARRINGTON, Dec. 1.—Lincoln Magnums, 80s. to 85s.; German, do., 80s. to 85s.; Bedford, do., 60s. to 65s.; Bruce, do., 90s. to 100s. per ton.

GENERAL AVERAGES: Nov. 30.—Hebrons, 60s. to 75s.; Magnums, 55s. to 70s.; Snowdrops, 60s. to 80s.; Imperators, 70s. to 80s.; Regents, 50s. to 65s.; Champions, 45s. to 65s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 105s.; do., inferior, 50s. to 75s.; hay, best, 75s. to 112s.; do., inferior, 45s. to 65s.; and straw, 23s. to 44s. per load.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending November 29, and for the corresponding period last year:—1892: Wheat, 27s. 5d.; Barley, 26s. 1d.; Oats, 17s. 7d. 1891: Wheat, 39s. 1d.; Barley, 30s. 11d.; Oats, 22s. 11d.

NOTICES TO CORRESPONDENTS.

** PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of readers.

ADVERTISEMENTS ABROAD: W. J. G. The Gardeners' Chronicle has a large foreign circulation. You will find a list of foreign nurserymen in the Garden Annual, published at 37, Southampton Street, Strand, W.C.; and a list of American journals is given in our columns at the beginning of each year.

ARISTOLOCHIA: H. P. The photograph you send represents, probably, A. gigas. We do not know of any species with the name you mention. You do not state what size the flowers are.

BOOKS: *Baroda*. You should get *Domestic Floriculture*, by F. W. Burbidge (W. Blackwood & Sons, Edinburgh and London). It is the best book on the subject you desire information upon.—*An Old Subscriber*. You will probably find all the information that you require in *Greenhouse and Stove Plants*, by Thomas Baines (London: John Murray, Albemarle Street); and *Choice Stove and Greenhouse Plants*, third edition, by B. S. Williams, Victoria and Paradise Nurseries. Published at same place.

CHRYSANTHEMUMS AT EDINBURGH: *J. D. K., Dundee*. Your enquiry should have been addressed to the Society.

DRESSING FOR PEACHES INFESTED WITH SCALE: *G. H.* Petroleum emulsion as sold by nurserymen and florists, or the old-fashioned smothering remedy of soot, clay, cow dung, and sulphur, mixed in a little water to the consistency of paint. This should be used as soon as the trees are pruned. Gishurst soap, at the rate of 4 oz. to the gallon of water, is another safe winter dressing which may be used at dead of winter, never after the envelopes of the buds have begun to burst.

LELIA GOULDIANA: *Florence*. See Rehb. f., in the *Gardeners' Chronicle*, January 14, 1888; *Orchid Album*, t. 371 (coloured figure).

LILY OF THE VALLEY IN POTS, &c.: *Janet*. No harm will come to your Lily of the Valley out-of-doors, if the pots are plunged to the rims in coal-ashes, Cocoa-nut refuse, or fine gravel. The Hyacinths have probably pushed abortive flower-spikes, owing to your having allowed the soil to become dry. The pots would do the best if placed in a damp cellar away from the light, or buried deeply in coal ashes out-of-doors—the best place for them till they have pushed above the soil to a height of 3 inches; and then, if on turning out a potful, the roots are seen to be in good quantity pushing through the mould, place them in the light (partial at first). If roots are not plentiful, return the plants to darkness for a time.

MUSHROOM SPAWN: *H. V.* The stuff sent resembles Mushroom spawn, as supplied by dealers. To ascertain if "spawn" has vitality, it must be placed in a bed made up of stable-dung properly sweetened and mixed together, and which has a steady temperature of 80° to 90°.

NAMES OF FRUITS: *W. R.* (426). Pitmaston Duchess.—*B. A.* Your Pears may be Marie Louise, as you suggest, but they were so badly bruised when they arrived that we cannot be certain.—*C. W. S.* 1, not identified; 2, Pear Beurré Clairgeau.—*E. S. H.* 1, Cellini; 2, Golden Winter Pearmain; 6, King of the Pippins; 7, Braddick's Nonpareil; others, which were much bruised, cannot be recognised.—*R. M.* Pear Duchesse d'Angoulême.—*A. C.* 1, Yorkshire Greening; 2, Waltham Abbey Seedling; 3, Stone's.—*C. K.* Doyenné Gris.

NAMES OF PLANTS: *J. M. K.* One of the best varieties of Japanese Persimmon or Diospyros Kaki we have tasted. The fruit is good if bletted like a Medlar. A similar one was figured in *Gardeners' Chronicle*, February 7, 1891, p. 171.—*A Constant Reader*. 1, Probably Cyrtopodium. How can you expect name without flowers? 2, Oncidium O'Brienianum; 3, Lygodium scandens; 4, Morea sp.: send flowers; 5, Polypodium trichodes cristatum; 6, Onychium japonicum; 7, Davallia platyptera; 8, Gymnogramma japonica.—*J. L.* Maxillaria picta.—*Erica*. Not Encomis, but Hippeastrum calyphatum. 1, Pteris (Doryopteris) palmata; 2, P. geraniifolia; 3, P. hastata; 4, P. adiantoides; 5, Anemia Phyllitides; 6, Adiantum Waltoni; 8, Gymnogramma ochracea; 10, Onychium japonicum. The Silver Fern is Gymnogramma tartarea, and the other Adiantum a form of A. capillus-veneris. Some numbers were illegible.—*Cyprus*. 1, Adiantum concinnum latum; 2, A. Pacotii; 3, Selaginella Wildenowii; 4, Dendrobium Findlayianum; 5, Probably small leaves of Dracena Shepherdii; 6, Dracena, not possible to name from leaf sent; 7, Begonia insignis.—*H. H.* 2, Dracena Baptistei; 3, D. nigro-rubra; 5, D. ferrea; 6, Gymnogramma japonica; 7, Raphiolepis ovata; 9, Phenocoma prolifera Barnesii; 10, Polygala Dalmatisana; 12, Eulalia variegata—others not recognisable without flowers.—*C. K.* Euonymus europæus.

NATIONAL CHRYSANTHEMUM SOCIETY: *Disgusted*. We cannot interfere; it is a purely personal trade

dispute, such as should never occupy the attention of a disinterested public body.

NEWLY-PLANTED VINERY: *Anxious*. By applying a mulch of horse-dung, and then above that a layer of fresh long stable litter, and covering the whole with sheets of iron, you have induced unseasonable root-growth by an excess of warmth. There may be no particular harm done as yet if the Vines have been kept cool, but should the buds have begun to move, there will be nothing that you can do but to shut up the house and begin to force the Vines. If the buds are dormant, remove all of the long litter, and the shutters also, and keep the Vines cool.

NITRATE OF SODA AND FRUITS: *H. B.* We have not read the circular you refer to, but we should not advise you to use nitrate on your Strawberry and Raspberry beds or on fruit trees, but to scratch into the soil phosphate of lime, bone-meal, or simple quick-lime, at the rate of 40 to 60 bushels per acre. The nitrate might not be amiss for any plants required to make rapid leaf-growth; and even in their case, farmyard manure would afford a better dressing, or farmyard drainings, applied twice or thrice during the period of growth, taking care to dilute it with half or three parts water, if it have much strength.

PEAR LEAVES FROM THE CAPE: *Entomosporium*. There is no trace of ordinary fungus growth in the leaves; if it is the "fireblight," that is best to be seen in the young shoots, and is credited to a species of micrococcus. I have no description of appearance of the leaves in fireblight in my United States reports. Of course, fresh tissues must be examined to see the micrococcus. *M. C.*

PLANTS FOR AFFORDING SHELTER NEAR TO AND BENEATH TREES: *J. A. V.* In addition to the Rhododendrons, Mahonia and Snowberry, add to those you purpose to plant, viz., Privet, Gorse (include the double-flowered variety), if not directly under the trees, 1, Phyllirea angustifolia; 2, Common Yew; 3, Buxus, in variety; 4, Jasminum fruticans; 5, Hypericum calycinum; 6, Ruscus aculeatus; 7, Gaultheria Shallon; 8, Daphne Cneorum; 9, D. Mezereum; 10, D. laureola; 11, Vitex Agnus-Castus; 12, Thuja plicata; 13, T. Nutkaensis. 1, 2, 3, 5, and 10 will grow fairly well beneath trees if the shade is not too dense, and the others where there is partial shade, and some direct sunlight reaches them.

ROSEBEDS AND LIME: *A. L.* The dressing, if the Roses stay in the ground, should not exceed the rate of 40 bushels per acre=1 peck per square rod. If the land is cleared of the Roses, twice this amount may be applied; but it is better to give moderate dressings at intervals of a few years than heavy ones at long intervals, the lime being constantly carried to lower depths by the action of rain and snow, and out of the reach of the plants. This fact affords another reason against burying lime deeply—it is better scratched in with a rake or pricked in with a digging-fork. It will rapidly render the vegetable and animal matters in the soil available as plant food, and will have a good effect on your light land by rendering it less porous. Apply in an unfrozen state of the ground.

TABERNÆMONTANA CORONARIA: *A. D. F.* Your plant should now be resting, and should so remain till the end of February, in a house whose temperature is 60° at night, and from 5° to 10° higher by day. If it is, as you say, a young plant in a 48-pot, it is good that it should lose its flowers for this season and next—that is, till it is much bigger and stronger. It would appear as if you had afforded the plant much water at the root for some time past, and thus induced the buds to become prominent; and now, owing to the want of sun and light, they have fallen.

COMMUNICATIONS RECEIVED.—*J. Downie*.—Powell.—*T. Lewis*.—*G. C.*—*C. C.*—*J. D. K.*—*H. S.*—*E. J. B.*—*Baron Sir Ferd. v. M.*—*C. T. D.*—*Captain J. D. S.*, Baltimore.—*H. J. E.*—*W. E. G.*—*W. W.*—*Lord A.*—*Sir J. L.*—*C. L.*—*G. C. D.*—*G. N.*—*Malcolm Dunn* (many thanks).—*W. Cradwick*, Jamaica.—*J. B.*—*H. A. B.*, New York.—*J. J. W.*—*Dr. F. K.*—*W. A. C.*—*E. C.*—*J. D.*—*D. D.*—*J. G. Baker*.—*W. T. C.*—*T. B.*—*E. J.*

PHOTOGRAPHS RECEIVED, WITH THANKS: *W. R.* Are you sure the species is correctly named.—*J. B.*

SPECIMENS RECEIVED, WITH THANKS.—*T. W. Browning*.

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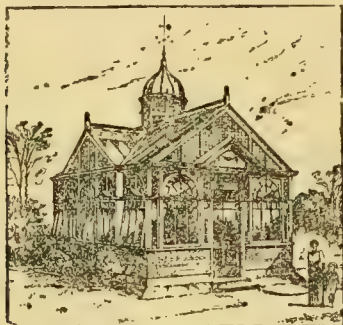
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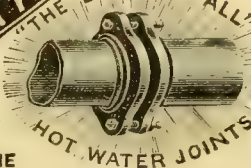
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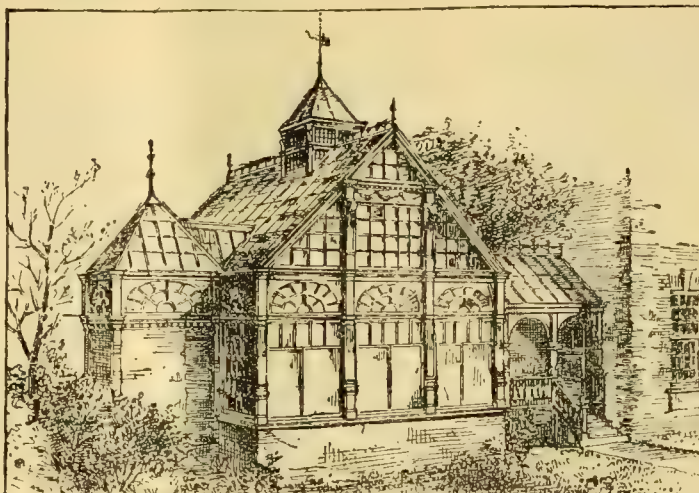


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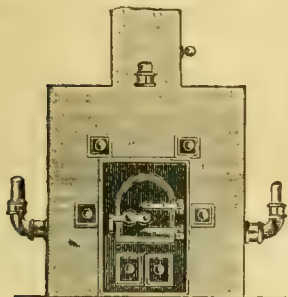
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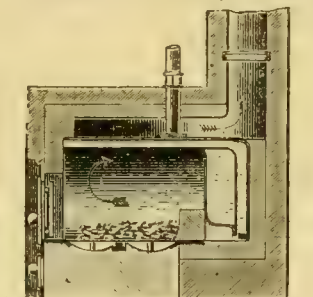
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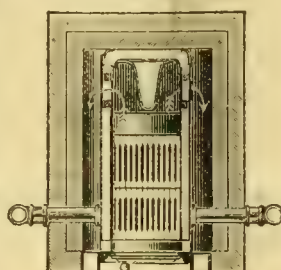
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—FRONT ELEVATION—



—LONGITUDINAL SECTION—



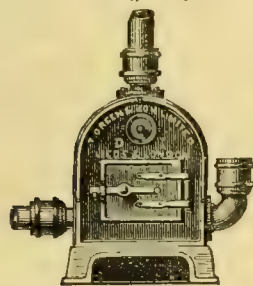
—SECTIONAL PLAN—

The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box, water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

SIZES AND PRICES.

	MB 1	3 ft. 2 in. long by 2 ft. 0 in. wide by 2 ft. 0 in. deep	1000 ft.	Price £15 0 0
	MB 2	4 0 " by 2 0 " by 2 0 "	1280	" 21 0 0
	MB 3	5 0 " by 2 3 " by 2 6 "	2200	" 32 0 0
	MB 4	6 6 " by 3 0 " by 3 0 "	4000	" 60 0 0
	MB 5	8 6 " by 4 0 " by 3 9 "	7000	" 85 0 0

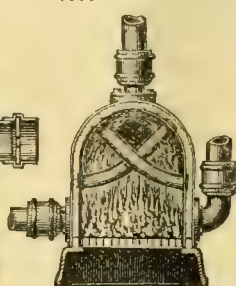
Calculated to heat 4-in. piping as follows:—



FRONT ELEVATION



LONGITUDINAL SECTION



CROSS SECTION

Sizes & Prices, including Sole-Plate, Grate-Bars, Fire Door, Dampers, & one Flow and one Return, complete.

Boilers.	Width.	Length.	Height.	Length of 4-inch Piping calculated to heat	Price.
	ft. in.	ft. in.	ft. in.	feet.	£ s. d.
B	1 6	by 3 0	by 2 0	600	16 0 0
D	1 9	by 3 6	by 2 0	800	22 0 0
E	1 9	by 4 0	by 2 2	1100	29 0 0
F	2 0	by 4 8	by 2 4	1400	36 0 0
G	2 3	by 5 0	by 2 6	1750	43 0 0
H	2 6	by 5 6	by 2 6	2000	50 0 0
I	2 9	by 6 0	by 2 6	2500	60 0 0
	3 0	by 6 6	by 2 6	3000	70 0 0

TESTIMONIALS.

Re HEATING APPARATUS.

Messrs. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS. Borough Engineer's Office, Municipal Buildings, Leeds, January 9, 1886.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings.

The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1½ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.

Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

Morley House, Bagot, St. Saviour's, Jersey, November 10th, 1886.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

Messrs. THOS. GREEN AND SON, LTD., LEEDS.

Yours faithfully, (Signed) G. W. BASHFORD.

And HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

HILL & SMITH,

BRIERLEY HILL, STAFFORDSHIRE,

And 118, QUEEN VICTORIA STREET, LONDON, E.C.



NEW PATTERN TREE GUARD, "The Porcupine."

The maximum of utility and the minimum of cost.

Constructed of Strong Iron 1½ rights and Galvanised Barbed Steel Wire.

Price 10s. 6d.

TESTIMONIAL.

"The Whittern, Herefordshire, Dec. 28, 1887.

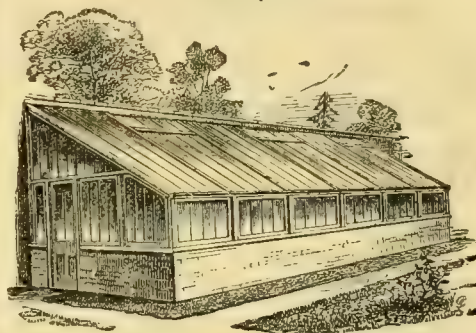
"DEAR SIR,—I have now had an opportunity of trying your PORCUPINE TREE GUARDS, and they seem quite to answer my purpose, so you may send me 50 more as before. I enclose cheque for your account.

Yours truly, RICHD. GREEN. Messrs. Hill & Smith.

W. H. LASCELLES & CO.,

HORTICULTURAL BUILDERS,

121, BUNHILL ROW, LONDON, E.C.



CONSERVATORIES, GREENHOUSES, ORCHID HOUSES, VINERIES, PEACH HOUSES, &c.

Plans and Estimates Free.

The Original and Only Makers of the GENUINE RIVETED TRENTHAM BOILERS



WITH SOLID ENDS. Also—

SILVESTER'S PATENT TRENTHAM, With Special Provision for Cleaning the Inside thoroughly (a Most Important Point).

These Boilers, after long experience, have proved themselves the Most Efficient, Economical, and Lasting Boilers extant.

Every other kind of Boilers, Sockets, Flanges, and Expansion-Joint Pipes and Fittings, for all kinds of High and Low-Pressure Heating.

FRED SILVESTER & CO.,

General Engineers, Founders, and Boiler Makers, CASTLE HILL WORKS, NEWCASTLE, STAFFORDSHIRE.

THE GARDENERS' CHRONICLE

PUBLISHER'S NOTICES.

GARDENERS' CHRONICLE TELEGRAMS.—The Registered Address for Foreign and Inland Telegrams is "Gardchron, London."

ADVERTISEMENTS.

Scale of Charges for Advertising.

Head Line charged as two.

4 Lines ..	£0 3 0	15 Lines ..	£0 8 6
5 " ..	0 3 6	16 " ..	0 9 0
6 " ..	0 4 0	17 " ..	0 9 6
7 " ..	0 4 6	18 " ..	0 10 0
8 " ..	0 5 0	19 " ..	0 10 6
9 " ..	0 5 6	20 " ..	0 11 0
10 " ..	0 6 0	21 " ..	0 11 6
11 " ..	0 6 6	22 " ..	0 12 0
12 " ..	0 7 0	23 " ..	0 12 6
13 " ..	0 7 6	24 " ..	0 13 0
14 " ..	0 8 0	25 " ..	0 13 6

AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20s.

If set across three Columns the lowest charge will be 30s.

Page, 28; Half Page, £4 10s.; Column, £3.

POSITION.—Advertisers are specially requested to note, that under no circumstances whatever can any particular position be guaranteed for advertisements occupying less space than an entire column.

Advertisements for the current week MUST reach the Office not later than Thursday noon.

All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements, 41, WELLINGTON ST., STRAND, W.C.

BREAKFAST—SUPPER

E P P S

GRATEFUL—COMFORTING.

C O C O A

BOILING WATER OR MILK.

ESTABLISHED 1851.

BIRKBECK BANK,

SOUTHAMPTON BUILDINGS, CHANCERY LANE, W.C.

THREE per CENT. INTEREST allowed on DEPOSITS, repayable on demand.

TWO per Cent. on CURRENT ACCOUNTS, on the minimum monthly balances, when not drawn below £100.

STOCKS and SHARES purchased and sold.

SAVINGS DEPARTMENT.

For the encouragement of Thrift the Bank receives small sums on deposit, and allows interest, at the rate of THREE PER CENT. per annum, on each completed £1.

BIRKBECK BUILDING SOCIETY.

HOW TO PURCHASE A HOUSE FOR TWO GUINEAS PER MONTH.

BIRKBECK FREEHOLD LAND SOCIETY.

HOW TO PURCHASE A PLOT OF LAND FOR FIVE SHILLINGS PER MONTH.

The BIRKBECK ALMANACK, with full particulars, post-free. FRANCIS RAVENSROFT, Manager.

RAILWAY

AND

OTHER ACCIDENTS

INSURED AGAINST BY

THE RAILWAY PASSENGERS'

ASSURANCE COMPANY,

ESTABLISHED 1849.

£3,150,000 paid for CLAIMS.

64, CORNHILL, LONDON. W. D. MASSY, } Secs.
A. VIAN, }



21-oz. and 15-oz. Foreign, of above sizes, in boxes of 100 feet and 200 feet super.

English Glass, cut to buyers' sizes, at lowest prices, delivered free and sound, in the country, in quantity.

"BEST LINSEED OIL PUTTY."

GEORGE FARMILOE & SONS,

LEAD, GLASS, OIL, and COLOUR MERCHANTS,
34, St. John Street, West Smithfield, London, E.C.
Stock Lists and Prices on application. Please quote Chronicle.

SAVE HALF THE COST.

GARSDIE'S

BEDFORDSHIRE
COARSE AND FINE

Is admitted by the leading Nurserymen to be the Best Quality obtainable in the Trade.

SILVER SAND

Consumers should Buy Direct from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Splendid Sand, and thus save half the ordinary cost. NO TRAVELLERS OR AGENTS.

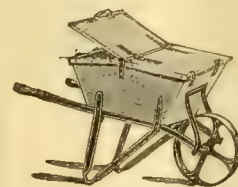
Apply direct to the Proprietor for Samples and Price free on Rail or Canal. All Orders executed with the utmost promptness and under personal supervision. Special Railway Rates in force to all parts. All kinds of PEAT supplied at lowest possible prices. Sample Bag sent on application to GEO. GARSDIE, Jun., F.R.H.S., Leighton Buzzard, Beds.

FOR PICTURESQUE ROCKWORK

In GARDENS, CONSERVATORIES, FERNERIES, LAKES, WATERFALLS, &c., also for

TERRA COTTA FOUNTAINS, KERBING, VASES, &c., try PULHAM & SON, 50, Finsbury Sq., E.C.

BOULTON & PAUL, Manufacturers, NORWICH.



WROUGHT-IRON ASHES or OFFAL BARROW, Garden Barrow & Cinder Sifter combined.

CASH PRICE.

Painted ... 30/-
Body galvanised ... extra 7/6
If fitted with registered Cinder Sifter ... 5/-

Portable Sanitary Dust Bins and Swing Barrows.

Send for Illustrated CATALOGUE, post-free on application.

CATALOGUES RECEIVED.

T. V. MUNSON, Denison, Texas, U.S.A.—American varieties of Grape Vines, Hardy Fruits, Japanese and other Foreign Plants, Blackberries, Persimmons, &c.

DICKSON (Limited), Chester—Forest and Ornamental Trees, Evergreens, &c., and Select Fruits.

F. ROEMER, Quedlinburg, Germany—Choice Flower Seeds.

K. HOPKINS, Mere Cottage, Knutsford, Cheshire—Herbaceous Plants.

WM. KERR, Seedsman, Dumfries—Seed Potatoes.

FISHER, SON & SIBRAY, Handsworth Nurseries, Sheffield—Roses.

LITTLE & BALLANTYNE, Carlisle—Forest and Ornamental Trees.

THOMAS LAXTON, Bedford—Seeds and Roots.

HARLAN P. KELSEY, Highlands Nursery, Linville Mitchell Co., N.C., U.S.A.—Native North American Ornamental Plants.

HERD BROTHERS, Victoria and Castle Nurseries, Penrith—Forest Trees, Fruit Trees, Roses, Carnations, &c.

WILLIAM WATT, Cupar and Perth—Trees of all kinds, Vines, &c.

THE "STOTT" FERTILISER AND INSECTICIDE DISTRIBUTOR Co., Manchester—"Stott" Horticultural Specialties.

DOBBIE & Co., Rothesay, Scotland—Trade List of Specialty Violas and Pot-root Dahlias.

EARLEWOOD NURSERIES LD. (Mr. Wells), Redhill, Surrey—Chrysanthemums.

DOBBIE & Co., Rothesay, Scotland—Chrysanthemums, Roses, Fruit Trees, and Dahlias.

MARTIN GRASHOFF, Quedlinburg, Germany—Agricultural, Vegetable, Garden and Flower Seeds, &c.

HOGG & WOOD, Coldstream and Duns (Scotland)—Forest and Ornamental Trees and Shrubs, Fruit Trees, &c.

MAURICE YOUNG & SONS, Milford Nurseries, near Godalming, Surrey—Trade List of Conifers, Hardy Ornamental Trees and Shrubs, Roses, Fruit Trees, &c.

GARDENING APPOINTMENTS.

MR. J. GEO. BANTING, until lately Head Gardener to HENRY BUCKLEY, Esq., Upper Boon House, Linthurst, near Bromsgrove, Worcestershire, as Head Gardener to Mrs. FRANCIS LYALL, Headley Park, Epsom, Surrey.

MR. F. STRONG, of J. & R. Thynes' Nursery, as Gardener to T. GALLOWAY, Esq., Glenlourm, Bearsden, N.B.

MR. DAVID SPIKE, as Gardener to GEO. DAWBARN, Esq., at Bowthorpe, Wisbech, Cambs.

MR. GEORGE PHILLIPS, late of Dingley Gardens, Market Harborough, as Gardener to J. MURRAY-BANNERMAN, Esq., Wyastone, Leys, Hereford.

MR. WM. BENTLEY, formerly Gardener at Ravenswood, Duppa's Hill, Croydon, as Gardener to B. LATHAM, Esq., Duppa's House.

MR. E. ASHWELL, formerly of Woodford House, Gardens, Thrapston, as Head Gardener to WALTER BARNETT, Esq., Holly Court, Ardleigh, near Colchester.

MR. W. A. SEARING, for the last eight years Head Gardener to E. MONCKTON, Esq., has been appointed Head Gardener and Superintendent at Parkwood Convalescent Home, Swanley, Kent.

MR. W. J. MITCHELSON, formerly Gardener at Clonard, Dundrum, Dublin, as Gardener and Bailiff to Lt.-Col. CRICHTON, Mullaboden, Ballymore Eustace, co. Kildare, Ireland.

MR. T. HUMPHREYS, of the Royal Gardens, Kew, has been appointed Assistant-Superintendent at the Gardens of the Royal Horticultural Society, Chiswick.

MR. HENRY AUBERTON, of Bulwark Park Gardens, Wansford, as Head Gardener to General NEWDEGATE, Arbury Hall, Nuneaton.

MR. F. SEWARK, as Gardener to the Gie Appantoo Gold Mining Co., Axim, Gold Coast Colony, Africa.

A FARMER and FRUIT GROWER will have a VACANCY at Christmas for a young Gentleman, as PUPIL, where he would be taught the Practical Work on a Mixed Farm, as well as Fruit Culture under Glass and Outside, for the London Market. A comfortable home. References given and required.—For terms, apply to FRUIT GROWER, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a GARDENER, well up in Herbaceous and Outdoor Gardening. Married, without incumbrances. Wife a good Laundress.—Apply, ARTHUR NEWALL, Esq., Wilsford House, Salisbury.

WANTED, a sharp active MAN as GROWER and PROPAGATOR.—Must be thoroughly experienced in growing Cut Flowers for Market in quantity, also Cucumbers, Tomatoes, Palms, Ferns, Bouvardias, Cyclamens, Chrysanthemums, Carnations, and all classes of Pot Stuff. State experience, references, and wages required. Permanent situation to a good man.—Apply, SMIDDY'S, Newland, Hull.

WANTED, a WORKING FOREMAN (Out-door). Must understand the Propagating and Growing of Rhododendrons, Conifers, Clematis, Fruit Trees, &c., and the general routine of Nursery Work.—State experience, where recently employed, and wages expected, to HUGH DICKSON, Royal Nurseries, Belfast.

WANTED, a WORKING OUTDOOR FOREMAN, for a medium-sized NURSERY. Must be a good Knifeman and General Propagator.—Wages and full particulars to LAXTON BROTHERS, Bedford.

WANTED, a MAN, for the Kitchen Garden, in a Private Place (several Gardeners kept).—Married, not more than two children. Wages 17s. and lodge.—Apply, by letter first, to JOHN R. BOX, Seedsman, Croydon.

WANTED, an INDOOR PROPAGATOR, at once. Permanency.—State wages and full particulars to H. ENGLISH, Clevedon Nurseries, Clevedon.

WANTED, an ASSISTANT INDOOR PROPAGATOR, under Foreman, experienced in Roses, Clematis, Rhododendrons, &c.—Apply, stating wages, with full particulars, to ALEXANDER DICKSON AND SONS, Royal Nurseries, Newtownards, Co. Down.

WANTED, a steady married MAN (without family, to work in the Houses. Must have a knowledge of Plants, Vines, Peaches, &c. Wages £1 per week, with lodge, milk, and some vegetables.—Apply to HEAD GARDENER, Abinger Hall, Dorking, Surrey.

WANTED, a MAN and WIFE (without family), to live in the house; the Man to Manage a Small Town Garden, with Greenhouse, the Woman to act as good Plain Cook. A housemaid kept; two in family.—Applicants, whose age should be about 40, may apply by letter to MED., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a MARRIED COUPLE.—The man should possess some knowledge of Alpine Plants, and be able to take the lead in General Outside Work. Wife to attend to Butty. Cottage provided, with milk and fuel.—Apply, stating full particulars and wages expected, to J. ELLICOTT, Summerville Gardens, Limerick, Ireland.

WANTED, a MAN, under 30, single preferred.—Must be experienced in growing Tomatoes, Cucumbers, &c., for the Market. State wages.—Address, P. C. A., Messrs. Penny, Bath Street, Frome, Somerset.

WANTED, an ASSISTANT, for the Order Department, and to Assist at the Counter.—Apply, stating age and full particulars, to LETCHER, DOUGLAS AND JOHNSON, New Square, Chesterfield.

WANTED, an ASSISTANT SHOPMAN one accustomed to a large Retail Counter Trade. Age 21 to 25.—Apply, stating salary expected, references, &c., to Sir JAS. WM. MACKEY, 23, Upper Sackville Street, Dublin.

WANTED, AT ONCE, a JUNIOR SHOPMAN and CLERK (with knowledge of Shorthand preferred).—State age, experience, and salary expected, to **ARMITAGE BROS.**, High Street, Nottingham.

WANTED, as ASSISTANT SHOPMAN, a young MAN, about 18, with three or four years' experience in the Seed Trade.—State wages required, to **BIRD AND VALLANCE**, Nurseries, Dornham Market.

WANTED, a THIRD SHOPMAN, in the Seed Trade.—Apply, stating experience, wages, &c., **R. C., Gardeners' Chronicle Office**, 41, Wellington Street, Strand, W.C.

WANT PLACES.

TO GARDENERS, AND OTHERS SEEKING SITUATIONS.

The Pressure upon our space at this season of the year is so great, we are compelled to state that advertisements received after 6 P.M. on Wednesday will, in all probability, be held over to the next week.

Advertisers are cautioned against having letters addressed to initials at Post-offices, as all letters so addressed are opened by the authorities and returned to the sender.

THOMAS BUTCHER can recommend several **HEAD and UNDER GARDENERS** of first-rate character and proved ability. Gentlemen seeking such may have particulars free.—Apply to **THOMAS BUTCHER**, Seed Merchant and Nurseryman, Croydon.

F. SANDER AND CO. can recommend several highly qualified and energetic **HEAD and UNDER GARDENERS**, of excellent character, and proved ability; men thoroughly fitted for all the various duties of their profession. For all particulars, please apply to—**F. SANDER AND CO.**, St. Albans.

SCOTCH GARDENERS.—I have at present several very superior **MEN** on my Register, whose character and ability will bear the strictest investigation.—**JOHN DOWIE**, Seedsman, 144, Princes Street, Edinburgh.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—**St. John's Nurseries**, Worcester.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester, are always in a position to **RECOMMEND MEN** of the highest respectability, and thoroughly practical at their business. All particulars on application. Telegraphic and Postal Address—"DICKSONS, CHESTER."

SANDERS, St. Albans, can thoroughly **RECOMMEND** several first-class **HEAD GARDENERS**.

GARDENER (HEAD).—**W. B. FISHER**, Gardener to the **EARL CAWDER**, Stackpole Court, Pemroke, will be pleased to recommend Charles Davies to any Lady or Gentleman who is in want of a first-class man.

GARDENER (HEAD), where several under are employed.—Middle-aged, married, one boy. Well experienced in the various branches, especially Fruit Culture. Can be highly recommended.—**HORTUS**, 24, Grosvenor Road, Canonbury, N.

GARDENER (HEAD), where two or three are kept; age 27.—**J. ANDERSON**, Charman Dean, Worthing, wishes to recommend his Foreman (**J. Skinner**) to any Lady or Gentleman requiring a good practical man. Twelve years' experience. Abstainer.

ORCHID GROWER and HEAD GARDENER.—Advertiser has had nearly twenty years' first-class experience, including the charge of two of the largest collections in the country. First-class characters; can be thoroughly recommended.—**ORCHID**, Westmore Villa, Uxbridge Road, Slough, Bucks.

GARDENER (HEAD), where several Under are kept.—Middle-aged, married, no family; understanding the profession in all branches, including Orchids. Can be highly recommended.—**G.**, 6, Treherne Road, Mortlake, Surrey.

£5 BONUS will be given for information leading to Advertiser's appointment as **HEAD GARDENER** where five or six are kept. Age 40, single till suited; twenty four years' practical experience. Highly recommended.—**W. S.**, Front Lodge, Himley, near Dudley.

GARDENER (HEAD); age 35, married.—**Mr. W. SWAN**, Gardener and Steward to **J. P. Bryce, Esq.**, Bystock, Exmouth, can with confidence recommend a thoroughly practical man, conversant with the requirements of a large establishment, and all things pertaining to horticulture; first-class Orchid-grower, and General Plantsman. Highest possible character.

GARDENER (HEAD).—£10 Bonus will be given by Advertiser for information of any gardening changes that will lead to obtaining an engagement as above. Thoroughly practical in all branches. Highest possible character.—Particulars to **F. L.**, Osborne Cottage, Pelhurst Road, Ryde, Isle of Wight.

GARDENER (HEAD); age 30.—**Mr. A. HOSACK**, Glynllivon Gardens, Carnarvon, can with confidence recommend his late Foreman. Well versed in Plant, Fruit, and Vegetable Growing. Full particulars on application.

GARDENER (HEAD).—**H. HAMILTON**, Gardener to the **Earl of Lovelace**, can confidently recommend his Foreman, who has been with him three and a half years; understands Vines, Melons, Tomatoes, Peaches, Stove and Greenhouse Plants. Thirteen years' experience. Thoroughly practical.—**W. ARTHUR**, East Horsley Towers, Leatherhead.

GARDENER (HEAD).—Age 44, married; thoroughly practical and conversant with the requirements of a good establishment. Ten years' good character from last employer.—**H. COOK**, Gardener, Dorking.

GARDENER (HEAD).—Age 30, married.—A Lady wishes to recommend her late Head Gardener. Thoroughly practical. Life experience in all branches, including Vines, Peaches, Orchids, &c. Abstainer.—**NEGRIS**, Much Hadham, Herts.

GARDENER (HEAD WORKING).—A **GENTLEMAN** can with confidence recommend his late Head Gardener for seven years; energetic and trustworthy; thorough Plant and Fruit Grower; Early and Late Forcing; good at Orchids, Roses, Chrysanthemums, and Mushrooms.—**BRIT-TAIN**, 32, Archway Road, Upper Holloway, N.

GARDENER (HEAD WORKING).—Age 43, married, three in family, youngest 7 years; experienced in Stove and Greenhouse Plants, Peaches, Vines, and General Gardening. Leaving through breaking up of establishment. Highest references from present employer, twelve years as Head; twenty-eight years in present family.—**J. WHEELDON**, Lords Meade, Tottenham.

GARDENER (HEAD WORKING); age 35, married, no family.—A **LADY** recommends the above as thoroughly competent, steady, obliging, and trustworthy. She parts with him for no fault, and can give him six and a half years' excellent character.—**T. C.**, Geys House, Maidenhead.

GARDENER (HEAD WORKING).—Age 29; one child, aged five years; thirteen years' experience in good gardens; good testimonials.—**F. WELLS**, 29, Hampstead Road, Dorking.

GARDENER (HEAD WORKING), where two or more are kept.—Age 30, married when suited; excellent testimonials for over sixteen years' practical working in all branches in good establishments. Three years in last situation as Second. Reference kindly permitted by late employer, **E. F. Studt, Esq.**, Oxtown House, Exeter.—**H. MORRIS**, 19, Bramber Road, West Kensington.

GARDENER (HEAD WORKING), where two or more are kept.—Age 35, married; thoroughly understands Grapes, Peaches, Melons, Stove and Greenhouse Plants, Pleasure Grounds, and Kitchen Garden. Leaving through breaking up.—**SHEPHERD**, 13, Church Road, Bromley, Kent.

GARDENER (HEAD WORKING).—Age 31, married, one child; 17 years' first-class practical experience in all branches; excellent reference; total abstainer.—**W. BUTON**, Cowesfield Gardens, Salisbury.

GARDENER (SINGLE-HANDED, or otherwise).—Age 26; good experience; active and trustworthy. **Mr. HALL**, Shipplake Court, Henley-on-Thames, confidently recommends a young Man as above.

GARDENER (SECOND, or SINGLE-HANDED).—Age 27; experienced in Flowers, Fruit and Vegetables. Four years good character from last place.—**W. KEEN**, Maywood, Kenilworth Road, Leamington.

GARDENER (SECOND), Inside or under Foreman, in a good establishment. Particulars as to character and ability may be had of the gardener.—**W. WILSON**, Bowes Manor, Palmer's Green, N.

GARDENER (SECOND, or good SINGLE-HANDED).—A young man, age 27, is very desirous of a situation as above. Total abstainer. Can be well recommended. Thoroughly practical in all branches. Fifteen years' experience.—**H. C.**, 1, Odessa Villa, Hampton Hill.

GARDENER, Private or Nursery.—Age 21; four years' good character as Second where three are kept.—**J. GOBLE**, West House Cottage, Albourne, near Hassocks, Sussex.

GARDENER (UNDER).—Age 27; good Pleasure and Kitchen Gardener. Understands Cows, if required. Leaving through Gentleman giving up. Twelve years' good character.—**F. WATTS**, Chacombe Priory, Banbury.

MANAGER, or FOREMAN, Grower of Tomatoes, Cucumbers, Grapes, Cut Flowers, Mushrooms, &c., for Market.—Age 44, married; good references for ability, &c.—Please state particulars to **A. B.**, Mr. Cook, Baker, Havock Lane, Maidstone, Kent.

MANAGER, or HEAD SHOPMAN.—**ADVERTISER** desires situation as above. Sixteen years' first-class experience in leading English and Scotch Houses.—**M. N.**, *Gardeners' Chronicle Office*, 41, Wellington Street, Strand, W.C.

PROPAGATOR (SOFT-WOODED) and FERN GROWER.—Stove and General Market Pot Stuff; ten years' experience; good references.—**H. C.**, 40, Maxted Road, Peckham, S.E.

FOREMAN or PROPAGATOR.—Life experience in Market and Retail. Ferns, Palms, &c.; used to making up.—**E. CLEMENTS**, Florist, Finchley.

ROSE FOREMAN.—Wanted, by one who has made a special and practical study of Roses, a situation as above, where these are extensively grown, either in Nursery or Garden.—**A. PIPER**, Uckfield, Sussex.

FOREMAN, in a good establishment.—Age 26; thirteen years' experience. Thorough knowledge of Orchids, Fruit, and Plant-growing. House Decorations. Twelve months previous as Foreman.—**L. H.**, 4, Tadema Road, King's Road, Chelsea, S.W.

FOREMAN.—**Mr. McLEOD**, Dover House Gardens, Roehampton, S.W., can with confidence recommend **A. Bullocke** to any Gardener requiring a good all-round Foreman. Age 25; eleven years' experience.

FOREMAN.—Age 26; well experienced in Vines, Peaches, Chrysanthemums, Stove and Greenhouse Plants, Table Decorating, &c. Twelve years' experience in good establishments.—**A. C.**, 2, Laurel Cottage, Warren Road, Reigate.

FOREMAN.—**A. DUNNING**, who for the last two years has been general Indoor Foreman for **E. D. Shuttleworth & Co.**, Peckham Rye, and who was previously with Messrs. **J. Veitch & Sons** seven years, is open to immediate re-engagement in the same capacity. Has had good experience in Covent Garden, and well acquainted with London Shop Trade.—254, Peckham Rye, London, S.E.

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JOURNEYMAN.—Age 26; eight years' practical experience in private places and nurseries. Understands Landscape Gardening, Stove and Greenhouse Plants, Propagating, and Flower Gardening.—**F. WEISBACH**, Dersingham, King's Lynn, Norfolk.

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Seed Trade.

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SHOPMAN.—Age 29; thirteen years' practical experience in all branches of the Seed Trade.—**R.**, *Gardeners' Chronicle Office*, 41, Wellington Street, Strand, W.C.

Seed Trade.

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SHOPMAN.—Age 25; upwards of ten years' experience. Abstainer. Good references.—**T. B.**, *Gardeners' Chronicle Office*, 41, Wellington Street, Strand, W.C.

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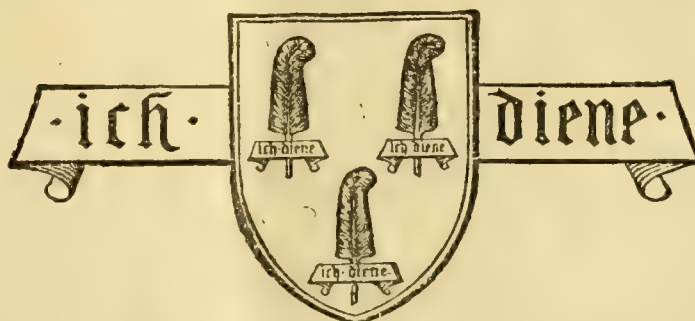
HER MAJESTY

The Queen.

AND

HIS ROYAL HIGHNESS THE

Prince of Wales.



The GARDENERS' CHRONICLE

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Sellers' selection, strongest plants. Carriage and postage free. Cash with order. ROSE CATALOGUE FREE on application. Buyer's selection at Catalogue prices.
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COLLECTION OF
ESTABLISHED ORCHIDS.

UNUSUALLY IMPORTANT SALE,
ABSOLUTELY WITHOUT RESERVE,
To take place on the Premises,

BLENHEIM PALACE GARDENS,
Near WOODSTOCK.

On MONDAY, DECEMBER 19, 1892, and
SEVERAL FOLLOWING DAYS,

BY
MESSRS. PROTHEROE AND MORRIS,
Auctioneers, 67 and 68, Cheapside, London, E.C.

For Particulars see Descriptive
Advertisement on next page. 

50,000 Havana Cigars.

By ORDER of the MORTGAGEES.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, at their Central Sale Rooms,
67 and 68, Cheapside, London, E.C., on MONDAY, Decem-
ber 12, at 12 o'clock, 50,000 genuine HAVANA CIGARS,
comprising Cabanas, Flor de Cubas, J. S. Murias, Carolinas,
Larranagas, Rel del Roy Boquets, and 2,000 Villar y Villar in
cabinets of 25 each, of super extra quality, very rare.

On view morning of Sale, and Catalogues had.

Bath.—Tuesday Next.

IMPORTANT UNRESERVED CLEARANCE SALE of
SPECIMEN EXHIBITION PLANTS, ORCHIDS, FERNS,
&c., By order of C. W. Mackellop, Esq., who is leaving the
neighbourhood.

MESSRS. PROTHEROE AND MORRIS are
favoured with instructions to SELL by AUCTION, on the
Premises, the Bageecha, Park Gardens, Weston, Bath
(about 1½ mile from Bath Railway Station, and close to Weston
Station on the Midland Railway), on TUESDAY NEXT,
December 13, at 12 o'clock precisely, without reserve, the
valuable collection of well-grown

SPECIMEN EXHIBITION PLANTS,

which have been shown so successfully at numerous
shows, comprising—

100 AZALEA INDICA,

including Thirty splendidly-trained plants.

ALLAMANDAS of sorts, BOUGAINVILLEAS, DIPLADE-
NIAS, CLERODENDRONS, ANTHURIUMS of sorts,
LAPAGERIA ALBA and RUBRA. A number of

GRAND SPECIMEN ERICAS,

Amongst them Irbiana, Victoria Regina, Ventricosa alba
tincta, V. Rothwelliana, and Kingstonsiensis.

BEAUTIFULLY-COLOURED CROTONS.
IXORA PILGRIMII, DUFFEL, WESTI, WILLIAMSI.

STEPHANOTIS FLORIBUNDA, BIGNONIA REGALIS,
ARISTOLOCHIA ELEGANS.

CHOICE FERNS, embracing Nephrolepis davallioides furcata,
Adiantum Williamsii, Selaginella cuneata arborea, Gymno-
grammas, Nephrolepis exaltata, 100 Adiantum cuneatum.

About 150 lots of well-grown

ESTABLISHED ORCHIDS,

Consisting of Cattleyas, Laelias, Dendrobiums, Vandas, Cym-
bidiums, Cyrtopodiums, Cologynas, Angucums, Oncidium
macranthum, Odontoglossum Alexandriae and Rossi, Lycastes,
Masdevallias, Cologynas cristata alba, Lycaste Skinneri alba,
Laelia grandis tenebrosa, mentioned in the Garden, Dendro-
bium Phalenopsis Schroderae Dillense, and other special
things.

200 CYCLAMENS, 100 PRIMULAS, POINSETTIAS, CINE-
RARIAS, GARDENIAS, DRACENAS, GLOXINIAS, CALA-
DIUMS, and a great variety of miscellaneous STOVE and
GREENHOUSE PLANTS.

GARDEN IMPLEMENTS.—Comprising Garden Engine,
Iron Garden Roller, Hand and Box Barrows, Ladders, Gal-
vanised Tank, Sundry Tools and Flower Pots.

May be viewed on the Saturday and Monday prior to the
Sale. Catalogues may be had of Mr. W. Bennett, the Head
Gardener, on the Premises, and of the Auctioneers, Estate
Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The valuable Freehold Estate of about 8 acres, with
the several Greenhouses and Gardener's house thereon, will be
sold by Auction early in the year 1893, unless previously
disposed of by private contract. Terms and particulars may
be had on application.

Wednesday Next.

GREAT SALE OF FILMY AND OTHER FERNS.

IN SPLENDID CONDITION.

JUST ARRIVED FROM NEW ZEALAND,

including 120 FINE PLANTS OF TODIA SUPERBA.
A fine lot of the scarce Kidney Fern, TRICHOMANES RENI-
FORME, several HYMENOPHYLLUMS, such as DILA-
TATUM, CRISPATUM, and DEMISSUM. Being all from
New Zealand, these are most suitable for growing in Cool
or Temperate-houses. Also 18 fine specimens of CYATHEA
SMITHII, a scarce and beautiful TREE FERN, with good
straight stems or trunks, from 3 to 6 feet high.

Included in this Sale will be three ALSOPHILA CRINITA, from
Ceylon, one of the rarest and most handsome of Tree Ferns.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY
NEXT, December 14, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Wednesday Next.

6955 LILIUM AURATUM, wonderful Bulbs; unquestionably
the finest received this season.

380 " " MACRANTHUM
1890 " " SPECIOSUM RUBRUM
792 " " ALBUM
576 " " MELPOMENE
2400 " " LONGIFLORUM
1133 " " KRAMERI
500 " " CORDIFOLIUM

being the contents of 170 cases, just received from Japan,
in grand condition.

250 STANDARD ROSES, 5000 LILY OF THE VALLEY
Berlin Crowns, 10 cases of NARCISSUS, from the Scilly
Isles; choice-named NARCISSUS, 1000 BEGONIAS, 20
Brisbane LILIES, PANEREA species, AMARYLLIS,
Veitch's choice strain; a quantity of FILMY and other
FERNS, just received from New Zealand; 3 ALSOPHILA
CRINITA, from Ceylon; and DUTCH BULBS.

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Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY
NEXT, December 14, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Wednesday Next.

A NEW GOLDEN-YELLOW FLOWERED CALLA
from Africa, provisionally named

THE PRIDE OF THE CONGO.

Sender writes:—"On returning from Lake Nyanza, after
experiencing many hardships and dangers from the natives
and wild beasts, I discovered a magnificent golden-
yellow Lily growing in swamps, with Nymphneas and
various other water plants, samples of the different
varieties I am sending. A diligent search was made by
the men under my charge, with the result of finding
about 200 plants in all. You will find the tubers are quite
distinct from the ordinary Lily of the Nile. I have
never seen anything like it. No doubt this will be found
a grand addition to the genus."

MESSRS. PROTHEROE AND MORRIS will
include the above in their SALE on WEDNESDAY
NEXT, December 14, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Tuesday Next.—Cheshunt.

GREAT SALE OF FRUIT TREES.

Important to FRUIT GROWERS, MARKET GARDENERS,
and GENTLEMEN requiring FRUIT TREES for planting
to bear next season.

MESSRS. PROTHEROE AND MORRIS are
instructed by Messrs. T. & G. Oyler (who are compelled
to clear the ground), to SELL by AUCTION, on the Premises,
the Elms Fruit Ground, Park Farm, Cheshunt, 1½ mile from
Cheshunt Station, on TUESDAY NEXT, December 13, at 12
o'clock precisely, 17,000 clean-grown Bush and Standard FRUIT
TREES, 4 to 6 years old, all in splendid condition for trans-
planting, consisting of Lord Suffield, Wellington, Early Juhun,
Keswick Codlin, King Pippin, Hawthornden, Warner's King,
and many other Apples; 300 Pond's Seedling Plum, Victoria,
New Orleans, and other varieties; and about 6000 William,
Hazel, Calabash, Beurre de Capiaumont, and other Pears.

May be viewed any day prior to the Sale. Catalogues
may be had on the Premises; of Messrs. T. AND G. OYLER,
Spitalfields Market; and of the Auctioneers, 67 and 68,
Cheapside, London, E.C.

N.B.—The Auctioneers desire to call attention to this im-
portant Sale. The trees have been grown by Messrs. Oyler
expressly for planting in their own grounds, and consist of
such varieties as they have found from their experience to be
most profitable for market purposes. The trees have been
specially prepared for removal to the new Farm which the
Vendors were about to take, but the negotiations having
fallen through, with regard to planting it with trees, Messrs.
Oyler are compelled to sell them for want of room.

Tuesday Next.

150 Standard ROSES, 40 lots of Stove and Greenhouse Ferns,
from an English Nursery; 27,000 LILY OF THE VALLEY,
Berlin crowns; and about 500 lots of DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at their Central Sale Rooms,
67 and 68, Cheapside, London, E.C., on TUESDAY
NEXT, December 13, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Great Unreserved Sales.

TUESDAY, WEDNESDAY, and THURSDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, at their Central Sale Rooms,
67 and 68, Cheapside, London, E.C., as above, at 12 o'clock
each day, large Consignments of first-class—

NARCISSUS, HYACINTHS
CROCUS, TULIPS,
and other Bulbs from Holland. Lotted to suit the Trade and
Private Buyers. About 3500 lots, without reserve.

On view morning of Sale, and Catalogues had.

Thursday Next.—Plants.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, at their Central Sale Rooms,
67 and 68, Cheapside, London, E.C., on THURSDAY NEXT,
December 15, at 12 o'clock, 60 CAMELLIAS, 70 AZALEA
MOLLIS, 60 DRACENAS, 60 PALMS, also FERNS and other
PLANTS from Belgium, Herbaceous PLANTS, Hardy Border
BULBS, and 350 lots of DUTCH BULBS.

On view morning of Sale, and Catalogues had.

Friday Next.

ESTABLISHED ORCHIDS FROM VARIOUS OWNERS.

MESSRS. PROTHEROE AND MORRIS will
include in their ORCHID SALE on FRIDAY NEXT,
December 16, at half-past 12 o'clock, 400 lots of ESTAB-
LISHED ORCHIDS. Amongst them will be found good plants
of Lycaste Skinneri alba, in flower; Cologynas cristata alba,
with spikes; Odontoglossum bictonense album, O. elegans
(true), Cattleya Mastersonia (hybrid), Sobralia xantholeuca,
Laelia autumnalis alba, L. Rothschildiana, Cyrtopodiums,
Masdevallias, and other Orchids. Also 10 cases of Cologynas
and Calanthe veratifolia, received direct for Unreserved Sale.

Friday Next.

DIRECT IMPORTATION for Unreserved Sale just received in
first-class condition; 10 cases comprising 200 CELOLYNE
ASPERATA (LOWII), 900 CALANTHE VERATRIFOLIA,
500 CELOLYNE SPECIES (probably new), and Eight
other species (Consigner states these are supposed to be
new), 200 AERIDES SUAVISSIMUM, &c.

MESSRS. PROTHEROE AND MORRIS will
include the above in their ORCHID SALE on FRIDAY
NEXT, December 16.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

A LARGE IMPORTATION of HYACINTHS, TULIPS, CRO-
CUSES, NARCISSUS, and other DUTCH BULBS,
LILUMS from Japan, 40,000 Berlin Crowns of LILY OF
THE VALLEY, 1000 Clumps, 5000 SPIRÆA JAPONICA.
Collection of Hardy SHRUBS and Ornamental PLANTS,
1000 Mixed Single BEGONIAS, PÆONIES, GLOXINIAS,
1000 LILIUM HARRISI, L. CANDIDUM, FREESIAS,
Choice GLADIOLI, AZALEA MOLLIS from Ghent,
Dwarf ROSES, ANEMONES, &c.

MR. J. C. STEVENS will SELL the
above by AUCTION, at his Great Rooms, 38, King
Street, Covent Garden, W.C., on WEDNESDAY and SATUR-
DAY NEXT, December 14 and 17, at half-past 12 o'clock
precisely, each day.

On view mornings of Sale, and Catalogues had.

WANTED to RENT, about an ACRE of
GROUND, with a few Greenhouses, well heated; small
Dwelling-house attached preferred; from 8 to 12 miles from
Covent Garden.—G. ROBERTS, 5, Roselands Cottages, Rose-
lands Nursery, Seaside, Eastbourne.

TO BE LET, a GENTLEMAN'S GARDEN,
with ten Glass-houses and a quantity of Lights. Yearly
agreement. Rent, including rates and taxes, £10. Apply to—
G., 11, Bentinck Street, Cavendish Square, London, W.

Warwickshire.—Erdington Hall Estate.

TO BE LET, an excellent FARM, situate
within 3 miles of Stephenson Place, Birmingham. There
is a large House and extensive Buildings, and the Land is well
adapted for Market Gardening, being close to the City. It
consists of Arable and Pasture Land, and is about 173 Acres.

For Rent and Particulars, apply to Messrs. J. C. FOWKE
AND SON, Solicitors, 120, Colmore Row, Birmingham.

Hampton, Middlesex.

TO FLORISTS.—FOR SALE, the LEASE,
twelve years unexpired, of ½ Acres Land, Dwelling
House, Stabling, and one Glass House. Stock at valuation.—
A. B. C., Mr. Abbott, 2, Heathfield Villas, Hampton, Middlesex.

FOR SALE, a NURSERY and FLORIST'S
BUSINESS; 7 Green and Stove Houses (New), about 6
Acres. Established over 100 years. Half a mile from Station,
and near important City. Well stocked. Price, £3600. Free-
hold. Unusual and exceptionally good opportunity.

ALDER AND CO., 25, Cannon Street, London, E.C.

Cheltenham.

TO FRUIT GROWERS, MARKET GARDENERS, and
OTHERS.

THE PROPRIETOR of one of the most
valuable MARKET GARDENS in the county wishes to
DISPOSE of HALF-SHARE of PARTNERSHIP, or, if
desired, the whole may be acquired as a going concern. The
Gardens extend over about 11 acres, and are well stocked with
the choicest Fruit Trees. The extensive Vineries, Peach-
house, and Greenhouses, together with a pretty Villa
Residence, Stabling, Shedding, Piggeries, &c., are all most
conveniently arranged up in the property. Ingoing by Valua-
tion. To a moderate capitalist the above offers an exceedingly
rare and lucrative investment.

For further particulars apply to S. P. VARDER, Estate
Agent, Auctioneer and Valuer, Albion Chambers, Clarence
Parade, Cheltenham.

BOILERS and PIPES.—Some thousands of
feet of 4-inch, 3-inch, and 2-inch Iron Piping, 5 Boilers,
5 Vineries, loose Glass, some hundreds of Maidenhair FERNS,
&c., for Sale, cheap. Apply to—
J. LANCASTER, Barnett Cottages, E-ther Road, Leyton-stone.

THREE HANDSOME CYGNETS.—Would
EXCHANGE for other Ornamental WATER-FOWL.
—Offers to Superintendent, Queen's Park, Longton, Staff.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD AND NURSERIES,
CARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following:

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS,
FERNS, &c., &c.

CATALOGUES, with full particulars, post free
on application.

Special Quotations to the Trade.

The BLENHEIM COLLECTION OF ORCHIDS.

UNUSUALLY IMPORTANT SALE. ABSOLUTELY WITHOUT RESERVE.

MESSRS. PROTHEROE & MORRIS

Are honoured with Instructions from the Executors of His Grace the DUKE OF MARLBOROUGH, deceased, to
SELL by AUCTION, WITHOUT RESERVE, on the PREMISES—

BLENHEIM PALACE GARDENS, near WOODSTOCK, on MONDAY, December 19, and Following Days,
Commencing at 12 o'clock to the minute each day, the entire Collection of about—

25,000 ESTABLISHED ORCHIDS,

One of the most attractive Sales that has ever taken place, remarkable especially for the unprecedented quantity of Specimen Plants, the large number of fine varieties, and their generally healthy condition. Amongst the many thousands to be sold may be specially mentioned:—

15,000 *Odontoglossum crispum*, the best known type, including about 10,000 growing in beds, lotted to suit large buyers.

- 800 " *Pescatorei*.
- 500 " *citrosimum*.
- 500 " *vexillarium*.
- 30 " *Harryanum*, many of them large pieces.
- 80 " *Insleayi* and *splendens*.
- 50 " *cirrosium*.
- 50 " *triumphans*.
- 100 " *grande*.
- 60 " *nebulosum*.
- Quantities of *Roezli*, *bictonense*, *blandum*, *Halli*, *Uro Skinneri*, and others. Also—
- " *luteo-purpureum*.
- " *Andersonianum*.
- " *Ruckerianum*.
- " *polyxanthum*.
- " *baphicanthum*.
- " *hebraicum*.

200 *Oncidium macranthum*, *hastiferum*, *undulatum*, *loxense*, and *superbiens*.

40 *Oncidium ornithorrhynchum*, *cheiroporum*, and others.

80 *Lælia anceps alba*, including several magnificent masses, many in spike.

100 " *anceps Morado*, *Barkeri*, and others.

50 " *purpurata*, mostly large pieces, and the finest of varieties.

30 " *harpophylla*, some of the grandest pieces ever seen.

" *elegans*, *elegans Turneri*, *Marlboroughensis*, several very fine pieces.

200 *Cattleya Mendeli*, embracing many matchless specimens remarkable for their size and the magnificence of the varieties.

150 " *gigas*, and *gigas imperialis*, several of which are plants of enormous size, and of the best type.

90 " *Sanderiana*, some of which are very fine.

180 " *Gaskelliana*.

180 " *Mossiae*, some of which are remarkable pieces.

100 " *aurea* and *Dowiana*.

30 " *Lawrenceana*, embracing some wonderful specimens.

150 " *Trianae*, amongst which will be offered many large specimens and special varieties.

50 " *Percivaliana*.

" *Warneri*, *Harrisoniae*, *Schroderae*, *citrina*, *picturata*, *Bowringiana*, *speciosissima*, *Skinneri alba*, *Skinneri* all in quantity, and many specimens amongst them.

3 *Cypripedium Morganæ*, 2 of which are very fine pieces.

18 " *grande*, mostly large plants.

20 " *Sanderiana*, nearly all plants of great size.

" *selligerum majus*, several grand specimens.

25 " *caudatum*, some very large.

" *Sedeni candidulum*, 6 splendid plants.

" *cardinale*, fine specimen.

" *Veitchi*, fine strong plant.

Cypripedium Schroderi, 2 fine plants.

25 " *Lawrenceanum*, mostly plants of large size.

" *Elliottianum* (*Rothschildianum*), several exceptionally fine pieces.

20 " *hirsutissimum*, all fine pieces.

30 " *niveum*.

50 " *insigne*, *albo-marginatum*, *punctatum*, *violaceum*, *Maulei*, mostly specimens, fine for cutting.

15 " *Stonei*, wonderful specimens.

" *œnanthum superbum*, strong plant.

" *Spicerianum magnificum*, one large piece and several smaller plants.

" *Harrisianum*, *Druryi*, and others.

Uropedium Lindeni.

36 *Vanda tricolor*, *suavis*, *insignis*, *cœrulea*, including many fine examples.

50 " *teres*, forming a bank of fine plants.

25 " *Hookeri*, a splendid lot of plants, mostly large pieces.

150 *Dendrobium Wardianum*, in various sizes.

125 " *Dearei*, a grand lot of plants.

50 " *nobile*.

50 " *fimbriatum* and *oculatum*.

75 " *thyrsiflorum*.

40 " *Brymerianum*.

30 " *heterocarpum*, also a good stock.

" *filiforme*, *Ainsworthi*, *splendidissimum*, *nobile nobilissimum*, *formosum*, *Cambridgianum*, *suavissimum*, *chrysotoxum*, and others.

150 *Coelogyne cristata*, varieties, a grand lot of plants for cutting.

" *Massangeana*.

" *pandurata*, three fine pieces.

Aërides expansum leonis, large specimens.

" *Lawrenceana*, a grand plant.

50 *Lycaste Skinneri*, including many large masses and fine varieties.

Sobralia macrantha, many large plants.

" *xantholeuca*, three grand pieces.

50 *Cymbidium eburneum*, including plants of enormous size, all in grand condition; also fine plants of *Parishi*, *Dayana*, *Mastersii*, *Lowi*, and *giganteum*.

30 *Angræcum leonis*, mostly large plants.

" *sesquipedale*, several fine pieces.

300 *Calanthe Veitchii*, *vestita*, *Regneri*, and others.

30 *Anguloa Clowesii*, *Ruckeri*, *sanguinea*, and *uniflora*.

60 *Epidendrum vitellinum majus*, a fine healthy lot of plants.

" *rhizophorum*, a group of fine plants.

" *prismatocarpum*, remarkably fine specimen and best variety.

250 *Disa grandiflora*, best variety; an exceptionally fine lot, including many large masses.

200 *Phalenopsis Schilleriana*, *Sanderiana*, *Dayana*, *grandiflora aurea*, and *amabilis*, a well conditioned lot of plants, many extra large.

200 *Masdevalleas*, of sorts.

Maxillaria grandiflora, specimen plants.

Dendrochilum glumaceum and *filiforme*.

100 *Sophronis grandiflora*, mostly in flower and beautifully grown.

30 *Ada aurantiaca*, including specimens of remarkable size and culture; and other Orchids too numerous to specify.

MAY BE VIEWED ANY DAY PRIOR TO THE SALE.

CATALOGUES may be had on the Premises, of the Head Gardener, Mr. T. WHILLANS; and of the Auctioneers, Estate Agents, and Valuers, Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

EUONYMUS, GOLDEN BUSHY.

1 year old, 12s. per 100.
2 years old, £1 per 100.
3 years old, £1 10s. per 100.

CYCLAMEN, in 48-pots, clean, and very strong, just opening flower, and full of buds. About 1000 plants to be disposed of; open to a Trade offer.

M. K., The Nursery, Roxley, Ewell, Epsom, Surrey.

ANTHONY WATERER

Invites an inspection from intending Planters to the following well-grown TREES, having stout, clean stems, with handsomely-furnished, well-balanced heads, and from frequently transplanting are splendidly rooted; the girth of the stem is taken at 4 feet from the ground:—

- ACER DASYCARPUM**, 14 to 20 feet, girth 4 to 8 inches.
WIERI LACINIATUM, 10 to 14 feet, girth 3 to 5 inches.
NEGUNDO VARIEGATUM, Standards, 8 to 10 feet.
REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.
SCHWEDLERI, 12 to 18 feet, girth 4 to 8 inches.
WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.
CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
 Double White, 14 to 16 feet, girth 6 to 8 inches.
 Scarlet, 12 to 18 feet, girth 4 to 10 inches.
 Spanish, 12 to 14 feet, girth 4 to 5 inches.
ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
 Guernsey, 16 to 18 feet, girth 7 to 9 inches.
LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
EUCHLORA or **DASYSTYLA**, 12 to 14 feet, girth 4 to 6 inches.
 Silver-leaved (*Tilia argentea*), 12 to 14 feet, girth 5 to 6 inches.
LIQUIDAMBAR, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 12 to 14 feet, girth 4 to 5 inches.
 Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
PLANES (English-grown), 12 to 16 feet, girth 4 to 6 inches.
POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
 Purple, 14 to 16 feet, girth 6 to 7 inches.
THORNS, Double Pink, 8 to 10 feet.
 Scarlet, 8 to 10 feet.
 White, 8 to 10 feet.
TULIP TREES, 8 to 10 feet.
WALNUT, Common, 10 to 12 feet.

WEeping TREES.

- BEECH**, Weeping, Pyramids, and Standards, 8 to 12 feet.
 Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
 Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 8 to 10 feet.
POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
KNAP HILL NURSERY, WOKING, SURREY.

The Subscribers of their stock (one of the most complete in Europe) of **Forest and Ornamental Trees, Shrubs, Plants** &c. grow at their extensive Nurseries, in a high and exposed situation near Canisale, admirably adapted for transplanting to any situation in the United Kingdom.

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Little & Ballantyne
Nurseries and Seedsmen, 7, The Queen and H.R.H. Prince of Wales.

By Royal Warrant to the Queen and H.R.H. Prince of Wales.

They will be pleased to send samples, make special quotations, and give any information or advice to intending planters.

Catalogue free on application.

NOW IS THE TIME TO PLANT

SEND FOR OUR
NEW DESCRIPTIVE

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PRICED CATALOGUE

Of Fruit Trees, Roses, Conifers, Shrubs, Forest Trees, Climbers, &c. An immense Stock grown.

LANDSCAPE GARDENING
A LEADING FEATURE.

GEO. JACKMAN & SON,
Woking Nursery, Woking, Surrey.

ESTABLISHED 1810.]

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to Grow Them, apply to **SANDER'S**, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

Austrian Fir—Scotch Fir.

CHARLES TURNER can offer the above.—
Extra transplanted, 4 to 6 feet.
The Royal Nurseries, Slough.

FOR SALE, Cheap, a young healthy Tree of

ALEXANDER PEACH, from Early-house, dwarf-trained, and well set with fruit-buds; size, 18 by 9 feet.—**H. SLARK**, Kingswood Grange Gardens, Hockley Heath, Birmingham.

OAK, English, splendid stuff, 6, 7, 8, 9, to 10 feet; **BEECH**, same sizes; **BOX**, Green, 1 to 3 ft.; **LAUREL**, rotundifolia, 2 to 3, 3 to 4, and 4 to 6 feet, bushy; **AUCUBA**, 1½ to 2, 2 to 3 feet, very bushy; both the latter are three times transplanted. **CHRISTMAS TREES** in various sizes. The whole must be cleared. Land sold for building. Special low prices on application.
B. R. DAVIS, Yeovil Nurseries, Yeovil, Somerset.

FERNs! FERNs!—Trade.—Greenhouse and

Stove, 25 saleable sorts, in 2½-in. pots, 12s. per 100; 10 best market sorts, in 48's, 6s. per doz.; good stores, 6s. per 100. Large *Adiantum cuneatum*, value in fronds, 6s. per dozen. *Cyperus*, *Aralias*, *Solanums* and *Primulas*, in 48's, good value, 6s. per doz. *Palms*, *Ficus*, *Erica* *hyemalis* and *Dracenas*, in 48's, 1s. each. Selected *P. tremula* and *A. cuneatum*, for making large plants quickly, 16s. and 20s. per 100, well packed, put on rail free for cash with order.—**J. SMITH**, London Fern Nurseries, Loughboro' Junction, London, S.W.

SEAKALE, BAGLEY'S INCOMPARABLE.

For forcing, this is really grand stuff. Sample only need be sent for to ensure order. Special quotations for large quantities. **STRAWBERRIES**, Sir Joseph Paxton, in 60 size pots, Laxton's Noble, strong runners. **CHRYSANTHEMUMS**, strong cuttings, Jardin des Plantes, Elaine, Source d'Or. Very large **RHUBARB CROWNS**, for forcing. Prices on application.
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The Best Present for a Gardener.**VINES and VINE CULTURE.**

The most complete and exhaustive Treatise on Grapes and their Culture ever published.

Third Edition, just out.

Price 5s., post-free, 6s. 6d.

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BOYCE'S CHRYSANTHEMUM GUIDE

contains complete directions upon Cultivation (including directions how to Grow from Seed); also a Descriptive List of over 1100 varieties. Price 4d. Many thousands of well-rooted Cuttings ready in February; strong Seedling Plants ready in March. Orders booked now.

W. E. BOYCE, F.N.C.S., Archway Road, Highgate, N.

NEW CHRYSANTHEMUMS.—Mrs. W. R.

Wells, pure white sport from Viviani Morel, plants in March, 5s. each. Frank Wells, incurved, rich amaranth, silver reverse, an immense high built flower, stiff broad petals, most perfect, very dwarf stiff habit, 5s. 6d. each. Col. W. B. Smith, G. W. Childs, Black Beauty, Lord Brook, Roslyn, Sparte, Tuxedo, Tuxedo, W. Falconer, &c. Catalogue free, from W. WELLS, F.R.H.S., Earlswood Nurseries, Limited, Redhill, Surrey.

10,000—Roses—10,000.

DWARF H.P.—Well-grown, and good

Varieties.

Purchaser's Selection, 35s. per 100; £15 10s. per 1000.

My Selection, 32s. per 100; £14 per 1000.

Cash with Order. Packing free.

F. DARRANT YOUNG, Roselands Nursery, Eastbourne.

ASPARAGUS, of fine quality—for Forcing,

5-yr. old, splendid roots, 12s. 6d. per 100, free on rail; 6-yr. old, extra fine, 15s. per 100. Cash with order. My Asparagus always makes top price at Covent Garden.

Read the following unsolicited testimonial:—"Please send me another 200 of 5-yr. old Asparagus Roots. I may say that the last 200 were the best lot of forcing roots I ever bought, and my employer says the quality is excellent."—C. H. PERKINS, The Gardens, Milton Abbey, Blandford."

J. J. CLARK, Market Gardener, Goldstone, Brighton.

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The following Catalogues free on application:—

Catalogue of beautiful flowering Bulbs for all seasons.
 Catalogue of all the best and most beautiful Daffodils (Narcissi).
 Catalogue of all the best and most beautiful Hardy Perennials.
 List of rare and beautiful Croci and Meadow Saffrons.
COLLECTIONS OF BULBS, 10s. 6d., 21s., 42s., 63s., & upwards.
COLLECTIONS OF DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s.
 Hyacinths, Tulips, Crocus, Daffodils, Iris, Peonies, Lilies, &c.
BARR & SON, 12, King Street, Covent Garden, London, W.C.

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ROBERT OWEN, F.N.C.S., Floral Nursery,

Maidenhead, Importer, Raiser, and Grower of

NEW and CHOICE CHRYSANTHEMUMS.

The Largest and Best Collection in Europe.

Awarded 150 First-class Certificates and Eight Medals.

Catalogue Free.

All Latest Novelties distributed in early Spring.

Lists ready early in January.

Many Acres of Lilies of the Valley!

T. JANNOCCH, Largest Grower of LILIES

OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year-old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

Gardeners' Orphan Fund.

THE FIFTH ELECTION of EIGHT CHILDREN to the benefit of this Fund, consisting of an allowance of 5s. per week (subject to the conditions stated in Rule XIII.) will take place on FRIDAY, February 3 next, at the Cannon Street Hotel, London, E.C. All applications must be made on a proper printed form, copies of which may be had gratis of the Hon. Secretary, or any of the Local Secretaries. Such form must be correctly filled up, duly signed, and returned to this office not later than WEDNESDAY, December 28.

A. F. BARRON, Hon. Sec.

Royal Horticultural Society's Gardens, Chiswick, S.W.

IF YOU WANT FRUIT TREES that will bear regularly, purchase Apples worked upon our Paradise Stock. We have 60,000 to select from, and shall be pleased to show them to visitors.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

Established 1782.

CHRYSANTHEMUMS.—Awarded 1st prize for 48th Incurved, N.C.S. Centenary Show, 1890. Our descriptive CATALOGUE of New Varieties for 1893, and all the best of the latest introductions (Incurved and Japanese), will be sent post-free. Prices very low. True to name. Satisfaction guaranteed, or cash returned.

RAY AND CO., Florists, Teynham, Kent.

GEORGE PIKE, 97, 98, and 99, Flower

Market, Covent Garden, W.C., is open to receive CHOICE CUT FLOWERS for SALE on COMMISSION.

Boxes and Labels supplied on application.

G. A. WILLIAMSON, NURSERYMAN and **G. FLORIST**, Smithfield Market, Manchester, is open to RECEIVE CONSIGNMENTS of CUT FLOWERS and MAIDENHAIR FERN on COMMISSION. Cheques as desired.

MESSRS. SQUELCH AND WOOD, FRUIT SALESMEN, North Row, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of GRAPES, TOMATOES, CUCUMBERS, and all kinds of HOT-HOUSE PRODUCE.

Our business connections being amongst the best houses in London, we are in a position to secure the highest prices for all choice goods. Account Sales forwarded daily, and cheques weekly, or daily if required. Empties and labels supplied. Reference, London and County Bank, Covent Garden Branch.

THREE STERLING ARTICLES

for SEED LISTS, 1893.

To the Trade.—Price per dozen and 100 packets, on application.

Hartland's Snowdrift Double-white fimbriated Poppy.

Hartland's April Queen Late Broccoli.

Cosmos bipinnatus, The Pearl.—This latter, for winter

blooms and white flowers. Grown in pots and placed out

of doors with Chrysanthemums, and then removed to a

temperature of 55° or 60°, when a most continuous display

of lovely white Queen Dahlia-like flowers can be cut until

Christmas.—**WM. BAYLOR HARTLAND, F.R.H.S.**,

Seedsman, 24, Patrick Street, Cork.

SPECIAL TRADE OFFER,

at reduced prices, as follows, all fine healthy trees:—

500,000 RHODODENDRONS, from 2 to 6 feet.

ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet,

9 to 10 feet.

Mountain, 3 to 4 feet, 6 to 7 feet, 9 to 10 feet, 10 to 12 ft.

BEECH, Common, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 10 to 12 ft.

BIRCH, 9 to 10 feet, and 10 to 12 feet, fine.

CHESTNUTS, Horse, 3 to 4 feet, 5 to 6 ft., 8 to 9 ft., 9 to 10 ft.

ELM, 3 to 4 feet, 6 to 8 feet, 9 to 10 feet, stout.

LIMES, red twigged, 6 to 7 feet, 8 to 9 feet, 9 to 10 feet.

PINES, Weymouth, from 2 to 6 feet, various sizes.

POPLARS, 3 to 4 feet, intermediate sizes up to 10 feet.

PRIVET, oval-leaf, 2 and 3 feet; evergreen, 3 to 4 feet.

THORN QUICK, many hundred thousand, from 4 to 6 years

old, very strong; SYCAMORE, 6 to 10 feet; LILACS,

PINES, Austrian, from 3 to 6 feet, fine trees; AUCUBAS,

LAURELS; HOLLIES, various; BERBERIS AQUI-

FOLIA, 1½ to 2½ feet; BOX, YEWs; ELDER, golden;

IVIES, and General NURSERY STOCK.

For prices, &c., apply to ISAAC MATTHEWS and SON,

The Nurseries, Milton, Stoke-on-Trent.

N.B.—Rhododendrons, early-flowering varieties, from 15 in.

to 2½ feet, full of buds, at special low prices, for forcing. Over

500,000 to select from. Inspection invited.

EVERGREENS for IMMEDIATE EFFECT.

AUCUBA JAPONICA, 3 to 4 feet ... per dozen 42s.

CUPRESSUS LAWSONIANA, 6 to 8 feet ... 30s.

8 to 10 feet ... 6s.

HOLLIES, Green, 5 to 6 feet ... 42s.

LAURELS, Caucasian, 4 to 5 feet ... 18s.

5 to 6 feet ... 24s.

Colchic, 4 to 5 feet ... 12s.

latifolia, 5 to 6 feet ... 24s.

Round-leaf, 4 to 5 feet ... 15s.

PICEA LASIOCARPA, 7 to 8 feet ... each 21s.

5 to 6 feet ... per dozen 60s.

NORDMANNIANA, 4 to 5 feet ... each 15s.

5 to 6 feet ... per dozen 21s.

PINUS AUSTRIACA, 4 to 5 feet ... 36s.

5 to 6 feet ... 60s.

YEWs, English, 5 to 6 feet ... 84s.

6 to 8 feet ... 42s.

THUJA ERICOIDES, 6 to 8 feet ... 4s.

LOBBII, 6 to 8 feet ... 60s.

8 to 10 feet ... 30s.

OCCIDENTALIS, 8 to 10 feet ... 4s.

THUJOPSIS BOREALIS, 5 to 6 feet ... 84s.

6 to 8 feet ... 1s.

8 to 10 feet ... 5s.

WELLINGTONIA GIGANTEA, 4 to 5 feet ... 6s.

5 to 6 feet ... 6s.

All perfect specimens, bushy, well-rooted, and fine colour.

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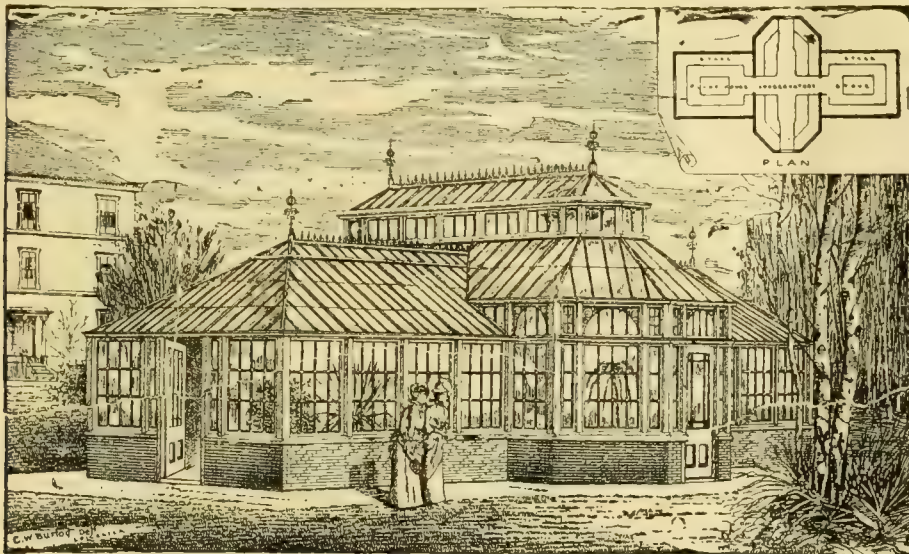
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 10, 1892.

PENRHYN CASTLE, N. WALES.

THE position of the castellated mansion in this, the finest place I have visited in Wales, is grand; the grounds are undulating, losing their boundaries in their extensiveness, whilst the scenery of mountain, woodland, and sea, is extremely lovely and picturesque. Excellent effect has been added from time to time by the judicious massing of hardy flowering shrubs, whilst those of an ornamental foliage character are harmoniously grouped in juxtaposition. Large breadths of choice hardy flowering bulbs, woodland flowers, and Ferns have been planted. Coniferous trees are evidently at home, where sheltered from the terrific gales which sweep in from the sea, as the choice specimens to be seen fully testify. It has been necessary, however, to plant large plantations of forest trees for shelter. In sheltered nooks around the castle were planted many of our greenhouse plants, such as *Lapageria rosea*, *Arundinaria falcata* (a huge plant), *Agapanthus umbellatus*, *Hydrangeas* of sorts, flourishing, but requiring the help of a little winter protection. A fine pair of *Chamaerops Fortunei* have been out many years. No gaudy flower garden disturbs the repose of the green sward under the windows; but one is provided at a short distance away, where *Begonias* and other summer occupants were very gay during the season.

A portion has been recently added, and this is reached by a charming avenue, bowered with *Fuchsia Riccartonii*—truly a novel and grand approach. This portion has been planted with a choice collection of the newer kinds of Japan and other hardy shrubs. A range of houses near contained a healthy collection of stove and greenhouse plants, Palms, &c. A number of long borders of hardy herbaceous flowers, used principally for cutting purposes, were in the kitchen garden, alongside the huge breadths of well-cultivated vegetables and rows of Chrysanthemums.

The Grapes alone were worth a long journey to see. Such immense bunches of Muscats, perfectly finished both in berry and colour. Foster's Seedling, grown in this Muscat-house, were an unusual size, and of exceptionally deep amber colour; so much so, that its identity was a matter of considerable difficulty. The Muscat Vines were inarched on Lady Downes' fifteen years ago—evidently not a bad stock. Black Hamburgs were also magnificent in bunch, colour, and in size of berry. These had also been worked on Lady Downes' twenty-six years ago, the Vines of Lady Downes' having been

planted in 1844 in a mixture of heavy loam and horseflesh. This, however, had to be removed and replaced by a more congenial compost. The Vines have been forced so as to produce ripe Grapes in May over twenty years, and, judging from the stout leaves and footstalks, the sound well-ripened wood, and the clean healthy Vines, good results may be expected for many years to come. Here is a tough nut to crack for some of those sticklers for young Vines for early forcing, who believe that the early exhaustion of Vines, if regularly forced, must inevitably follow. A house containing Madresfield Court, Alicante, and some others, showed similar features of good culture. The system of pruning is a combination of the extension system and the spurring method. Young wood is laid in every year, and old canes occasionally cut out; the wood is kept thin, and the aim is to secure plump ripened buds. The rods are tied to the wires in bundles, and Mr. Speed jocularly tells a story how a recent foreman once asked him "when he should untie those faggot bundles?"

Peaches, too, were excellent: a house of Princess of Wales and Gladstone I have never seen surpassed. Surface-roots are considered a desideratum, and Mr. Speed says half the gardeners are afraid to take the necessary liberties with Peach roots. Here it appears Mr. Speed hesitates not to move trees, even at the commencement of forcing, if it is at all urgent; anyhow, the roots are lifted nearer the surface frequently, and the practice commends itself. The Fig-house is the very best I have seen, and the crops which are annually taken from the trees fully justify the adjective. Thus indoor fruit is thoroughly well done, but not more so than plants, notably Crotons, Calanthes, and decorative kinds generally. Pines, too, were strong and healthy, Queen's, Smooth Cayenne, and C. Rothschild especially so.

Outdoor fruits were less satisfactory, but I noticed many promising cordons on dwarf stocks, and these furnished with plenty of surface roots, may succeed better in this rather humid and less genial climate. A gooseberry-house claims one's attention as interesting; it is simply a huge wire-cage, as a protection from birds.

Jupiter Pluvius was rather spiteful the day I called, for it rained heavily (a frequent occurrence here), otherwise the visit would have been more agreeable. More ample notes might have been made, but the above are a few of the indelible impressions left upon my mind touching the doings of Mr. Walter Speed, one of the most unpretentious of men, but one who so skilfully cultivates the horticultural subjects at this noble domain. *W. Crump, Madresfield Court.*

NEW OR NOTEWORTHY PLANTS.

COSTUS UNIFOLIUS, *N. E. Br. (n. sp.)*.

THIS is one of the most remarkable species of *Costus* (a genus of Scitamineæ) at present known, and is readily recognised by the short branches of the rhizome bearing but one leaf, the base of which partly encloses the small few-flowered flower-spike. It was introduced from the Gold Coast by F. Sander & Co., who sent a plant of it to Kew, which flowered in the September of this year. The following is a description of the plant:—

Rhizomes extensively creeping, $\frac{1}{4}$ to $\frac{1}{2}$ inch thick, branched, the branches or stems 1 to 3 inches long, clothed with closely convolute, reddish-brown, or pale brown membranous sheaths; the apex rising a little above the soil, and bearing only one leaf at the

extremity. The leaf is from 3 to 5 inches long, and 2 to $3\frac{1}{2}$ inches broad, elliptic in outline, very obtuse, with a short apiculus, thick and leathery in texture, usually spreading horizontally at about $\frac{1}{2}$ to 1 inch above the surface of the earth, dark green above, whitish-green beneath. Flower-spike small, sessile at the apex of the stem, and partly enfolded by the base of the leaf, two-flowered, or perhaps, occasionally three-flowered, and exclusive of the flower $\frac{3}{4}$ inch long. Bracts $\frac{3}{8}$ to $\frac{1}{2}$ inch long, the outer ones oblong lanceolate acute, the inner shorter oblong obtuse, membranous, brown. Calyx $\frac{1}{2}$ to $\frac{5}{8}$ inch long, tubular, unequally three-lobed, the lobes lanceolate acute, membranous, brown. Petals $1\frac{1}{2}$ to $1\frac{3}{4}$ inch long, $3\frac{1}{2}$ to 4 lines broad, spatulate oblong, or oblanceolate oblong, obtuse or sub-acute, apiculate, membranous, pale green. Labellum $1\frac{1}{2}$ to 2 inches long, $\frac{3}{4}$ inch in diameter, the margin crisped and lobulate, white, with the disk and tube deep yellow. Stamen oblong, white, terminated by an ovate acute yellow crest above the short parallel anther-cells. A native of the Gold Coast. *N. E. Brown, Kew.*

CALANTHES AT BICTON.

THE glories of Bicton have so often been told, its fine Conifers described, and the many beauties and attractions of the place become such household words amongst all who take a delight in horticulture, that it is not necessary again to mention them, or attempt to describe them at this time. The Camellias in the large house are just coming into flower, vineries, Peach-houses in various conditions of preparation for the forthcoming season; a greenhouse was full of bright flowering plants, as also are some other structures. Pine-apples are well done. My present purpose is to make a note of the beautiful and effective display Mr. Mayne has in the stove. This house is about 50 feet long by some 20 feet wide, having narrow side-shelves, the centre bed being the chief portion. The house was perhaps erected as a Pine stove, and is, if my memory serves me correctly, a hip-roofed span. The end of the bed facing the entrance is filled with fine pots of *Calanthes*, *C. Veitchii* being the most prominent of these, though *C. vestita rosea* and *C. lutea* are well represented. The *C. Veitchii* are simply superb; good stout spikes, flowers set very closely together, colour unusually vivid, being much darker than is met with in many places. The spikes averaged 4 feet in length, not but what many will have spikes rather longer than this, but there was no drawing or lengthening observed, for the flowers were so close together that the character of the spikes seemed to assume a different form that one usually associates with this charming winter Orchid. Some spikes were carrying twenty-five perfect flowers, fresh and firm, and almost as many yet to open. A large plant of *Adiantum Farleyense* was suspended just over the batch of *Calanthes* at the entrance. Some of the spikes reached up to its dark green fronds, making a rich and pleasing picture. Along the whole of the bed were other *Calanthes* equally good, and intermixed many Crotons of rich colour, the narrow pendulous-leaved kinds being specially bright and vivid. Many nice *Dracenas*, splendidly coloured, were mixed in with them, and beside these foliage plants were finely-bracted Poinsettias. Arching sprays of Euphorbias, and many spreading panicles of the bright rosy form of *Begonia semperflorens*; a large plant of *Anthurium Scherzerianum* was full of its scarlet spathes, which, standing up well above its foliage, as is usual with this form, permitted every flower to be seen at its full value. Knowing how *Calanthes* suffer when grown in the deleterious atmosphere of some parts of Lancashire, and also how the London fog will in one night ruin a house full of flowers even in some parts of Kent and Surrey, the gay and attractive sight at Bicton was a great pleasure, and I congratulate Mr. Mayne on his success in cultivating these plants, and skill in arranging them. *W. Swan, Bystock, Exmouth.*

RHODODENDRONS.*

(Continued from p. 668.)

THE EUROPEAN SPECIES.

R. ferrugineum and *R. hirsutum* are the only two species of the genus that are wild in Europe. They occur in abundance on the Swiss Alps at high elevations, generally where scarcely anything else grows. They form compact little bushes, varying from 6 inches to 3 feet in height, and when covered with their rosy-red flowers they are particularly effective. In the garden they are perfectly happy, and I know no hardy dwarf evergreen shrub more worthy of a place in a border. At Kew there are several large beds of them, which are presentable at all times of the year. *R. intermedium* is said to be a natural hybrid between these two. In Switzerland they are known as the Rose of the Alps. The flowers, which develop in June, are nearly an inch long, in compact terminal clusters. The principal difference between the two species is in the leaves, *R. hirsutum* having ciliated leaves with glands on both sides. Other wild forms or hybrids of these two species are *R. myrtifolium*, *R. hallense*, and *R. hirsutiforme*.

R. ponticum.—The genus was founded upon this plant by Tournefort, who named it *Chamaerhododendron pontica*. Originally a native of the region of the Black or Pontic Sea and Portugal, it is now naturalised in many parts of Europe. In English woods it sows itself, and comes up freely; it appears to have been introduced into England from Ghent, where it was in cultivation in 1763. A useful plant in itself, it is of special interest as being one of the parents of many beautiful hybrids and crosses. It is commonly used as a stock for the more delicate kinds of *Rhododendron* in this country and in the United States, where, according to Mr. Parsons, it is valuable not only as a stock for the catawbiense seedlings, but also for the Ghent Azaleas in places where they will not thrive on their own roots. There are old woods in England in which this fine useful evergreen is represented by huge bushes—almost trees. In the Queen's Cottage grounds at Kew there are some grand masses of it, which in May or June are a waving sea of purple flowers.

"*Azalea pontica*."—There is another Pontic *Rhododendron* known in gardens as *Azalea pontica*, but to botanists as *Rhododendron flavum*. It is the deciduous twiggly hairy-leaved yellow or orange-flowered shrub which grows a yard or so high, is as hardy as Box, and flowers profusely in spring. Seeds of it were first sent to England by Dr. P. Pallas, who collected them in the Crimea, and gave them to Messrs. Lee & Kennedy of Hammersmith. This is the plant whose flowers are said to poison the honey obtained from them. Mr. H. J. Ross, writing in the *Gardeners' Chronicle* some years ago, said that the poisonous principle is got rid of by heating the honey. I have never heard that honey is affected in this country by this *Azalea*, and I know the flowers are a favourite with bees.

R. dahuricus (Fig. 108, p. 701), was introduced into England from Russia by a Mr. Bush about one hundred years ago, and was distributed by Messrs. Lee & Kennedy. It forms a rather scraggy sparsely-leaved shrub, and is remarkable as an early-flowering species. It was in full bloom out-of-doors this year at Kew on February 28.

R. chrysanthum I have never seen in flower. According to Koch it is not easily kept alive in the garden. It is a dwarf plant with the habit of *R. caucasicum*, and beautiful golden-yellow flowers an inch in diameter. It was figured in Salisbury's *Paradisus*, t. 80 (1805), under the name of *R. officinale*. This plant is worth looking after by hybridists. It is a native of Siberia. Seedlings of it are in cultivation at Kew.

R. kamschatcicum, *R. lapponicum*, and several other species from very high elevations are too difficult to keep alive to be worth more than passing mention.

* A paper read before the Kew Gardeners' Society, by W. Watson, Assistant-Curator.



FIG. 106.—RHODODENDRON GRUEFFELIANUM, SYN. R. AUCKLANDI: FLOWERS WHITE, FILLED WITH ROSE. (SEE P. 698.)

THE SIKKIM HIMALAYA SPECIES.

The Rhododendrons of the Sikkim Himalaya are the most beautiful plants in the order to which they belong. For the discovery, introduction, and history of most of them, we are indebted to Sir Joseph Hooker, who visited the Himalayas forty years ago. The glorious characters of these plants are set forth in the illustrations and descriptions published in the *Botanical Magazine*, Hooker's *Rhododendrons of the Sikkim Himalaya*, and in various other works [and may be judged of by the illustrations in the present number]. There is a most interesting paper on these Rhododendrons in vol. vii. of the *Journal of the Royal Horticultural Society* (1852) by Sir Joseph Hooker. This paper, which extends over 62 pages, should be read by everyone interested in Rhododendrons. Their distribution, effect in the landscape, habits, the soil they grow in, the nature of the climate and surroundings, these and many other interesting points are there exhaustively dealt with. I will quote only the following passage:—

"It is especially between 10,000 and 14,000 feet that the genus prevails, several species comprising three-quarters of the bulk of the vegetation above the forest region (12,000 feet). There Rhododendron wood supplies the native with fuel and various utensils; the bark and leaves are also brought into service. They are the traveller's constant companion throughout every day's march; on the right hand and on the left of the devious paths the old trees and bushes are seen breast high or branching overhead, whilst the seedlings cover every mossy bank. At 13,000 feet the flanks of the snowy mountains glow with the blood-red blossoms of *R. fulgens*, whilst the beauty of *R. campanulatum*, and the great elegance and delicacy of the yellow bells of *R. campylocarpum* [fig. 107] excite the more admiration from their being found in such regions of fog and rain. Yet with all these advantages of position, and that of an intimate knowledge of the species, I was constantly at a loss to distinguish to which species the seedling plants belonged, especially when they grew intermixed, or to recognise others when they distant from their parents."

Darjeeling, which may be considered the headquarters of the Sikkim Rhododendrons, is situated in latitude 27° North, and in the same longitude as Calcutta, from which it is 380 miles distant. Its elevation is 7200 feet, and its mean temperature is 55°. It is never so hot in summer, nor so cold in winter, as it becomes in London. Under cultivation Sikkim Rhododendrons are happiest in those parts of England which are warm, and in close proximity to the sea. The best out-door collection of these plants known to me is at Penllergare, near Swansea in South Wales. Here Sir John Llewelyn cultivates in the open, without any protection, other than that afforded by trees, no fewer than nineteen of the Himalayan species. I am indebted to Mr. Warmingington, the gardener at Penllergare, for the following list of them:—

<i>R. argenteum</i>	<i>R. Fortunei</i> (China)
<i>R. arboreum</i> , vars.	<i>R. Falconeri</i>
<i>R. Aucklandii</i> [fig. 106]	<i>R. glaucum</i>
<i>R. barbatum</i>	<i>R. Hodgsoni</i>
<i>R. ciliatum</i>	<i>R. lanatum</i>
<i>R. campanulatum</i>	<i>R. niveum</i>
<i>R. cinnabarinum</i>	<i>R. Roylei</i> [fig. 110, p. 709]
<i>R. Campbellii</i>	<i>R. Thomsonii</i>
<i>R. campylocarpum</i> [fig. 107]	<i>R. Wallichii</i>
<i>R. eximium</i>	

The largest specimens I have seen are in the gardens of Sir Hussey Vivian, Bart., at Singleton, in Swansea. A description of these magnificent trees was contributed to the *Gardeners' Chronicle* in 1882 by Sir John Llewelyn.

The Kew collection of Himalayan Rhododendrons is, of course, rich in number of species. They are grown partly in the open air, others are protected by canvas in winter, but the bulk of the species are in the large winter garden. They are grand plants for large conservatories, and especially for unheated houses, for these Rhododendrons abhor fire heat. Then there are not a few which may be grown in the outside border, or as lawn specimens

in most parts of England, such being *R. campanulatum*, *R. Thomsonii*, *R. cinnabarinum*, and *R. glaucum*. Although Hooker introduced a considerable number of these Sikkim species, there were a few of them in English gardens long anterior to his visit to Sikkim. *R. arboreum* was introduced to the Liverpool Botanic Gardens by Dr. Wallich in 1818, who also sent home about the same time good seeds of *R. formosum*, *R. barbatum*, and *R. campanulatum*. Sir Joseph Hooker recently drew attention to the "singular fact that no additions have been made to Sikkim Rhododendrons since 1849." The following species of this section have yellow flowers:—

<i>R. Boothii</i>	<i>R. lepidotum</i>
<i>R. campylocarpum</i>	<i>R. triflorum</i>
<i>R. citrinum</i>	<i>R. Wightii</i>
<i>R. lanatum</i>	<i>R. cinnabarinum</i> (orange)

THE MALAYAN AND NEW GUINEA SPECIES.

I have already stated that twenty-seven species have been described from these regions, and that only seven of them have, as yet, been introduced into gardens. From these seven, however, a race of garden Rhododendrons, of the highest possible value in horticulture, has been obtained, chiefly by Messrs. James Veitch & Sons. The parents of this race are *R. Teymannii*, *R. jasminiflorum*, *R. javanicum*, *R. Brookeanum*, *R. multicolor*, and *R. malayanum*. There is a very interesting paper, by Professor Henslow, on the hybrids raised from these in the *Journal of the Royal Horticultural Society*, published two years ago. Some very distinct and handsome-flowered species have been found wild on the mountains of Borneo. Amongst them are *R. Lowii*, 12 to 20 feet high, with clusters of large tubular yellow flowers; *R. ericoides*, 2 to 8 feet high, and Heath-like; *R. verticillatum*, a big crimson-flowered shrub; and *R. buxifolium*, as large as the last, but with Box-like leaves. *W. W.*

(To be continued.)

OAKMERE HALL.

The residence of John Higson, Esq., called Oakmere Hall, is situated in the heart of Delamere Forest. It takes its name from the neighbouring lake called Oakmere. The whole district was at one time a large forest, considerable portions of which are still thickly covered with Scotch Firs and Oaks. It was planted with the latter by the Crown in order to furnish timber for the navy, but from the poverty and light character of the soil the experiment was not successful, the growth of the Oaks being very poor; however, the demand for this wood for naval architecture has ceased. As the growth of trees afford a good criterion as to the natural fertility of soils, it will be seen that we have here to do with a soil of low fertility. With liberal treatment, however, heavy crops of the very best Potatoes are produced on the farms in the district for Manchester and Liverpool markets.

Oakmere Hall gardens appear like an oasis in a wilderness. This is to a large extent due to the high feeding which the light soil requires. Asparagus does remarkably well. Pears and Plums, both on walls and as pyramids, are good; of the former Marie Louise and Williams' Bon Chrétien give large crops on pyramid trees, which are top-dressed with farmyard manure. Apples are, however, this year almost a total failure here. Herbaceous plants are cultivated on a large scale, chiefly for cutting for house decoration; these are supplemented by good annuals. Oriental, Iceland, and Shirley Poppies furnish a succession of brilliant flowers in the order given. Dwarf Scabious and early-flowering Chrysanthemum *Précocité* also give a beautiful contrast of deep purple and golden-yellow, looking well in vases.

The Hall is a curious building, half ecclesiastical, half castellated structure, surrounded by a beautiful lawn, which slopes down to the lake. The lake is partly planted with aquatic plants, and is screened from the road by Rhododendrons, which grow well by the water-side. *F. V. D.*

FORESTRY.

SEASONABLE WORK.

The Walnut (*Juglans regia*, L.) ripens its seed in autumn, when they fall to the ground of their own accord; and as they vegetate the following season, they may be sown at once, or any time during dry favourable weather in winter or early spring. The nuts, which contain the seed, may be sown in drills in a similar way as that given before for the Chestnut, and covered with about 2 inches of fine sandy soil. The drills should be formed on sharp sandy or gravelly soil, as plants raised on soft soil rich in organic matter never mature their wood properly in autumn to stand the winter's frosts.

The Alder (*Alnus glutinosa*), Gaertner.—The seeds of this tree are contained in small cones, and are now ripe and ready for collecting; choose fine dry weather for this purpose, and place the cones in a dry airy loft some 6 or 8 inches deep, and turn them occasionally during winter; when the scales begin to open they should be trodden with the feet to break up the cones and extract the seed. The seed should be sown broadcast on well-worked soil, formed into seed-beds during dry weather in spring. One pound of seed should be allowed for 10 or 12 lineal yards of a 4-foot bed. As the seeds are small and light, they should be sown in an even and uniform manner, and mixed with the surface soil with a light rake, which is all the covering they require. In very dry weather it is an advantage to moisten the seed the day before sowing, and in cases where the soil is of a dry light texture the surface of the bed had better be pressed down with a light roller.

Gather Laburnum pods, which contain the seeds as they become ripe, and stow them away in a dry place till wanted in spring. These should be sown on light sandy soil, either in drills or on beds about 3 inches apart, and covered to the depth of about $\frac{3}{4}$ inch with fine soil.

Trench and prepare a piece of sandy ground on a northern exposure, to be planted with cuttings of Elder, Willows, and the kinds of Poplar and other trees increased by that method; these may be inserted during winter or early spring. *J. B. Webster.*

FOREIGN CORRESPONDENCE.

CHRYSANTHEMUM EXHIBITION AT NEW YORK.

UNDER the auspices of the New York Florists' Club, there was held, at the Madison Square Garden, New York, on November 1 to 6, the annual Chrysanthemum show, which also included exhibits of Orchids, Palms and foliage plants, &c. The amount of cash prizes amounted to 6500 dol., besides numerous Cups for new seedlings, &c. The "Garden" is an ideal place for a flower show, being an immense amphitheatre, with 85,000 square feet of floor space, without a pillar to obstruct, well lighted from above, and surrounded by tiers of seats and boxes, from which the public might take in a bird's-eye view of the whole exhibition at a glance. It was elaborately decorated and festooned with Chinese lanterns, which gave the whole an appropriate and oriental appearance. At the north end an immense arch had been erected, profusely decorated with flowers of Chrysanthemums, *Asparagus plumosus*, *Smilax*, &c. From a horticultural standpoint, the show, in comparison with other years, was a decided improvement, although large Palms and foliage plants, which always give an air of lightness, and soften the great amount of colour so prevalent in exhibitions, were lacking.

The leading class for Chrysanthemums, ten specimen plants, was secured by Ernest Amus, West Hoboken, N.Y., with perfect plants in every respect, and including Ivory, Domination, W. H. Lincoln, Mrs. J. N. Girard, Minnie Wannamaker, Gloriosum, Ada Spaulding, Rohallion, Ed. Molyneux, Mermaid. He also obtained 1st for six and three specimens.

J. Roehrs, Carlton Hill, N.J., was successful in obtaining 1st for ten standards, also for five and for one; and for the group of 300 square feet. Thos. H. Spaulding, Orange, N.J., was 1st for one hundred plants in twenty varieties, single stem. Pitcher & Manda, Short Hills, N.J., were 1st with a grand

but not finish," which does not count very much over here; size is what the average American admires. The prizes in these classes were divided between Messrs. Pitcher & Manda, Ernest Asmus, Daillidouze Bros., Julius Roehrs, F. T. Underhill, J. N. May, Peter Henderson & Co., J. H. Taylor, &c.

bowls, the more artistic appearing the better, and with a hundred or two of these in line, the sight must be seen to be realised. The most prominent varieties in these classes were Minnie Wannamaker, Mrs. E. D. Adams, Ivory, Mrs. Robert Craig (white), W. H. Lincoln, Harry E. Widener, Kioto (yellow),



FIG. 107.—RHODODENDRON CAMPYLOCARPUM. (SEE P. 698.)

lot of plants, consisting of twenty-five novelties introduced in 1892, grown on the single-stem method; W. S. Kimball, Annie Manda, Harry May, Black Beauty, Hicks Arnold, were especially good varieties.

Cut Chrysanthemums were of the highest standard, but, as an English visitor remarked, "they had size

The exhibition-board is being almost entirely dispensed with over here, and the blooms are shown with long stems (not less than 12 inches), with foliage; hence only those varieties with stiff erect stems are cultivated; another very prominent class is that which calls for twelve, twenty-five, or even fifty blooms of one variety, and exhibited in large

Mermaid, Ada Spaulding, Vivian Morel (pink), O. P. Basset, A. G. Ramsay, G. W. Childs (crimson), Hicks Arnold, Harry May, and H. F. Spaulding (bronze).

For new seedlings were, best yellow, Mrs. F. L. Ames, shown by Pitcher & Manda; best white, The Queen, shown by W. S. Waby; best bronze, Robert

McInnes, shown by E. G. Hill & Co.; and also for the best of any colour in Mrs. J. W. Crouch, a beautiful crimson incurved; and for the best pink, Mr. John Kease, was 1st, with Pride of Englewood.

Emily Ladenburgh, shown by F. T. Underhill, a fine incurved brownish-crimson, received a 1st prize as being the best variety exhibited previous to 1892 and not yet in commerce.

The Roses were well to the fore, the principal exhibitors in these classes being F. R. Pierson & Co., J. N. May, J. H. Taylor, Ernest Asmus, C. & J. Slaughter, John Reid, and other well-known growers for the New York market.

Ernest Asmus won the Pierson Cup for the most promising Rose, of late introduction, with Kaiserin Augusta Victoria; also the Lanier Cup for best Seedling of European origin, with those of Caroline Testout.

The Taylor Cup for the best new pink Rose was awarded to John Burton for his American Belle, a sport from American Beauty.

For the best Seedling Rose of American origin, J. N. Hay was awarded the Whitney Cup for Mrs. W. C. Whitney, a hybrid, Souvenir d'Ami \times American Beauty.

At either end of the garden was a grand group of Palms and foliage plants, arranged in pyramidal shape. They were in competition for the 250 square feet. Siebrecht & Wadley obtained 1st with a clean lot of plants, prominent among which were *Licuala grandis*, *L. peltata*, *Cycas Rumphii*, *Kentia canterburyana*, *Aracaria excelsa glauca*, *Dracæna Lindenii*, &c.; Geo. M. Stumpp, with almost an equally fine lot, 2nd. Siebrecht & Wadley also showed and received a 1st for 200 square feet ornamental and flowering plants.

Pitcher & Manda were in their element when they competed for the collection of *Cypripediums*, and showed some 120 species; they also obtained 1st for new and rare plants, with *Adiantum cuneatum variegatum* (very pretty), *Maranta Lageriana* (new species from South America), *Anthurium Brownii* \times , *Aglaonema picta*, *Dracæna Desmetiana*, and *Tillandsia argentea*.

G. B. Winslade was 1st with six of the best coloured *Crotons* I ever saw.

Among the miscellaneous exhibits, F. R. Pierson showed some new Cannas (these plants now taking quite a lead in American summer gardening), Paul Marquart, Alphonse Beuvier, Capitaine P. de Sazzoni, noticeable; and J. W. Elliott, some grand blooms of tuberous *Begonias*, rich and varied in colour and immense size.

Apologies must be made if all the exhibits have not been mentioned, but a full description would take more space than I feel entitled to; enough to say that the exhibition was undoubtedly the finest the country ever saw, and superior to anything seen in Europe. I was pleased to meet during the exhibition Messrs. J. H. Laing, A. Ingram, and A. Dimmock, from England. *New York Correspondent*.

BERLIN LETTER.

Seldom has a plant made itself at home in so short a time as has the *Chrysanthemum* in Berlin. Up to within a few years only a few varieties with white blossoms, 2 to 3 inches in diameter, were known, and these were chiefly used by the poorer folk for funeral wreaths, but now one finds the *Chrysanthemum* in every flower-shop, and on the baskets of the flower-girls in enormous quantities. The colours consist chiefly of pale violet, copper-red, and white, and the flowers loose in form, and from 3 to 4 inches in diameter, and by no means beautiful, but rather the reverse, and the odour evil! But they are the fashion, and that more than balances all their faults and shortcomings. The noble-looking, large-flowered varieties, are only to be found in a few good gardening establishments frequented by the upper ten thousand, as those of Borsig, Spindler and Veit.

What is bizarre is always likely to have success. No wonder, then, that Cacti are being brought again to the front; a monthly journal for Cactus cultivators, under the editorship of Professor Schumann,

is prospering; moreover, steps have been taken for the formation of a society of succulent cultivators. The above-mentioned journal, under the editorship of the author of the *Monograph of Brazilian Cacti*, is in good hands; and he began his editorial activity with the description and illustration of the new *Cereus Hildmannianus*.

Amongst flowers observed in the flower-shops at the present time are many of *Brugmannsia*. What a pity that the dealers do not make use of the flower in its naturally pendent fashion, but employ it bound with wire, with blooms of *Lilium auratum* and *L. longiflorum* in an erect position in bouquets!

The season was till lately exceptionally mild, although a few weeks ago we had frost of 4° Réaumur, 41° F. Since then the temperature ranged with moist and foggy weather, between 5° and 10° Réaumur, and without any rain or snow. The consequence is, that the trees and shrubs are slow in parting with their foliage, and very many of them, which in other years lose their foliage whilst it is still almost green, in this season are wonderfully beautiful. Particularly is this the case with Beech, Hornbeam, and Birch, also North American species of Oak, which have beautiful tints in the autumn.

It is singular in this jubilee-celebrating time that the centenary of the *Camellia* has been passed over in silence. It would have been a good opportunity for a *Camellia* exhibition. In the year 1792 the *Camellia*, which was introduced in 1739, flowered for the first time in Europe. It would be a grateful and interesting task to determine how long the various single-flowered varieties had been in cultivation when the first double-flowers were produced. In view of the great gain these double-flowers were to horticulture, these facts will in every case be readily determinable. That the intervals of time which elapsed between the appearance of the varieties were very various is certain, whilst the double-flowered tuberous *Begonias*, appear, as it were, to rise under our very eyes.

How short is the space of time since *Begonia boliviensis* and allied species were introduced, and how quickly double forms of flowers were obtained! On the other hand, how long it is since *Cyclamen persicum* was first cultivated, and how rarely we see or hear of *C. p. flore-pleno*! *Dr. U. Dammer*.

NURSERY NOTES.

CHRYSANTHEMUMS AT THE FLORAL NURSERY, MAIDENHEAD.

At Castle Hill the *Chrysanthemum* has found a congenial home, and under the supervision of Mr. Owen an immense collection is grown. Besides keeping a large number of named varieties, both new and old, Mr. Owen gives especial attention to the raising of new ones from home-saved seeds, and at the present time his nursery is well worth a visit by those interested in the Autumn Queen. Here have been raised a very great number of English seedlings, and the many certificates they have obtained testify to their first-class quality both for exhibition and decorative purposes. Some two thousand seedlings of this and last year are now on trial, many of which at the time of my visit were not yet in bloom, while others in their half-expanded state give promise of sterling beauty. Besides seedlings of his own raising, Mr. Owen imports from America, France, and other places, giving all a fair trial. During a visit some short time since, I noted the following:—A variety named Yellow Avalanche, a seedling from Avalanche, is a nice pale yellow, perhaps scarcely large enough for exhibition, but a very useful dwarf grower for decorative purposes. G. C. Schwabe, bright carmine-rose, gold centre, long, broad, and recurving florets. Excelsior, a variety that has done well this year, and proves to be a grand exhibition flower; colour, bright rose-cerise. Thomas Hewitt, rose-lilac, very good; broad incurving florets. R. Dean is a very promising seedling, colour crimson-scarlet, back of florets old gold. In

Viscountess Hambledon we have a beautiful incurved Japanese, rather late in flowering this year, but a very good "doer," and of dwarf habit, quite small plants carrying good flowers. Seedling Seventy-three is a chestnut of a brighter and deeper colour than Colonel B. Smith, which it resembles in form.

Robert Owen, a seedling of last year, which caused some sensation, was as yet scarcely open, but the partially-expanded flowers were fine; colour rich golden-bronzy hue, with very full centre: a magnificent exhibition flower. A large Seedling white of this year is named Pride of Maidenhead, a name it is not, apparently, likely to disgrace. A Seedling, named N. Molyneux, is a very dark crimson, the deepest colour yet raised; Mrs. Bruce Findlay, a pretty pale lilac; Sea Wave, very bright magenta-rose, with pointed florets, and many others, including promising seedlings from Sarah Owen and E. Molyneux.

Among the newer American kinds, Lord Brooke is a distinct and pretty variety, bright bronze-yellow, shaded red, of dwarf habit; Eda Prass, a delicate pale peach-pink, with incurved florets—very pretty; J. C. Vaughan, plum-colour, large and good; Attorney's Wig, a curious incurved Japanese, with broad florets, flowers not large; M. Jules Toulous-saint and Le Verseau are two French varieties of promising appearance. All the above are Japanese varieties.

Of incurved kinds, the new Baron Hirsch, already certificated, is a decided acquisition, colour a reddish-chestnut with a golden-bronze shade, a fine flower for exhibition; Lucy Kendall, a sport from Violet Tomlin, opens a deep carmine-rose, shading off to a lighter colour with age, inside of florets a nankeen-yellow; another, a seedling from Refulgens, is of similar colour, with broader florets. Robert Petfield, mauve, shaded silvery-white, an acquisition among the incurved kinds, a good deep flower. Mr. Owen also has many seedlings both of single and Anemone varieties, promising to be distinct from any yet in commerce. It may be worth while to remark that the whole of the stock of Miss Lilian Cope, the white sport of last year from Etoile de Lyon, has here reverted to the original. It would be interesting to know whether this has been the case elsewhere. *H.*

A TRAVELLER'S NOTES.

(Continued from p. 644.)

SINGAPORE, Feb. 16.—The Botanic Gardens at Singapore, presided over by Mr. H. N. Ridley, the head of the Botanic and Forest Departments of the Straits Settlements, are situated a little over three miles out of the town, and are very pretty and well kept. The roads are broad—all covered with red earth—hard and smooth, and the grass, on which are planted the various clumps and single specimens, is remarkably fresh and green (doubtless owing to a continuous rainfall), though a little coarse. All the ground is gently undulating, so that from scarcely any point does one see much of the garden at one time. The garden (66 acres in extent) is entirely surrounded by public roads. The road from the town to the garden, leading past the Government House, is very pretty—now passing through a clipt hedge of a *Bambusa* known here as "nana" (which, however, when unclipt reaches a height of from 10 to 12 feet), and now past a large grove of fine *Mangosteens*; occasionally past rows of Chinese shops, those traders of the East, apparently in the majority everywhere, and often past some fine specimens of *Ravenala madagascariensis*, *Poinciana regia*, *Spathodea campanulata*, the last two now bearing their gorgeously-coloured flowers.

On entering the garden, one is at once struck with the general cleanliness and neatness of the place, the broad, smooth road, 20 feet wide, having on one side a grass-covered slope, dotted with many single specimens, and on the other some fine groups of Palms; whilst very effectively both sides are lined with oblong and small circular beds filled with dwarf flowering plants. These beds are tastefully filled with *Tagetes*, *Coleus*, *Alternanthera*, the pretty dwarf yellow-flowering *Asystasia lutea*, and a taller blue-flowering *Acanthad*—a species of *Barleria*—one sheet of clear blue fair-sized blossoms. I also noticed *Isostoma longifolia*, with its numerous

tubular long white flowers, amongst others. Many of the small circular beds have centre plants, such as a variegated Ananas, or a young Cabbage Palm (*Oreodoxa regia*).

On the slope referred to, on the right of the road, on a thick rich lawn, composed chiefly of a broad-leaved *Paspalum* with a woolly kind of flower, and *Paspalum conjugatum*, with a curious dichotomously-branched spike, are many single specimens, including some Conifers, the most noticeable being two nice specimens of *Araucaria Bidwillii* and *Cunninghamii*, the latter a bushy regular specimen, some 30 feet high; *Dacrydium elatum*, distinguishable by its close small thick foliage, appearing in the distance like a solid dark green pyramid. *Podocarpus* and *Biota* are also represented. Opposite this bank and before reaching the pond, are some fine groups of the Sago Palm, *Metroxylon laeve*. The bases of these clumps are impenetrable masses of various-sized off-shoots. In each clump several main stems have gone ahead and tower up for nearly 70 feet. Their large spreading heads are not unlike a Cocoa-nut Palm, but lack the peculiar pale green of that species, and are not so graceful or wavy, but nevertheless the leaves, often 20 feet long (in the young vigorous off-shoots, longer), form a most impressive sight. One of these Sago Palms was in flower, a many-branched head bearing several hundred seeds, each as large as a Greengage.

Near these groups, against the boundary hedge is a fine African Oil Palm, *Elais guineensis*, with a head some 27 feet in diameter on a trunk of much the same height, clothed for the whole of its length from the base upwards, with the lower portions of the dead petioles of former leaves. The leaves have been cut off, but the bases of the leaf-stalks remaining are evidently persistent for a considerable time.

Between these groups of Sago Palms the *Ravenalas* are very fine, with their half-circular immense heads of flat leaves.

In front of these large groups and close to the row of flower-beds, are some single specimens—including a magnificent bush of the Gum Copal tree, *Hymenaea verrucosa*, a *Brownea coccinea* with its long, often somewhat bare, drooping shoots, studded with numerous heads of its brilliant red flowers; and a *Jonesia Asoca*, a native of Java, with heads of flower produced on the old wood, not unlike an *Ixora* in shape as well as in colour, which varies from pale yellow to brick-red—some of the heads being 8 inches through. These heads of flowers are very numerous, and produced as they are on the old wood on very short stalks, look as though they had been "stuck on" without any choice as to position and without any definite object.

In the pond now reached, grows *Nelumbium*, the pretty, long-stalked peltate leaves being thick on and above the water's surface.

The lake is large, long, and narrowing off at one end; on its right bank near the road are some single specimens, but for the main part it is open, the view over its entire surface, with the exception of a small island in the centre, being almost unbroken. Opposite an *Amherstia* bearing its brilliantly-coloured drooping racemes, is a young *Spathodea campanulata*, its shoots terminating in its equally gorgeously painted large-lobed campanulate blossoms, and near a tall *Dacrydium Horsfieldii*, some 40 feet high (a native of Malaya), is a pretty little *Verschaffeltia splendida*; whilst opposite, on the sloping bank, are various specimens of *Cupressus funebris*.

Further up the pond, are a couple of fine Mangoes, and a *Mimusops Elengi* (the highly-scented, and in India sacred, flowers of which I have so often referred to), in the branches of which are two fine *Asplenium Nidus*, with splendid foliage of the richest pale green, the individual leaves being often 5 feet long.

Beyond these is a small-leaved Fig tree, *Ficus Benjamina*, with scarcely any main stem, but with numerous thick branches (in their turn again much branched), springing in every direction from almost the base of the tree, and forming a huge round even ball when regarded from a distance. On its branches many Orchids—*Phalaenopsis*, *Celogynes*, *Aërides*, &c.—have been attached; the second-named seemed to do best. The leaf of this *Ficus* is small—scarcely 2½ inches long; but it has the unmistakable whitish, smooth bark of the genus. A few feet from its base is an *Areca-nut*—*Areca Catechu*—its slight, tall stem soaring like an arrow straight up through the twisted, irregularly branched Fig, its small head being above the topmost leaves of the Fig; it cannot be less than 100 feet high. Near this Fig are two fruit trees—one *Pierardia dulcis*, a native of Malaya, with strings of fruit,

somewhat like a Grape, sub-acid in flavour, and a favourite with some Europeans. The other is a specimen of the Sental—*Sandoricum indicum*—not much cared for.

Passing through two groups, one a fine group of Mangosteens—in themselves, apart from their splendid fruit, very handsome trees—with their large opposite leaves—8 to 10 inches long, varying in colour, according to age, from the palest to the darkest green, and so thick and glossy as to resemble on a very large scale a fine *Camellia* at home, and the other a mixed one, composed of *Brownea grandiceps*, *Hibiscus* (producing its large purplish-red flowers), many *Crotons*, and a large *Spathodea campanulata*, the vermilion and orange flowers of which are scattered all over the roadway, one reaches two very interesting plants, one on each side of the road, almost opposite each other. One is a large tree of the deciduous *Pterocarpus indicus*, in the branches of which is an immense mass of *Kenanthera arachnites*, its hundreds of dead roots hanging down, and clinging to all the branches within reach. It is a magnificent piece, growing freely.

Opposite to this is a thick bush of *Brownea grandiceps* in flower, some 33 feet in diameter. It is curious how much of its foliage is quite underneath, where no light can possibly get at it, and that many



FIG. 108.—RHODODENDRON DAHURICUS (HARDY, EARLY SPRING-FLOWERING SHRUB): FLOWERS, LILAC.
(SEE P. 696)

of its gorgeous flowers are in the same position. This is, I think, the finest individual bush of this plant I have yet seen.

Pausing for a moment, and looking back at the rear of the Mangosteen clump before referred to, a view is caught of some splendid *Ravenalas* near some tall *Arecas*; the effect is very fine.

Passing on towards some small beds below the band-stand, one passes a specimen of the famous Champac—*Michelia Champaca*—opposite a large *Calophyllum inophyllum*, which I mentioned as being so fine at Penang. The beds are filled with various plants amongst which I noticed *Mussaenda erythrophylla*, with broad, large, deep crimson bracts, 2½ inches wide, very hairy in a young state. The five-petalled flowers are of a beautiful creamy-yellow, with a centre of short rich crimson hairs. In other beds are *Grammatophyllum speciosum*, *Vanda Hookeri*, and *Arachnanthe Lowii*, all doing well; whilst in a sunk terrace below are some magnificent beds of *Crotons*, 6 to 8 feet high, of the richest crimson and yellow—their great fault is they are rather leggy. A dead flower-stalk on a *Stauroplepis lissoclioides* near here shows the scars of more than thirty flowers.

The space around the band-stand on a grass terrace, surrounded by a road 30 feet broad, is very prettily and effectively planted. Beyond it, on another raised terrace, are numerous oblong and circular beds

planted with *Hibiscus*, *Lonicera* flowering freely, *Alternantheras*, *Dracenas*, *Crotons*, and often with a centre-piece, such as *Ravenalia* or *Caryota*. Pairs of Palms at the head of the steps leading to the band-stand, render the general effect very pretty.

Bearing away in the direction of the superintendent's house, and passing a fine pair of *Oreodoxa regia* and a fine *Stevensonia grandifolia* some 30 feet high, with a thick head, each leaf overlapping the other, one reaches a nice young avenue of *Sabal Palmetto*, a native of the Southern United States, N. America. The plants are not much more than 12 feet high, but the broad, grey, palmate leaves are borne on thick stiff stalks coming right away from the base, yielding a particularly pleasing effect.

From this point to the palmetum, situated on the slope immediately beneath the superintendent's house, is a long avenue of the more graceful and delicate-looking Javanese Palm, *Rhopalablaste hexandra*; whilst another of *Arenga saccharifera* leads back to the main public road. This last-named avenue is somewhat spoiled by the trees on one side being twice as high and twice as large as those on the other. Both sides were planted at the same time, but for some unexplained cause have failed to thrive equally well. The long dark leaves of these *Arengas* (which I have so often referred to) are very fine; at their base they are enveloped in the stiff, strong, brown spiny hairs. Behind this *Arenga* avenue are long beds of *Bromeliaceæ*, a representative collection of this highly interesting family.

The palmetum is still young—only established some six years, consequently the majority of its specimens are small—amongst their numbers are several species of *Areca*, *Calamus*, *Oreodoxa*, *Cyrtostachya*, *Ptycosperma* (*Kentia*) *McArthurii*, *Verschaffeltia splendida*, and many others, amongst which I must not forget to name a very fine piece of *Corypha Gebanga*, which I do not remember to have seen since I left Calcutta. *James H. Veitch*.

(To be continued.)

ROUND MANCHESTER.

THE FERN NURSERY, SALE.—The existence of such an extensive and well-appointed establishment, devoted entirely to a collection of Ferns from all parts of the world, as that of Messrs. W. & J. Birkenhead, points to the fact, that in spite of certain Ferns, easy to be raised from spores, occupying a large proportion of the space devoted in gardens to the cultivation of these beautiful plants, there is still sufficient interest shown in uncommon or rare species to keep a nursery well occupied in their cultivation. Indeed, the great difficulty, so far as the rarer species are concerned, has been to get a sufficient stock of them to meet the demand, which is steadily increasing. Hard on 1500 species and varieties of Ferns are cultivated in the score or so of houses and ranges of pits, while large quantities of the hardy kinds are plunged in beds out-of-doors, which are sheltered by rows of trees and shrubs; and everywhere there is evidence that the various species are, each after its kind, hardly grown in the most manageable form for the purchaser, and not nursed up to make merely an effect in the nursery. A cursory glance revealed the great degree of completeness of the collection, and disclosed the presence of small batches of the rare species that are almost unknown in other gardens, and some not yet found in the various botanic gardens of this country. Among these are the singular and beautiful *Danaea crispata*, with its fleshy fronds, of a peculiar tint of green, something like that of *Trichomanes radicans*, the finely-cut pinnae being beautifully crimped, and the stems having curiously swollen joints. Other quite new species are expected to be among the various small importations, and especially among the Filmy Ferns, which have been imported. The rarer of these it is Messrs. Birkenhead's object to place within reach of growers, now it is known that their culture is easy, and that no specially constructed cases are necessary to grow them in. These beautiful species are grown at Sale, not only without difficulty, but in some cases in positions that other plants would not thrive in, such as damp shady corners and moist places beneath plant stages. In such positions was

found a fine lot of the charming *Hymenophyllum cruentum*, whose fronds at a certain stage turn of a blood-red tint; of the lovely little pigmy *Trichomanes parvulum*, *T. reniforme*, *T. meifolium*, *T. trichodeum*, *Hymenophyllum Bridgesii*, and many others which would give an interesting feature in moist nooks in those fine rockeries which Clapham, Pulham, and, indeed, the Messrs. Birkenhead themselves, know so well how to provide, or in similarly humid corners in plant houses. With the *Todea* experiments made at this nursery have proved that they may be grown well in almost any plant-house, or, indeed, under certain circumstances, in a cold frame; but the most important success that may be recorded is the growing of *Todea pellucida* in an ordinary greenhouse, and not protected by a bell-glass or a Fern-case. Of course, when it is thus grown, it requires unremitting attention to see that it does not get dry, or it will quickly perish in the summer time; but the same attention must be afforded a large proportion of other species.

Examination of the *Adiantums*, or Maidenhair Ferns, showed that the genus has been greatly augmented of late years by importation and garden-raised varieties, such as the *A. cuneatum* section, which is now so large as to have become quite embarrassing as regards the relationship these hybrids bear to each other. Among the great collection at Sale we noted the rare *A. Feei*, which has received a not unmerited character of being bad to manage; the elegant *A. dolabriforme*, with its points laden with young plants; the graceful *A. neo-caledonicum*, the deeply-cleft *A. speciosum* and *A. palmatum*, the distinct *A. monochlamys*, the fine *A. Williamsii*, and, of course, that queen of *Adiantums*, *A. Farleyense*. Attempts have been made to secure the curious little Indian *Adiantum Parishii*, but the plants did not survive, and for the present it has failed. The different forms of the hardy *A. capillus-veneris* also embrace many very handsome and distinct kinds, all of which are grown as cool greenhouse or frame plants, for they are not safe unprotected, unless in very favourable situations.

The *Aspleniums*, *Polypodiums*, *Gleichenias*, *Gymnogrammas*, and, indeed, most other genera, are well represented at Sale, but we must be content to name only a few of those which appeared to be either very rare, or were exceptionally well-grown. Among such were *Sadleria cyatheoides*, of Tree-Fern habit, and with elegant pale green foliage; *Davallia fijiensis elegans*, the finest cut, and most beautiful of the species; *Gymnogramma Muelleri*, a singular species from north Australia; *G. Pearcei robusta*, a really strong and manageable form of this delicate species; *Onychium auratum robustum*, which bears the same relation to its species as *G. Pearcei robusta* does to *G. Pearcei*. A similar advantage is secured for the gold Ferns by a giant form of *G. chrysophylla*. In other houses we find *Lygodictyon Fosteri*, *Hypoderris Brownii*, *Pleopeltis fossa*, *Mohria thurifraga achilleaefolia*, many rare *Nothochlænas*, *Pellæas*, and *Cheilanthes*, one of the last-named, *C. odora*, being very fragrant; as also is *Aspidium fragrans*, which fills the house with its delicate odour. Another remarkable section of the Fern collection here is the large number of different species of *Platycerium*, so quaintly contrasting with the frondage of other kinds. The largest were *P. grande*, although the *P. stemmaria* has very massive fertile fronds. The rarest is *P. Wallichii*, and one of the most elegant is *P. Willinkii*.

In one of the warm-houses also there was observed a surprisingly fine collection of *Selaginellas*, which are plants always associated with Ferns, and on turning to the hardy ferneries we found the same profusion as in the more tender species, but at this season many of them are at rest. In this respect the *Scolopendriums* being evergreen are very desirable, and at Sale is a bewildering variety of them, crested, crimped, tasselled, and fringed, in every conceivable way. Two or three new varieties, not yet sent out, are specially beautiful, and notably one, which appears to be a fimbriated and crested form of *S. vulgare crispum*.

The *Lomarias*, *Athyriums*, *Aspidiums*, &c., each

have their quota of standard forms or novelties, and for them, as for the unmentioned, as well as for a valuable number of hints on culture, we must refer our readers to the admirably-compiled and well-illustrated catalogue sent out by the firm. The book in itself is enough to set anyone with the means at his command (and who has not, so far as one or other of the classes are concerned), growing Ferns, and the value of the information conveyed in the different articles as to the proper ways and means of growing all classes of Ferns cannot be over-estimated, as they are the result of years of careful observation and experience by the proprietors.

TREES AND SHRUBS.

EUONYMUS EUROPEUS.

THIS hardy deciduous shrub is worthy of being more commonly planted in shrubberies and similar places, but will not succeed under the shade of other things. The bright crimson seeds which are exposed when the seed-vessels burst, afford a welcome glow of colour when little else is to be seen in late autumn and early winter. The shrub has possibly been neglected because it is a native, but it should not be despised on that account. It is occasionally seen in a wild state in full beauty, and I know of no other deciduous shrub which is so pretty at the present season. The white-fruited variety is very seldom met with, but is almost as valuable from a decorative point of view, although I am not sure that it fruits so freely as the type; both are very pretty for filling vases and for table decoration in the autumn and early winter. *W. H. Divers, Kelton Hall Gardens.* [*E. e. latifolius* is a fine variety, with larger leaves and bunches of fruits, which exceed those of the type in size. These *Euonymus* require full exposure to the sun to flower them really well. Ed.]

DAPHNE GENEWIA.

At first sight this pretty little *Daphne* might easily be mistaken for one of the smaller-growing Lilacs, the colour of its flowers, together with its habit of growth, closely resembling the Persian strain. Although it was first sent out some six-and-twenty years ago from Japan by Mr. Fortune, it was almost lost to cultivation until a few years ago, when it was brought more prominently to the front. It is in every way a valuable and free-flowering shrub, and well worth adding to any list of deciduous blooming shrubs. Its flowers are produced in pairs and clusters, varying from four to six in a cluster, and of a beautiful lilac colour. They are four-lobed, with a tube about half-an-inch long, and carried along slender arching shoots; its leaves are opposite, lanceolate, and slightly downy. It grows to a height of about 3 feet. Unfortunately, it is not sufficiently hardy to withstand the severity of our winters without some kind of protection, but with the shelter of a wall it will be found to do well. It delights in a rich, well drained soil, and should receive copious waterings during its growing period. Not only is it a valuable out-door shrub, but it may with advantage be included in any collection of forcing shrubs. Under careful treatment, it can be had in bloom during the first months of the year with good results. After flowering, the specimens should be encouraged to make growth in a gentle heat, and afterwards placed in full sunshine to ripen their wood. They last a good time in perfection, which is a very important item at this season of the year. *H.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

CELERY.—Means must now be taken to protect the early Celery from frost by means of dry Bracken or long litter placed on a span-like frame over the rows or beds. This kind of covering is also protective in windy weather. The earthing-up of all late Celery should be closely followed up in light soils, but in heavy retentive soils much moulding-up

causes decay, and in such protection it is better than moulding.

BRUSSELS SPROUTS.—All decayed leaves and rubbish should be cleared out from between the rows, and from the plants. The sprouts to be first used are those at the bottom of the stalks, as when these are allowed to remain, the sprouts at the top make slow progress. In no case should the tops be cut off at this season, as these form a protection to the sprouts below. Plants intended for the latest supply of Sprouts should be kept clean, like the others, and have additional soil drawn up to the stems if this seems to be required. The same remark will apply to other Brassicas.

LEEKs.—In order to have these plants nicely blanched, they should be moulded-up somewhat in dry weather, care being taken to keep the soil out of the middle of the plants, and making it, if it be light soil, firm about the stems in so doing. Late successions should be grown as hardy as possible, and no means taken to blanch them at this season.

ONIONS.—Those sown in August, if looking unhealthy, should be afforded a dressing of dry wood-ashes, with a small quantity of guano added, which will check disease, and promote a healthy growth; but before applying the fertiliser, all of the diseased plants should be removed from the beds, and the ground between the rows evenly trodden. The Onions in store should be occasionally examined, and any that are decayed picked out.

POTATOS.—If very early Potatoes are required, some well-matured tubers should be placed in loam, leaf-mould, or any light soil, in a temperature of 50°. A hot-bed made up of tree leaves is the best medium, and here they soon make roots; but it is useless to start thus early, unless means can be taken to plant the tubers out in hotbeds when ready, as they soon starve in the boxes, and lose vigour. Frames, if made up at this date, would be in condition for planting early in January. There should be a layer of good loam, 6 to 9 inches, laid on the leaves when these have got regularly heated in all parts of the bed, and this soil should be allowed to become warmed through before the started sets are planted. Veitch's selected Ashleaf and Sharpe's Victor are good early frame varieties. Potatoes in store for planting and consumption should be occasionally turned over, and diseased tubers removed. See that the tubers for use do not lay in a large heap, or the warmth and moisture induced by a mass of them laying together will soon set up growth. Seed-tubers should be laid thinly in a cool but frost-proof dry place.

HORSE RADISH.—Lift all of the roots, and lay in those which are large enough for table use. Those fit only for planting should be tied in bundles of twenty-five or fifty, and laid in the soil till the planting season arrives. The usable roots may be laid in in rows and covered with soil, and in frosty weather with litter. The ground for the new plantation should be deeply trenched, and if light, well dressed with cow manure, placing the manure in the bottom of the trenches, or at the second course; heavy soil may have burnt refuse incorporated with the soil, and rough stable litter, &c., put into the trenches.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

VINE BORDERS.—These in time, owing to their small size, become exhausted of plant nutriment, and if the object of the gardener is produce of the finest quality, a change of both Vines and soil will sooner or later be unavoidable. The length of time that a Vine soil remains in a fertile condition varies, and it will depend on the amount and kind of drainage provided, the materials of which the border consists, and the treatment which it has received since it was made. The Vines themselves always indicate by their wood, the size of bunches, berries, and leaves, when a change has become desirable, and the present season is the best in which to undertake the heavy work involved in forming new borders. In order that the work may be expeditiously carried out, everything needed should be got in readiness for a start. The first operation should be to clear out the Vines, and give the framework of the vinery a washing with petroleum, especially if mealy bug was present on the Vines; then the soil should be dug out, and wheeled away, and after that is done the drainage of the border should be put in good order. In some cases, it will be necessary to bring the latter a little nearer to the surface, and in others to place it deeper, as most old Vine borders are either

very deep or shallow. If friable yellow turfy loam is to form the staple of the new border, sufficient should be provided for a depth of 2½ feet after it has sunk. As so large a quantity of fresh soil is not at every gardener's command, and soils approaching clay or sand have to be utilised instead, the depth should be proportioned to the kind employed, the heavier the shallower, and vice versa. The various other ingredients acceptable to Vines are also regulated by the kind of soil the gardener has to make use of; sandy soils, having moisture-holding substances mixed with them, and those of a clayey nature some materials which will tend to render them more porous. Provided friable yellow fibry turf is at command, chop it into pieces about 6 inches square, and add in the following proportion, one of lime or old plaster to four of soil; one of fresh horse droppings to six of soil, and one of wood ashes to five of soil, but in the absence of the ashes one hundred-weight of kainit to ten loads of soil, and one hundred-weight of Thomson's Vine Manure to every three loads, and one hundredweight of basic slag to every five loads, of the whole. After thoroughly mixing these ingredients, place a layer of turves, grass downwards, over the drainage, and then fill up the space with the compost, in a rather loose condition, which can be altered, before the young Vines are planted. This completed, wash the woodwork and glass, limewash the walls, mixing a little flowers-of-sulphur in the wash. To make a good job of it, paint the wood and ironwork twice with oil paint, and the hot-water pipes once with lampblack, boiled linseed oil, of the consistency of ordinary paint. This coating for hot-water pipes I have used for ten years for our hot-water pipes, and various other things in the house, and not even the tenderest fronds of Ferns have been affected by it.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Moreworth Castle, Maidstone.

The change experienced in this county from very mild to frosty weather will have put a stop to fruit tree and bush planting; still, there need be no delay in making preparations for a resumption of the work when milder weather comes. Soil and manure may be wheeled to the spots where it will be wanted for planting and top-dressing, leaving it in heaps, or in the case of mulching spreading it at once. Newly-planted trees should always be mulched at the time with half-decayed stable dung, never with fresh stuff.

PRUNING AND NAILING of Plums and Sweet Cherries may be pushed forward when the frost is out of the branches, suitable young shoots being left to fill the places of older ones cut out, the finest fruit coming from young wood. Do not crowd the trees with bearing-shoots. Small lateral shoots may be cut to two or three buds; but leaders, and those intended to grow into main branches, should be left at from 18 inches to 2 feet in length. Trees which make too much strong wood should be root-pruned, rather than pruned too severely. Crab stocks for working should be bought and planted when convenient, selecting the free-growing ones. Trim the roots carefully before planting. Where outside work is generally at a standstill, shreds and labels may be made, stakes pointed, and nets mended. The fruit in the fruit-room will require weekly examination, all decaying fruits being removed, and the room well ventilated in fine mild weather. In a frost-proof place, which is moderately damp, Apples are kept in a plumper condition than in a dry one, but Pears are the better if stored in a room somewhat warmer, which brings out the flavour.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

MAKING GRAVEL WALKS.—It is a matter of some importance that new walks should be made with a due regard to the purpose for which they will be used; and if for vehicular traffic as well as for pedestrians, as is generally the case in large gardens, a greater depth of soil than would be necessary in the case of walks for pedestrians only should be excavated, so as to find space for a good quantity of hard materials as a foundation, and for drainage. The first point to determine when making a walk, after the line of direction has been decided upon, is the width that it shall be made. Main walks should be from 10 to 18 feet in width, according to their length and the extent of the grounds, the others being from 5 to 7 feet wide. This done, due regard should be paid to the level of the ground on either side of the walk, as well as the direction in which it is proposed to take the surface-water. A depth

of from 9 to 18 inches, in a general way, is ample for walks of the above dimensions; but in cases where the top soil is shallow, and rests on chalk, gravel, or stone, all that is necessary is to remove the top soil, with which the ground on either side the walk may be rendered level, and depressions filled up. Whatever kind of edging is employed, whether turf, box, flints, Heather, &c., it should be laid before the bottoming of the walk is proceeded with. The bottoms of walks should be deeper at the sides, that is, the walk should be slightly convex, forming at the sides channels to convey water away. If the substratum be chalk, the surface should be well pounded, allowing sufficient fall (longitudinally) to the points towards which it is decided to drain the walks, providing means at each outlet to convey thither any water that might lodge on the opposite side of the walk, that is, when it is not convenient to have outlets connected with drains or "catchpits" on both sides of the walk. In the case of walks on soils resting on a bed of chalk, gravel, or stone, as mentioned above, a smaller quantity of hard material becomes necessary. A broad walk, having an excavated depth of 18 inches, should have at least 1 foot of rough hard material put into the bottom, over this a layer 3 inches thick of coarse gravel, followed by a like depth of fine red gravel, if obtainable. This should be raked level and smooth, and rolled as soon as dry enough—first with a light, and afterwards with a heavy roller, repeating the operation on four or five days in succession (weather permitting), or until a level firm surface is obtained. Walks of from 9 to 12 inches deep should be afforded a layer of proportionate thickness of the several materials recommended for the work described above. Bold, graceful curves should be observed in making winding walks. Where Box is used as an edging, the work requires to be performed with precision and neatness.

HERBACEOUS BORDERS.—Having cleared away dead flower-stems, &c., put a layer of shored dung on the land, and "point" it into the ground, taking care not to go so deep as to injure roots or bulbs. Failing shored dung, or if the land is not poor, leaf-mould may be applied instead.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

STOVE PLANTS.—Overgrown Crotons may be headed back at this season, first taking precautions to withhold water from the plants a few days previously, and to keep them on the dry side till they break away into growth. On bright days syringe the cut-back plants with tepid water. After cutting-back is a good time to examine carefully for mealy-mug, scale, &c. Dracænas which have lost their leaves, and developed long stems, may be cut back at this season, and the stems, if increase is desired, may be cut into pieces of 1½ to 2 inches long, and placed singly, in small pots, or several together in shallow pans, about 1 inch apart, in light sandy compost, covering them with about half an inch of the finer portions, and afterwards placing them in the propagating-frame. These will soon strike, producing a number of useful plants, which may be grown on in hotbeds or the stove as soon as March arrives. Also increase the stock of Pandanus Veitchii by suckers taken off old plants; pot these if they have no roots, and keep them rather dry till well rooted and established. By propagating these various plants at an early date, they will the sooner become of use in decorating-work. Head back Eucalyptus and Aralias, taking care not to cut below the graft. Those which strike from cuttings may be increased in that way. The plants used for front lines of stages, the margins of beds, &c., should be propagated forthwith. The following are amongst those most suitable for this purpose:—*Isolepis gracilis*, *Tradescantias*, *Selaginellas*, *Gymnostachyum*, and *Panicum variegatum*.

CAMELLIAS.—During the winter months, Camellias require a good deal of attention, as, for instance, if during severe frost, too much fire-heat is allowed, the buds fall largely, therefore, no more heat should be used than will maintain a night temperature of 45° to 50°, with a rise of 5° by day. Do not let any plant stand near the hot-water pipes or other heating apparatus, as a dry state of the roots will generally bring about bud-dropping. When Camellias are required to be in bloom early in the season, they should be encouraged to make and complete their growth early in the summer. By the exercise of forethought, and a good stock of plants of flowering age, a succession of bloom can be obtained from November till the end of May. Camellias which are

planted in beds or borders should be examined occasionally as to the state of the borders, &c., which should be moist rather than dry. Weak manure-water and soot may occasionally be supplied to such plants as are carrying good crops of flower-buds. Sponging of the foliage of Camellias, freeing them from dust and black fungus, is very essential for the health and good appearance of the plants. It is usually a winter job, but when time can be spared, it should be more frequently performed. A lower temperature should prevail in the stove during the present month, and until the days perceptibly lengthen, 60° by night will be quite sufficient, with a rise of from 5° to 10° by day; and during frosty weather, rather than keep the hotwater-pipes very hot, the thermometer may be allowed to fall 5°; and if the roof is covered—at least, so far as regards the lower 6 feet at the bottom of the slope—with Frigi Domo canvas, straw-mats, &c., no harm will accrue, and fuel will have been economised, and the plants will be all the better for the plan adopted.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

FLOWERS FOR DECEMBER.—*Lælia autumnalis* is one of the most useful species for flowering in this month, as it makes a lovely group for the flower-house, arranged with Maidenhair Fern, and the white variety of *L. autumnalis alba*, together with *L. Gouldiana*, *L. purpurata*, and *L. albidia*. These species are better for a cool, dry temperature, and being watered sparingly during the winter months. The deciduous *Calanthes* are others are now at their best, making a good floral show. *Calanthe Veitchii*, *C. vestita rubro-oculata*, *C. v. luteo-oculata*, and *C. Turneri* are familiar plants in most gardens, and from the cross-fertilisation of these varieties have sprung numerous beautiful hybrids of varied shades of pink and delicate intermediate tints, and to white. Many of these are in commerce, viz., *C. Veitchii alba*, *C. Sandhurstiana*, *C. Sedeni*, *C. bella*, &c. A rich collection of these useful winter-flowering Orchids if seen in bloom would be sure to stimulate an Orchid hybridist to make renewed attempts in the way of securing still finer varieties. *Calanthes* may in course of time become very popular as garden plants, rivalling in point of numbers the *Cypripedium*. *Sophrontis grandiflora*, too, is a conspicuous flower, and deserves to be largely cultivated. Small panfuls of *Sophrontis* suspended in the cool-house take up but little space, and afford a large supply of flowers, which are useful in many ways, and last a long time in perfection. A variety generally known as *S. grandiflora purpurea*, but sometimes as *S. g. rosea*, is as beautiful as the former, but the flowers are shorter lived. It differs from the typical form, chiefly by the pseudobulbs being inclined to be flat, and the foliage of greater substance, and has a more depressed style of growth. I find this species is not so hardy as the former, and requires removal to the intermediate-house for the winter. Of the genus *Angraecum*, which is always beautiful and interesting, a few are generally to be seen in bloom during this season of the year, including *A. sesquipedale* and *A. eburneum*; also *Saccolabium giganteum*, *S. g. illustre*, *Odontoglossum cordatum*, *O. maculatum*, and *Oncidium unguiculatum*. Towards the end of the present month, a few flowers of *Lælia anceps* will be out, but I prefer to keep the bulk of these for the following month.

POTTING.—The repotting of *Pleiones* may now be proceeded with, or at least as soon as the flowering of the plants is past, as the longer these are delayed, the greater the mischief, root-action commencing at once. Chopped peat and sphagnum moss, with a liberal addition of loam, sand, and powdered cow-dung, mixed together, is a capital compost for these, and it should be put on the surface of the crocks to the depth of about 2 inches in depth, and firmly pressed down, leaving the surface slightly raised above the rim of the pot or pan; into this the pseudobulbs, after having been freed from inert matter, should be dibbled at equal distances apart. Enough of the old roots should be left attached to the base of the pseudobulb to assist in keeping them firmly set in position until the new roots take hold of the compost. A place near the glass in the cool house should be found for them, and at present but little moisture should be afforded—just sufficient to keep the compost slightly moist. I have found *P. Lageraria* doing well when fully exposed to the sun, but it is advisable to grow the other species in houses which are shaded during sunshine.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOW.

TUESDAY, DEC. 13. Royal Horticultural Society, at the Drill Hall, James Street, Westminster.

MEETING.

THURSDAY, DEC. 15. Brighton and Hove Chrysanthemum Society.

SALES.

TUESDAY, DEC. 13. Plants and Bulbs, at Protheroe & Morris' Rooms. Sale of Orchids, Exhibition Plants, &c., at the Bageecha Park Gardens, Weston, Bath, by Protheroe & Morris. 17,000 Fruit Trees, at the Elms Fruit Ground, Park Farm, Cheshunt, by Protheroe & Morris.

WEDNESDAY, DEC. 14. Liliun auratum, at Protheroe & Morris' Rooms. Dutch Bulbs, Roses, Shrubs, Plants, Roots, &c., at Stevens' Rooms.

THURSDAY, DEC. 15. Bulbs and Plants, at Protheroe & Morris' Rooms.

FRIDAY, DEC. 16. Orchids, at Protheroe & Morris' Rooms.

SATURDAY, DEC. 17. Roses, Shrubs, Plants, Liliun auratum, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—40°·6.

Gardening as a Profession.

THE appointment of a gentleman from the architect's office of the London Council to be chief officer of the parks and open spaces under the control of that body, and with a horticulturist as his subordinate, suggests some rather unpleasant reflections. In commenting on the subject, we desire to eliminate the personal element altogether; indeed, we could not do otherwise, as we are wholly unacquainted with the gentleman appointed, and we are utterly ignorant of his qualifications for the post. He may be a highly competent gardener and estate manager; and if so, he will have ample opportunity of exercising his ability. But what we feel deeply is, that the Council should have thought it desirable to go to the architect's office to find a suitable official, when there are scores of competent men among the gardeners and stewards of the country. Among the present superintendents are men of capacity, as evidenced by the establishments under their charge, and who might fairly look forward to promotion in their department rather than to have an architect foisted on them. We have been amused rather than otherwise at the pretentious arrogance of some architects lately in dealing with questions which they do not understand, and we have wondered what the architects would say if the landscape gardeners invaded their province, and arranged the position and curves of the staircase, or the precise height of the portico. But this has been chiefly a paper war, and the dogmatism of the combatants on either side has only created amusement. But the case assumes a more serious aspect when a gentleman from the architect's office is appointed to take charge

of 3000 acres of parks and open spaces. Was the Royal Horticultural Society consulted in the matter? Was any body? Have the gardeners been tried and failed? Well,—if we are to judge from the wretched cockney structures set up in Battersea Park which are fitted for the cornice or façade of a temple, or other important building which are here placed on the ground against a bank in the "subtropical garden" (?) and from the finials or pinnacles from some building which are also dumped down on the bank of one of the lakes, the deplorable defacement of Ravenscourt Park, or the meaningless wiggle-waggles on the Victoria Embankment, the senseless arrangement of the flower beds in that garden, the spoliation of the lawns, the barbaric surgery practised on the shrubs without reference to their nature or mode of growth,—we should be disposed to think the gardeners had failed; but as a matter of fact, gardeners competent to direct can have had little or nothing to do with the matter. Things have been evidently pretty much left to garden labourers (we are speaking of the Embankment Gardens), and who, we are bound to confess, are not much more likely to act satisfactorily as landscape gardeners than the architects themselves. All the more necessary is it, therefore, that they should act under the direction of some competent official.

This preference of an architect to a landscape gardener, however lamentable from a public point of view is, of course, a triumph for the architects, and a humiliation to the landscape gardeners. To what are we to attribute this? Is it not in large measure to a want of proper organisation among the gardeners? The architects are an organised professional body, like the lawyers and the doctors, and both they and the public in general profit by the standard of capacity and character which is thus guaranteed. But for the gardener there is nothing of the kind. Isolated, and unwilling to act in concert, they have been, and so they are likely to remain. Much is demanded of them, incessant foresight is a necessary of their craft, great responsibilities are thrust upon them, and yet in public estimation they stand no higher than domestic servants with much inferior qualifications, and they are passed over in favour of members of other professions when what would be a legitimate object of ambition on the part of the gardener presents itself. The fault for this state of things partly rests with the gardeners themselves. They are lacking in cohesion, they are indifferent to and do not adequately support the organisations which might and would help them. How many of the gardeners of the kingdom, for instance, are members of the Royal Horticultural Society? Very few. But is it not certain that if they were represented in sufficient numbers on that body, they might impose their will upon it, and compel it to take the lead, not only in certain departments, as it already does, but also in those questions which concern the education, the social position and the welfare of the gardener. For instance, would not the Institute of British Architects at once take action, indirect, if not direct, if such an insult to their profession were made as that which has been (all inadvertently, no doubt), inflicted on the gardeners. Suppose a chemist and druggist could be appointed as physician to a hospital, would not the College of Physicians demand to know the reason? Or, suppose that a solicitor's clerk could be appointed a County Court judge, fancy the commotion in the Inns of Court and on the Bench. Our suppositious cases

are farcical and impossible—ought not the gardening fraternity to be so organised that any like case in it should also be considered farcical? The matter is not a merely professional one—it concerns the ratepayers and the public at large. The ratepayers and the public of the metropolis are, of course, immensely concerned in the proper administration of the parks, whilst the whole nation is concerned in the agricultural depression. Is it not obvious in this connection that the gardeners succeed where the farmers fail? Look at the immense horticultural establishments, the market gardens, the fruit grounds, the houses for the growth of Tomatos, Grapes, Cucumbers, &c., which are to be found now in the environs of every town! Do they not show that the gardener can make something out of the land even now, when the agriculturist is at his wit's end? We do not care to push the matter too far. We allude to it to show that the horticulturist is a much more important man in the country than he is usually supposed to be, and, moreover, that the methods which lead to success in horticulture would be equally likely to do so in agriculture. It is time, therefore, that the horticulturist should have proper recognition, and that such an anomaly as the appointment of a gentleman from the architect's office should be rendered either impossible, or capable of satisfactory explanation.

In the meantime, the general diffusion of practical knowledge by the agency of the County Councils, and the establishment of a higher system of education in the principles of their art, which the Royal Horticultural Society and other bodies are now striving to bring about, are hopeful signs that the present powerlessness of the gardeners will not as heretofore be transmitted to succeeding generations.

OUR ALMANAC.—Secretaries of societies and others are earnestly requested to forward immediately, the dates of show-fixtures, and meetings of horticultural societies of any kind for 1893, for insertion in the Almanack to be published in our issue for January 1.

TACSONIA (HYBRIDA) SMYTHIANA.—We avail ourselves of the opportunity of figuring a very handsome Tacsonia, raised by Mr. SMYTHE, in the gardens of Basing Park, near Alton, apparently between *T. mollissima* and some other species. The leaves are dark green and glabrous above, softly hairy beneath, deeply divided into three lanceolate serrated lobes. The flowers measure about 5 inches in length, and are provided with a tubular cylindric calyx, slit on one side, and downy within. The flower-tube is glabrescent, or slightly downy, the calyx-lobes oblong aristate, the petals rather shorter, oblong-obtuse, of a peculiar and most distinct colour, which some have called rosy-salmon, and others orange-scarlet—in any case, it is very brilliant. The corona consists of a double row of small, blunt, purple tubercles. The elliptic-oblong ovary is downy. These characteristics are very like those of *T. mollissima*, but the colour is entirely different. Mr. SMYTHE, who has sent us flowers on more than one occasion, tells us the plant has been flowering freely out-of-doors on a south wall throughout the summer. It was growing in a 10-inch pot, which was removed at the end of October into the greenhouse, where it continues to flower; indeed it is, in Mr. SMYTHE's opinion, one of the very best greenhouse and conservatory climbers, flowering for nine or ten months of the year. The plant has been previously figured in the *Gardening World*, but we have, unfortunately, mislaid the reference, and are quoting at second-hand. It is therein stated that the plant was raised between *T. manicata* and *T. (hybrida) exoniensis*; but this seems very unlikely. The peculiar slit calyx points to *mollissima* or *tomentosa* as one of the parents.



FIG. 109.—TACSONIA HYBRIDA SMYTHIANA; FLOWERS, ORANGE-SCARLET. (SEE P. 704.)

NATIONAL ROSE SOCIETY.—The annual meeting will take place, by the permission of the Horticultural Club, at their rooms on Tuesday, December 13, at 3 o'clock. The Chair will be taken by the President of the Society, the Very Rev. the Dean of ROCHESTER.

LINNEAN SOCIETY.—At the meeting which was held on Thursday, December 1, Professor STEWART, President, in the chair, Messrs. A. P. GREEN, A. B. MORRIS, A. F. KENT, H. W. MONCKTON, and F. G. PARSONS, were elected Fellows. A letter was read from the Rev. LEONARD BLOMEFIELD, M.A., F.L.S., expressing his high appreciation of the compliment paid him by the presentation of the illuminated address, which had been signed by the Fellows present at the last meeting of the Society, and forwarded to him. Messrs. H. & J. GROVES exhibited specimens of several Irish *Characeæ* collected during the past summer. *Nitella tenuissima*, from Westmeath and Galway, had not been previously recorded from Ireland; and a large form of *N. gracilis*, from two lakes in Wicklow, had been only once previously met with. Referring to the former, Mr. H. GROVES remarked that, although it might be expected to occur in all the peat districts, it had only been found in two widely-separated localities in England, namely, in the Cambridgeshire Fens, and in Anglesea. Mr. A. LISTER made some remarks on the Nuclei of Mycetozoa, exhibiting some preparations under the microscope. Mr. D. MORRIS exhibited some tubers of the *Calathea Allouia*, eaten as Potatoes in Trinidad, where it is known as Tapa Nam Cour. A communication was read from Mr. J. H. HART, of the Botanic Gardens, Trinidad, on *Cecidomyia cephalotes* and the fungi it cultivates. The meeting adjourned to December 15.

—At the usual meeting on Thursday, Dec. 15, at 8 P.M., the following papers will be read:—1. "Notes on the Genera of *Taxaceæ* and *Coniferae*," by Dr. MAXWELL T. MASTERS, F.R.S., F.L.S. 2. "Note on the Affinities of the Genus *Madrepora*," by GEORGE BROOK, F.L.S.

HORTICULTURAL CLUB.—The usual monthly dinner and *conversazione* will take place at the rooms of the Club, Hotel Windsor, Victoria Street, Westminster, S.W., on Tuesday next, December 13, at 6 P.M. The chair will be taken by Mr. HARRY J. VEITCH, Vice-Chairman of the Club. The subject for discussion will be on Growing the *Chrysanthemum* for Exhibition, and will be opened by the Worshipful the Mayor of TAUNTON, the winner of the Champion Challenge Cup of the National *Chrysanthemum* Society last month.

IMPERIAL BOTANIC GARDEN, ST. PETERSBURG.—The Director who replaces the late Dr. REGEL is Dr. A. F. BATALIN; Messrs. KORSHINSKY and MONTEVERDE are the "Oberbotaniker"; Mr. WINKLER Senior Conservator, and Messrs. KUSNETZOW and R. REGEL Junior, Conservators. The Librarian is Mr. ROSTOZEW.

UNIVERSITY OF PRAGUE.—Baron Dr. RICHARD VON WEITSTEIN, formerly of Vienna, is appointed Professor of Botany at the University of Prague.

CHICAGO EXHIBITION.—In reference to the announcement made in our columns last week (p. 676), we are informed that Mr. McINDOE is not the only English gardener who has been honoured with a special invitation from the executive of the above to exhibit at the Great Horticultural Show next autumn a collection of fruit similar to the one shown by him at the International Exhibition, Earl's Court, last August, inasmuch as Messrs. GOODACE, H. W. WARD, and other successful exhibitors at the latter show, were also applied to in identical language, the letters of invitation from Mr. J. M. SAMUELS, Chief Department of Horticulture, Chicago, being dated September 17, and received ten days later.

BIRMINGHAM GARDENERS' ASSOCIATION.—At the last meeting of the Association, Mr. W. CRUMP,

The Gardens, Madresfield Court, Worcester, read a good practical paper "On the Culture of the Apple," giving advice as to planting and pruning, and condemning root-pruning, excepting so far as bruised roots are concerned. Mr. CRUMP also exhibited specimen fruits of 100 varieties of Apples from their Experimental Gardens at Madresfield, including two or three very promising seedlings, and some local and but little-known kinds.

PRESENTATION TO MRS. GLADSTONE.—During the Premier's visit to Liverpool last week, to receive the freedom of the city, Mrs. GLADSTONE was pleased to accept a very handsome bouquet of choice Orchids presented by Mr. JOHN COWAN, on behalf of the Liverpool Horticultural Co.

CION, OR SCION?—"The difference between 'cion' and 'scion' is not generally known. Cion, refers to the cutting of a tree, and scion to the animal kingdom, no matter what *Webster's Dictionary* may say about it. This difference was recognised by all of the early English scholars, BACON included." ANDREW S. FULLER, in *Gardening*. [It is true that BACON's *Sylva Sylvarum* has "cions" (ed. 10, 1676). EVELYN's *Sylva* (1678), has grafts (French, greffes), Inisitions (Latin), and cions; PARKINSON, who wrote more genuine English than EVELYN (1629) has "grafts," and does not use the word cion or scion at all. MILLER (*Dictionary*) writes cion. LITTRÉ's *Dictionary* gives "scion" in the sense of shoot or graft, but not "cion," which latter, accordingly, is the truer English. Ed.]

HORTICULTURAL TEACHING IN BELGIUM.—According to the *Illustration Horticole*, Belgium has two Government establishments—one at Ghent, with an average of forty-four pupils, and one at Vilvorde, with an average of thirty-eight. In addition, the Government subsidises six other establishments, in which tuition and experiments are carried on—at Liège, Tournai, Mons, Carlsbourg, Virton, and Tirlemont.

XENIA ORCHIDACEA.—Dr. KRÄNZLIN of Berlin is continuing this useful publication, formerly issued by Professor REICHENBACH. The species are well and accurately figured, so far as we can judge. Some of them are purely of botanical interest. As we are sometimes asked the meaning of the title, we may remind our readers that the Greek word *xenia* signifies a gift or a present.

MOISTURE AND VEGETATION.—M. E. GAIN has been conducting some comparative experiments, with a view of ascertaining the effect of a moist soil and of a moist atmosphere on the development of plants. M. GAIN finds the action of moist soil very variable according to different circumstances, especially the physical conditions of the soil. The period of flowering is retarded either by dryness of soil, or by moist atmosphere, and it is hastened either by dry air or by moist soil. Under ordinary circumstances, in practice the conditions are combined or mixed. The two factors which retard flowering are a dry soil and a moist atmosphere. These conditions only occur in a foggy or clouded country where the soil is very porous. A combination (1) of moist air and moist soil is very common in wet seasons on a retentive soil; an analogous combination (2) of dry soil and dry air is common in some hot countries. In the first case, the delay caused by the moist air deprives the plant of the advantages derivable from the moist soil, and the period of flowering is very much retarded. In the second case, the advantage consequent on the dry air brings about an earlier flowering. The two favourable conditions may be realised in southern countries by irrigation, the results of which are as every one knows very remarkable. To sum up, it may be said that dry air is very favourable to the production of flowers; moist soil is favourable; dry soil is unfavourable, moist air very unfavourable to flowering. The full details may be read in a recent number of the *Comptes Rendus*, p. 890.

BAUHINIA GRANDIFLORA.—We learn from the *Revue Horticole* that this magnificent plant has flowered for the last four or five years in the open air at the Botanic Garden, Lisbon. Young plants have also been obtained from seed.

CACTUS CULTURE.—Mr. F. A. HAAGE has published an excellent little handbook on the culture of Cactus and allied plants, illustrated by numerous woodcuts. The treatise is published by the Schlesische Buchdruckerei of Breslau, and may be obtained from Messrs. WILLIAMS & NORGATE. Descriptive lists are given, and the woodcuts are excellent.

CHRYSANTHEMUMS.—The *Chrysanthemum* fever seems to rage as severely in the United States as here, if not more so. The *American Florist* has a special number, with a long list of varieties, accompanied by critical remarks and numerous photographic illustrations. The flowers, do not, however, lend themselves well to this kind of representation. The new comer, *Gardening*, has caught the fever, as was to be expected, and also makes a brave show of illustrations.

DEVON AND EXETER GARDENERS' ASSOCIATION.—At the fortnightly meeting held on November 30, Mr. JAS. MAYNE, gardener to the Hon. MARK ROLLE at Bicton, gave a paper upon "The Cyclamen and the Bouvardia: their Culture and Value as Decorative Plants." The subject created much interest, and a long discussion ensued.

THE LATE JOHN DOWNIE.—The enthusiastic horticulturist who was laid to rest on Tuesday, November 29, was the originator of the Fancy Pansy, and raised millions, probably, of seedlings, in his endeavours to improve that flower. In 1844 he and the late Mr. JOHN LAMONT, were the prime movers in starting the Scottish Pansy Society, which still carries on with success its annual show in Edinburgh; and the same two gentlemen, a year or two later, started the Scottish Dahlia and Hollyhock Society, which was carried on for about a decade. About the end of the "forties," Mr. DOWNIE became President of the Scottish Gardeners' Society, which held shows annually with much success for seven years in a large tent erected in St. Andrew Square, Edinburgh.

POISONOUS PROPERTIES OF HOMERIA AURANTIACA.—Baron Sir FERD. V. MUELLER writes:—"It has been known—in South Africa, at all events—for the last few years that the *Homerias* are deleterious to pasture-animals there, but that danger to herds or flocks may arise from these unsuspicious-looking plants beyond their native country has now only been ascertained. *Homeria aurantiaca* has shown itself as easily naturalised and as apt to spread in the colony of Victoria. Near Melbourne, cattle died lately on pastures infested with this plant. It does not seem that the generality of South-African *Iridæ* are hurtful; but as the *Homerias* are favourite garden plants, it would be well that horticulturists in climates where the *Homerias* will grow in the open air should be warned, so that these dangerous *Iridæ* do not get free scope to stray away from gardens. Indeed, it would be best to discard them as ornamental plants in any country not having severe winters."

LECTURE ON HORTICULTURE AT BECKENHAM, S.E.—Professor CHESHIRE, in the course of a lecture at Beckenham on Tuesday, November 22, alluded to the subject of the deficiencies of the soil in regard to certain items of plant food. Mr. CHESHIRE said he was trying to find ideal manures, which would be more perfect in their character than anything they had hitherto used. The three principal ingredients of which the soil was likely to be deficient were nitrogen, potash, and phosphorus, and for the purpose of testing which of those were required, he advised them to take four flower pots, and representing these elements as one, two, and three, to put some mould into the pots, and mix the manures one and three, one and two, two

and three, and so on, and then plant half-a-dozen Barley seeds or some other, and see in which pot they grew best, and by this process they would be able to tell what the soils wanted most.

THE GARDENERS' ORPHAN FUND, AND THE RUGBY CHRYSANTHEMUM SOCIETY.—We are requested by Mr. W. BRYANT, Secretary of the Rugby Chrysanthemum Society, to express his thanks to all exhibitors at the show, and others who so generously contributed flowers, fruit, plants, and vegetables in aid of the Gardeners' Orphan Fund, and to announce that the sum accruing from the show amounted to £9 2s. 6d., and a cheque for this sum has been forwarded to the Secretary of the Fund.

—The monthly meeting of the committee took place on Friday, the 2nd inst., W. MARSHALL, Esq., in the chair. Among the special receipts announced were the following:—Bristol Chrysanthemum Show, per Mr. J. H. Vallance, £1 10s. 8d.; the Woolton (Liverpool) Gardeners' Mutual Improvement Society, proceeds of concert, per Mr. R. G. Waterman, Treasurer, £6; the Chiswick Gardeners' Mutual Improvement Society, proceeds of concert, per Mr. T. Waugh, Treasurer, £21 15s.; Mr. T. Miller, Margate, collecting box, 4s. 6d.; Mr. R. Scott, Manningham, Bradford, box, 19s.; Romford Chrysanthemum Show, box, per Mr. R. Farrance, 9s.; Wimbledon Horticultural Society, per Dr. Walker, 14s.; Mr. E. Hillier, Winchester, box, 5s.; Mr. W. Marshall, box, £1 7s. 3d.; Mr. W. Poupert, Twickenham, box, £2; and Mr. J. Smith, Mentmore, box, 8s. 6d. Having regard to the financial position of the fund, the committee resolved that an election of eight children upon the fund should take place at the annual meeting in February, and the Secretary was instructed to issue the necessary advertisements to that effect. A vote of thanks to the chairman closed the proceedings.

WORCESTERSHIRE UNION OF WORKMEN'S CLUBS AND INSTITUTES.—We publish with great satisfaction the following extracts from the report on Gardening Instruction Scheme for year ending September 30, 1892:—"Mr. JAMES UDALE, F.R.H.S., was selected as the gardening instructor, and commenced work on September 21, 1891. For the ten months of actual work in Worcestershire, the Instructor has sent in monthly reports of work done, and these are worthy of notice. It should be remembered that according to the scheme submitted to the County Council, the services of the Gardening Instructor were made available, without charge of any kind, to every cottager and allotment holder in any district where is a club or institute affiliated to the Union. Mr. UDALE has also been authorised, while making the above his first care, to visit, when time permitted, market gardeners, farmers, and others. In parishes where no institution existed, a small annual fee to the Union of 5s. has secured the Instructor's services. There are not wanting signs that many villages are waking up to desire the benefits which their neighbours have enjoyed, and are anxious for visits from the Instructor. In the ten months, Mr. UDALE's work has extended to forty-five towns and villages in the county. To give a list of these is to show under what great variety of condition and circumstance gardening has to be carried on in Worcestershire. From the borders of the Black country where, in gardening phrase, you must 'ask things to grow,' to the fertile districts of the centre and south, where 'you can tell them to grow,' is a very wide leap. Between these two extreme points there lie every variety of soil and situation, with a yet greater variety of class and occupation from which the gardeners are drawn. The Gardening Instructor's work has two sides. Where required, he gives addresses on various subjects connected with horticulture. Whenever he can, he visits gardens and allotments when the cultivators are at work, to aid them by practical suggestions, and to induce questions which he is glad to answer. With regard to addresses, sixty-one in all have been given, the subjects being as follow:—1, Soils; 2, Seeds; 3, Green Crops; 4,

Small Fruits; 5, Potato Culture, with a view to the prevention of disease; 6, Large Fruits; 7, Root Crops, other than Potato; 8, Insect Pests; 9, Planting and Pruning Roses. The average attendance at each has been thirty-seven. In addition, several conversational meetings have been held at various places; but it appears that an address on a given subject, followed by discussion thereof, is most popular and most likely to be useful. It may here be added that, with the present season, the Council of the Union have issued abstracts of each lecture given by Mr. UDALE; and every person present at a lecture receives a printed copy of its substance, as an aid to memory and a help to practical knowledge. Mr. UDALE has paid 343 visits to cottage gardens, 155 to fields of allotments (in which, on an average, there may be twenty separate allotments), and 197 to market gardens, fruit farms, orchards, and other gardens. These visits represents a distance covered, by walking alone, of about 2000 miles. In value they may be already measured by improved crops in many parts; by more intelligent cultivation; and by the welcome which is given by an increasing number of gardeners to the Gardening Instructor. A few special points touched upon in Mr. UDALE's Reports are given here:—(1) He observes that men of all classes have given him a hearty welcome, and that he is indebted to many market gardeners and owners of large gardens for opportunities of increasing his own experience. He finds that those who know most are most willing to learn more. (2) He finds the desire for addresses and object lessons to be on the increase. (3) Deeper digging of land is becoming more common, to the great advantage of the cultivator. (4) He commends the excellence of many cottage gardens at Pedmore, and of allotments at Clent and Droitwich; and draws attention to the system adopted by the Hagley and District Gardening Association, and to that of the frequent exhibition of produce at the Aston Fields Club. (5) He observes that in many parts of the county, among both cottagers and market gardeners, there is room for much improvement in fruit culture, and especially as regards insect pests. (6) In August he finds more preparation being made in planting of vegetables for winter and spring consumption. (7) In September, the result of a year's study of the allotments in the county is given. He expresses a strong opinion of their value, where the position is convenient, the land of average quality, and the rent a fair one. With a few exceptions, he considers that the Worcestershire allotments are not let at unreasonable rents; and he expects to see a growing demand for $\frac{1}{4}$ acre and acre lots. It should be stated that the Council are anxious that farmers and market gardeners should make full use of the trained knowledge as to orchards and fruit trees which Mr. UDALE possesses. In conclusion, it may be added that, since September, Institutions have been affiliated to the Union in six fresh districts; and there seems every prospect that, as the solid benefits of the Gardening Instruction Scheme are better known, a demand to participate in them will arise from all parts of the county."

H. T. STANTON.—The death, in his seventieth year, of this eminent entomologist is announced. Those who were privileged to know him, will recognise that not only one of the most learned, but one of the kindest and gentlest of scientific men, has passed away. For some years Mr. STANTON acted as Secretary to the Linnean Society.

VINE CULTURE AT DUFFEL AND WAVRE STE. CATHERINE.—Belgian Vine culture has been heavily burdened by the new French customs duty, which taxes Belgian Grapes at 1 fr. 50c. the kilo. (about 7d. per lb.). The well-known establishments of Hoeylaert, near Brussels, are not the only sufferers from this. For many years numerous vineries have been built at Duffel and Wavre Ste. Catherine, both of which localities send freight by the Antwerp and Brussels Railway. We recently visited the principal Vine-grower of these places, M. LOUIS SELS, who frequently shows fruit at our exhibitions. His

grounds at Duffel comprise thirty-four houses at least, 162 feet long by from 19 to 22 feet wide, and devoted to Vines, Peaches, and Strawberries. The firm turns out annually 10,000 pot Vines and 20,000 to 25,000 pot Strawberries; last year the total rose to 31,000. There are 120 sorts of Vines, of which the following are the best:—Alphonse Lavallée (black), Black Alicante, Bowwood Muscat (white), Buckland Sweetwater (white), Bruxelloise (black), Chavouste (white), Dr. Robert Hogg (white), Frankenthal, Forster's White Seedling, Gros Colmar, Madresfield Court, Black Muscat, Marquise d'Hasting (white), and Morillon d'Espagne. Among the novelties are Dodrelabi (black), Parc de Versailles (white), San Antonio (black), and Wilmot's Hambro (dark red, shading into clear blue). The Grapes are chiefly sent to Antwerp and Brussels. The Grape-forcing houses are warmed by a series of moveable pipes, which can be transferred from one house to another as they are required. This system is an invention of M. SCHMIDT, which is now on trial in Belgium. Tomatoes are also grown here. Against the disease Bordeaux Mixture has been successfully tried. There is also a large house for forced Roses; it will be only possible to compete with the supplies from Nice if the Belgian blooms are ready at the New Year. At Wavre Ste. Catherine there are thirty-one houses, at least 99 feet long by 23 feet wide. There is also one 474 feet long. Only the best sorts of Grapes are grown here, Frankenthal is most highly thought of. There are two forty-horse-power engines, circulating water for watering, and hot water and steam for warming all the houses. The vineries are ranged in rows about 32 feet apart; this causes considerable waste of heat and time. Before M. SELS had charge of this establishment, each house was warmed by four stoves; the flues were of brick. Now the most modern improvements have been substituted in both the watering and heating systems. All the houses are in full working order. Besides these two establishments, M. SELS has three or four others at Duffel, comprising about forty houses, so that altogether the vineries at Duffel and Wavre Ste. Catherine are contained in a hundred houses covering 28,000 sq. mètres, and with a total glass area of 40,000 sq. mètres (1 sq. mètre = 10.764299 sq. feet.) *Ch. de B.*

SMITHFIELD CLUB CATTLE SHOW.—At the annual Cattle Show held this week in the Agricultural Hall, Islington, the leading seedsmen were as usual represented by large stands of well-grown roots and vegetables, and samples of seeds of grasses, &c. Particularly noticeable were the exhibits of Messrs. Sutton & Co., Reading; E. Webb & Son, Stourbridge; Messrs. Carter & Co., Holborn; Messrs. Dickson & Co., Chester; Messrs. Harrison & Son, Leicester; The Agricultural and Horticultural Association, Limited; Messrs. Jarman & Co., Chard, Somerset; and Mr. Walter Parsons, Reading. Some fruits were shown by Messrs. J. Cheal & Sons, Crawley; and cider Apples, &c., by Gaymer & Co., Barham, Attleborough.

TREE PLANTING IN IRELAND.—The Irish Land Commission, encouraged by the success of their operations in this direction last year on the west coast of Ireland, have been induced to extend the woods in the exposed district, and are importing large quantities of forest trees from the principal nurseries of the country; and Messrs. LITTLE & BALLANTYNE of Carlisle, among others, have been requested to furnish a great number.

PRESTON AND FULWOOD HORTICULTURAL SOCIETY.—At the monthly meeting of this Society, which was held at the "Old Legs of Man," in Preston, on Saturday night, the discussion on the Culture of the Tomato was resumed. Mr. HATHAWAY, gardener to Lord LATHAM, who had introduced the subject, subsequently answered a great number of questions put to him by cottagers, amateurs, and nurserymen. A cordial vote of thanks was accorded to him. There was the usual exhibition of plants, &c., Chrysanthemums forming the larger part of the display. It is suggested by several leading members

of the Society that the funds should be utilised, as far as possible, in securing the engagement of a Professor of Botany to give scientific lectures to members. If this is done, it is expected a grant will be received from the Lancashire County Council towards the cost.

PLANT PORTRAITS.

ÆRIDES LAWRENCEÆ var. *AMESIANA*, *Xenia Orchidacea*, t. 252.

ÆRIDES ORTGIESIANUM, *Xenia Orchidacea*, t. 253.

ANTHURIUM ANDREANUM var. *WAMBEKEANUM*, *Illustration Horticole*, t. 163. A variety with a pure white spathe and a yellow spadix; apparently a very desirable form.

CANNA MADAME JOANNI SALLIER, *Revue Horticole*, Dec. 1.

CATASETUM LIECHTENSTEINII, *Xenia Orchidacea*, t. 253.

COLEUS, new seedling varieties—1, Dr. Alphonse Willems, mottled crimson; 2, Paul Rodigas, rich crimson, with white midrib; 3, Mdlle. Alice Vanden Berghe, green, with purplish-brown margin; 4, Mdlle. Yvonne Linden, white, speckled with green. *Illustration Horticole*, t. 164.

CELOGYNE LACTEA, *Orchid Album*, t. 459.

CELOGYNE MICHOLIZIANA, *Xenia Orchidacea*, t. 256.

DENDROBIUM COMPRESSUM, *Xenia Orchidacea*, t. 251.

DENDROBIUM CRASSINODE var. *ALBA*, see *Gardeners' Chronicle*, iv. (1875), p. 683; a beautiful form with a yellow tip, but otherwise pure white. *Orchid Album*, t. 458.

DENDROBIUM LISTERGLOSUM, *Xenia Orchidacea*, t. 260.

DIPLACUS GLUTINOSUS, *Bull. Soc. Tosc. d'Ortic.*, November.

LACHENALIA REFLEXA AUREA and *L. REGELIANA*, *Wiener Illustrierte Garten Zeitung*, November.

LELIA REICHENBACHIANA, *Xenia Orchidacea*, t. 254.

LISSOCHILUS GIGANTEUS, a magnificent tropical African Orchid, shown at the Temple Show in 1888 by Sir Trevor Lawrence, and now figured from a plant bloomed by the Duc de Massa, Château de Francville, by Lozarches, France. See also *Gardeners' Chronicle*, 1888, iii., p. 616, with figure. *Orchid Album*, t. 457.

OCTOMERIA SEEGERIANA, *Xenia Orchidacea*, t. 257.

ODONTOGLOSSUM CIRROSUM, *Gartenflora*, t. 1383.

ODONTOGLOSSUM TRIUMPHANS AUREUM, *Orchid Album*, t. 460. Flower-segments banded and blotched with pale yellow.

PAPHINIA GRANDIS, *Xenia Orchidacea*, t. 255.

PHOLIDOTA LAUCHEANA, *Xenia Orchidacea*, t. 259.

PLEUROTHALLIS CRYPTOCERAS, *Xenia Orchidacea*, t. 257.

PLEUROTHALLIS PACHYGLOSSA, *Xenia Orchidacea*, t. 259.

RHODODENDRON KEWENSE X. A cross between *R. Aucklandi* and *R. Hookeri*, raised at Kew in 1874. Flower white, flushed with rose. A profuse bloomer, having all the charms of *R. Aucklandi*, and the freedom of flowering of *R. ponticum*. *Garden*, November 26.

REPEROCHARIS PLATTANTHERA BENNETTIANA, *URBANIANA*, *ALCICORNIS*, *Xenia Orchidacea*, t. 258.

SACCOLABIUM GEMMATUM, *Xenia Orchidacea*, t. 260.

UROPETALUM BECCABEANUM, *Gartenflora*, p. 610.

ZEPHYRANTHES MESOCHLOA, *Gartenflora*, p. 610.

NOTICES OF BOOKS.

AGRICULTURAL GRASSES.

THE Department of Agriculture, Division of Botany, of the Washington Experimental Station, has just issued (October 20, 1892) the first part of a most valuable work, by Dr. Geo. Vasey, which includes plates and descriptions of the Grasses of California, Oregon, Washington, and the north-western coast, including Alaska.

The author in his introduction states, that the grasses which are known to grow on the Pacific slope of the United States, including Alaska, number not far from 200 species. These are all specifically distinct from the grasses growing east of

the Mississippi River, and also mainly distinct from the grasses of the plains and of the desert, except in that part of California which partakes of the desert flora.

A considerable number of the grasses of the mountain regions of California, Oregon, and Washington reappear in the mountains of Idaho, Montana, and the interior Rockies. The interior of California is a dry region, verging in the extreme south into the desert country, and is deficient in grasses, especially of those species which form a continuous turf. In the present issue are figured and described mainly those grasses which are most conspicuous in size and apparent utility.

Nearly all are thus illustrated for the first time; consequently, the work will be of great value not only to botanical students, but to all those persons interested in agriculture and in the raising of domestic farm animals.

HANDBOOK OF THE IRIDÆ. By J. G. Baker, F.R.S., Keeper of the Herbarium, Royal Gardens, Kew. (Bell & Sons.)

This, we are told, is the last of a series of botanical handbooks on which the author has been engaged since coming to Kew in 1866. At that time he found that the "groups of plants that enter largely into horticulture that most wanted working at were the vascular Cryptogams and the petaloid Monocotyledons." Accordingly, Mr. Baker first turned his attention to the Ferns, then to the Liliaceæ, of which a monograph is contained in the *Journal of the Linnean Society*, vols. xi. to xviii., to the Amaryllidæ, the Bromeliaceæ, and now to the Iridæ. What all this means in the way of careful research, accurate comparison, and patient toil none can appreciate, save those who have undertaken similar tasks. When done it is not work which attracts attention or secures credit for the author from the public, still less any more substantial reward. On the other hand, he has the satisfaction of knowing that he has done a good work which will last for years, and that successive generations of botanists and horticulturists must turn to his pages and profit by them, long after the most popular novel of the day has been consigned to oblivion. Mr. Baker's object has, from the first, been eminently practical. He saw at once, that what was wanted was a general guide, in which the salient and prominent features of each group should be so presented as to be readily recognised. These landmarks established, the further sifting is a mere matter of detail. When once the map is constructed showing the main highways and turning points, the smaller streets and alleys can readily be filled in by the patient student. We may, therefore, look on Mr. Baker as a surveyor or map-maker, and value his labours accordingly. Many of Mr. Baker's forecasts have been published in our own columns, so that we are in a position to know what services he has rendered to botany and horticulture. In the present volume 161 species of Iris are described, 66 species of Crocus, and 132 species of Gladiolus. The other genera, of which there are fifty-four, have a smaller number of species. With his contributions to the *Flora Brasiliensis*, his numerous papers on the flora of Madagascar, his *Flora of Mauritius*, it will be seen that Mr. Baker's labours have by no means been few or unimportant, and though he speaks of the present as the last of a series, we may yet hope to give that statement a limited interpretation only, and to hope that his work on the *Monocotyledons of South Africa* in continuation of Harvey and Sander's *Flora Capensis*, may soon see the light.

THE GREAT WORLD'S FARM. By Selina Gaye, with a Preface by G. S. Boulger, F.L.S., &c. (Seeley & Co., London.)

This book gives an "account of Nature's crops," and of the various forces which aid in their establishment and growth. The "crops" are understood to comprehend all vegetables ranging from lichens to forest trees, and the articles chosen for description are such as are especially beautiful or curious. The

style of the book is so simple, as to render it as suitable for a child as for an adult. There are some exceedingly pretty illustrations, which add much to its attractive appearance. It is well printed, and neatly bound.

AN INTRODUCTION TO THE STUDY OF BOTANY.

By Arthur Dendy, D.Sc., F.L.S., and A. H. S. Lucas, M.A., &c. (Melville, Mullen & Slade, Melbourne and London.)

Unlike many other elementary books on botany, the volume before us treats of the microscopical structure of plants, as well as of their development and classification. Especial attention is paid to such species as the Australian student is most likely to meet with, since for him the book is primarily intended; the authors beginning with the study of *Protococcus* and *Bacteria*, and leading gradually on to the more complicated monocotyledons and dicotyledons. There are a full index (of terms, &c.), and plentiful illustrations. It is a book of convenient size, and pleasantly written, and is altogether one of the best books of its class that we have seen.

ANIMALS' RIGHTS. By Henry S. Salt. (George Bell & Sons, London and New York.)

This book might with equal propriety have been called "Animals' Wrongs," since it is chiefly a tirade against the injustice done to dumb creatures by "silly women, half-witted sportsmen, and half-enlightened scientists." The author would anticipate the millennium; until then, few can or will be so wise as to refrain altogether from profiting by the labours and lives of animals lower in the scale than man. In the meantime we must use but not abuse our privileges.

NEW VEGETARIAN DISHES. By Mrs. Bowdich. (George Bell & Sons, London and New York.)

We have here a collection of about 200 recipes, some of which will be acceptable to both vegetarians and meat-eaters. The latter are, however, hardly likely to be converted to the writer's principles by dainties such as "Brussels Sprouts' Sausages," "Cabbage Salad," or "Tasty Greens."

THE LADY FERN (*ATHYRIUM FILIX-FEMINA*).

THE Lady Fern, which is at once one of our commonest, and at the same time one of our most beautiful native Ferns, is a peculiar Fern in many ways, apart from its external specific features. In the first place, though one of the most variable of plants, and by no means dainty in its requirements, since if only its roots can be supplied with sufficient moisture, it grows in the most diverse situations, it is a member of a very small genus, which presents but little difference in form in the species of which it consists. This is a curious fact when we consider the immense diversity of type into which one familiar species has sported under quite natural conditions, which would lead us to expect that the genus itself, in its process of adaptation to environments all over the world, would have split up into numerous very distinct specific forms. If we take the genus *Asplenium*, to which some botanists consider the Lady Fern allied, we find precisely the converse case. Here the species, which range through an infinity of distinct types, from the simple grass-like *A. septentrionale*, to the huge *A. nidus avis* or Bird's-nest Fern, though comparatively constant, sporting very little indeed, are very numerous, no less than ten species being indigenous to Great Britain, while about 200 figure in Smith's *British and Exotic Ferns*, a list which has certainly been swelled considerably since its publication.

A second peculiar feature of the Lady Fern is its indefinite generic character, so far as regards its fructification, which in most of the plants approximates in appearance to the lineal sori of the *Asplenium*, in which genus it is on that account placed by some botanists. The sori, however, as well as the *indusia*, or spore covers, are always short, and

more or less curved, *à la* horseshoe, so that in extreme cases the indusium, barring its ragged edge, resembles superficially the kidney-shaped one of the *Lastreas*, or Buckler Fern. One, to the writer's mind, indubitable member of the family, the Mountain Lady Fern, or *Polypodium alpestre*, has no indusium at all, so that, despite its obvious affinities to another species, it is on this account assigned by most botanists to the *Polypodium* family.

Certain abnormal forms, however, which are characterised by extra leafy development, such as the Horsfall plumosum, found in Yorkshire, bear also round and perfectly nonindusiate sori, and other forms have the indusium so ragged and imperfect that sharp eyes are required to detect its presence at

Thus would be recognised its one point of resemblance to another genus, while not on that account ignoring a dozen equally obvious ones which betray its true relationship. Another, and perhaps the most salient feature of the species, is its extreme variability. So great is this, that in many places it is difficult to find two plants of precisely the same character. The accepted and predominant normal type has large fronds of lanceolate outline, bearing long, gradually tapering pinnate pinnæ, the edges of the pinnules, or subdivisions, being more or less serrate, or saw-toothed. The fronds spring from a central caudex, or crown, somewhat erectly and in a circle, *à la* shuttlecock. A very superficial examination, however, of a bank or ditch lined with this

Apart from the minor variations described, a veritable host of most extraordinary departures from the average normal type have been found growing wild in various parts of Great Britain, and among these eccentric forms are several, which are so far quite peculiar to this family, extraordinary as are the sports which have been found in most of the other species. A. f.-f. *Frizellæ*, found in Ireland, is one of these remarkable aberrations, since instead of a broad, bipinnate, feathery frond of lanceolate outline, the fronds are mere midribs, with nearly round, dense knobs placed alternately on each side, and terminating abruptly without any gradation whatever. A greater transformation can hardly be conceived. Another form, A. f.-f. *Pritchardii*, is an



FIG. 110.—RHODODENDRON RYLEI: FLOWERS CRIMSON. (SEE P. 608)

all. Hence, we have a species, which in its general characters is one of the easiest to recognise from all others, confused with two widely-different genera with which it has no affinity whatever. This is a glaring instance of the incongruities which unavoidably step in when a hard and fast classification is attempted to be based on any one feature. Ferns are classified mainly by the peculiarities of their fructification, and in the large majority of cases this is found to be the best line to go upon, but where Nature ignores this line, and a plant appears with an intermediate and uncertain specific character of this sort, its other characters, if marked enough, should determine its placement, and where it apes the one feature of the *Polypody* fructification exactly, but still sticks to a dozen other *Athyrium* characters, surely it does not cease to be an *Athyrium*, but might fitly be named specifically *A. nudisorum* or *polypodioides*.

Fern, will show divergencies of all sorts, some being much finer cut, some more erect, and some more decumbent. A frequent form is erratic in its subdivisions. Some form dense clumps by constant subdivision of the crowns. They vary again in texture, and in fact it is difficult, as we have indicated, to find any feature which is constantly alike. The fructification varies, as we have seen, from well-developed indusia to none at all. If, however, we turn to one of its more frequent companions, the male Fern (*Lastrea filix-mas*), we may find hundreds and thousands of plants in which even the most critical eye could detect no dissimilarity. It is, indeed, the same with most of the other genera; there is a certain well-defined type, which, though varying a little in different districts, is sufficiently constant generally for a standard description to be valid. This variability in the *Athyrium*, however, by no means ends here.

approach to this, the pinnæ being shortened and multiplied so that they are in little radiating bunches along the frond, which also tapers gradually. A kindred form, A. f.-f. *Fieldiæ*, is intermediate between these two, the bunched pinnæ being shorter and the frond abruptly terminated. The radiating form of pinnæ, which, from the opposite pairs forming crosses is termed cruciate variation, is developed to the greatest perfection in that extraordinary Fern known as A. f.-f. *Victoria*, found in Scotland. In this the fronds are long and very slender, and bear a long, much-divided tassel at their extremities; the pinnæ, instead of being single, are in pairs, and set on at nearly right angles to each other. They also are very slender, and bear tassels smaller but of like character to those at frond tips; finally, the ultimate small divisions are also set on in pairs at the same angle, so that the whole frond consists of deli-

cately cut crosses, built up of smaller ones. It can scarcely be credited that such a marvel of variation, and so beautiful a form, should have remained unmoved for two years after its first discovery by the roadside; yet such was the case.

The spores of this variety, which are produced in abundance (we gathered, on a moderate computation, eighteen millions from six withered fronds), yield plants fairly true to type, but almost invariably coarser, and of smaller growth, no frond exceeding about 2 feet, while the division of the original frond in our possession grows to about 3½ feet. No Fern in the world has yet been found to rival this in complex variation, i.e., such a combination of delicate tasselling, with cruciation to the utmost. In the simpler forms of tasselling or crestring, the species has afforded every imaginable type, from the really marvellous *A. f.-f. acrocladon*, found on a Yorkshire moor, in which the midrib of the frond divides and divides until a ball of foliage is produced instead of a feather, to some of the simpler multiceps or furcate varieties, where all the terminals are merely forked. In some of the forms, such as *pericristatum*, *Cousens*, even the pinnules are delicately crested, and in a *pericristate* form of *setigerum* raised by Col. Jones, these are fanned out broadly, and fringed with innumerable bristles. Then, in another direction, there are the small and densely-congested varieties of *A. f.-f. stipitatum* *Grantæ* and *A. f.-f. Edwardsii*, the latter a veritable gem of vegetation, and a type of the dwarf varieties which would make charming collections for limited spaces in many a shady nook and corner where nothing else will thrive. The delicately crispate form known as *Vernoniæ*, and its crested offspring, constitute another section, and did space permit, a score of other types might be mentioned and described. We must not omit to mention that unique Fern, *A. f.-f. kalothrix*, or beautiful hair, in which the fronds of normal outline are built up of the most delicate glass-like, silky filaments. No description can do it justice; it must be seen to be appreciated. Of these, it is noteworthy that the great majority, if not all, of the typical forms have been found wild, and wide as the departure has been from the normal type in most of them, intermediate forms are conspicuous by their absence, the "sport" wonderful as it seems, having been arrived at by one jump, as it were. In our own hunting experience we have, it is true, found some slight evidence of transitional variation in the shape of partially-affected plants or sportive offsets attached to nearly normal parents; and in one of our finds in another genus (*Lastrea montana*), which was exhibited at Westminster Drill Hall last year, a distinct and gradual change of varietal type was shown in progress. These cases, however, are very rare; and, after all, the wonder is not less that a plant should gradually assume, as it were, a different architectural plan, than that a spore from a normal parent should have that structural alteration incorporated with it, and so yield at once a resultant perfect variety. Under artificial conditions, it is a well-recognised fact that spores and seeds gradually have their stability of type subtly affected, so that in a few generations the liability to "sport" in their progeny is largely increased. To this fact we owe a great number of our countless floral forms, and we find the same thing to obtain in Ferns; the spores for several generations yielding true progeny, then a break occurs, and an advance in the type is obtained in the direction of finer cutting or larger crestring, and so on. This stage reached, the progeny of the secondary sport will probably be very diverse, the parental type being altogether absent or in the minority. In one case of this sort, a secondary plumose sport of a Lady Fern (*A. f.-f. plumosum elegans*, *Parsons*, raised from the *Axminster plumosum*) gave only two true plants, all the rest being quite different, and heavily crested, a feature entirely absent in the parental form. Spores of one of the best of this crested batch gave a predominance of non-crested plants of all degrees of delicacy of cutting, one of which is actually five times divided, eclipsing even *Todea superba* in foliose dissection. The first form of variation we

described, *A. f.-f. Frizellæ*, acted similarly shortly after it came into cultivation, one nurseryman filling a house with divergent forms, and exhausting the dictionary in his endeavours to christen them all. In such cases it is obvious that careful selection alone can obviate the risk of a surfeit. As well might our *Auricula* or *Dahlia* growers stage all their seedlings, and dignify the worst of them with names as ugly and as long. Of late years, in the hands of Col. Jones, Mr. Fox, Mr. E. J. Lowe, and others, hybridisation or crossing has been found available for combining distinct types, which widens the horizon to infinity, and makes our last remark still more obligatory upon cultivators.

A word as to culture. As we have said, this Fern is by no means dainty in its requirements, it will consequently thrive in the commonest garden soil provided it does not get dry at the roots. Its favourite natural habitat is in very moist—even boggy—situations, and here, if sheltered from the wind by surrounding trees, it will grow 4 feet and more high, and attain its finest development. As regards outdoor culture, much depends on the locality; in our humid western counties, it will take care of itself almost anywhere—but in the dried eastern ones, it needs selected secluded nooks. The varieties in the large majority of cases require the protection of glass to enable their more delicate characteristics to appear. A beautiful form exposed to wind, heavy rain, and it may be scorching sun, would probably become a stunted unsightly specimen, while given a post of honour in a cool greenhouse, it would amply justify its position. It must not be coddled, a warm house in winter is death to it, depriving it of rest, and stimulating premature growth; the summer will see it an exhausted wreck and prey to every kind of vermin. As it is deciduous, the best plan when it dies down in autumn, is to plunge the pots in some damp corner. Frosts will not damage them, and in March they can be reinstated, and will speedily form finer and finer specimens. *Chas. T. Druery, Fernholme, Forest Gate.*

SELECT DECORATIVE FOLIAGE PLANTS.

AMONG the great variety of variegated and other beautiful foliage plants such a diversity of colour exists, that a bright and attractive group can be made without the aid of flowers at all. I prefer to exclude flowers from a group where plenty of bright-coloured foliage can be had, for, I think, that flowers (especially coloured) do not harmonise with *Crotons*, *Dracænas*, &c. In groups of flowering plants, green foliage, if used liberally, has a pretty group, or if white flowers are not plentiful, some white variegated foliage, such as *Cyperus alternifolius* variegata, or *Eulalia japonica* variegata may be used, and *Panicum variegatum* makes a nice edging.

The craze for large specimen plants has nearly died out, and it is hardly necessary to say that young healthy well-grown plants are in every way preferable to the over-grown plants one used to see carted from one show to another, year after year, and which are of no value for any other kind of decoration.

Most foliage plants may be propagated with little trouble where ordinary accommodation exists, but, notwithstanding this, I am afraid that in many establishments due attention is not paid to the necessity of providing young stock, and old plants are kept lingering on until they become quite unsightly. This particularly applies to *Crotons* and *Dracænas*. It is, perhaps, owing to indifferent examples which are often seen, that *Crotons* have not been so popular as they deserve to be. However, foliage plants generally are coming more and more into use, and even sprays of cut foliage are in demand, especially good variegated kinds.

In this paper on useful foliage plants I shall give *Crotons* the first place. From the great number of varieties now grown it is difficult to make a selection without at the same time making it too extensive,

especially as under different conditions the sorts vary considerably. For table decorations the selection should be confined to the narrow-leaved sorts, but for grouping, or for places where they are only seen at a distance, the larger-leaved sorts will be found more effective. Of the narrow-leaved sorts, *Countess* is one of the most useful, the long drooping leaves are beautifully marbled and spotted with golden yellow; it is a free-growing sort, and may always be relied upon to keep in good colour. *Superba* closely resembles the above-named, and when well done, it is even more elegant, but it is not quite so easy to manage. *Chelsoni* is a very elegant little *Croton*, but too delicate for ordinary work. *Aigburthensis*, of slender habit, with long, narrow, recurved leaves, marked with linear band and spots of pale yellow. *Ruberrimus* is somewhat after the well-known *majesticus*, but more compact in growth; the narrow leaves are slightly twisted, and change to a deep almost crimson hue. *Flambeau* is another, in which the deep yellow variegation changes to a bright red shade. *Mrs. Swan* is a distinct variety: the stems and leaf-stalks are rosy-red, the rather narrow recurved leaves have a linear band of clear yellow; this variety makes a very pretty table-plant. *Massangeana*, prettily marbled leaves of pale yellow, shaded with red; leaf-stalks and midrib very brightly coloured. Of the larger-leaved sorts, *Thomsoni* is a good one; the leaves are three-lobed, pale green, with a broad linear marking of clear yellow. *Mortefontaineensis* has leaves beautifully veined with yellow, changing to bright red; although a little stiff in habit, it is a most desirable variety, on account of its colouring so freely. *Etna* is another very bright variety. *Comte de Germiny*, large ovate leaves, veined and blotched with bronzy yellow, changing to red. *Flamingo* has medium-sized ovate leaves, broadly blotched with yellow, changing to an almost crimson hue. *Musaicus*, medium-sized leaves, veined and blotched with yellow, shaded with red. *Bergmanni* has large ovate leaves, with broad linear band, and veined with creamy-white, and is very effective. *Gordoni*, leaves broad at the base, narrowing off almost to a point, beautifully blotched with red; even in quite a young state this is very bright. *Warreni*, has long, pendulous, twisted leaves blotched with yellow and shaded with red. *Gloriosus* is a good companion to this; it has leaves of pale green, blotched and veined with creamy-white. I had intended to confine myself to a dozen sorts, but find I have already considerably exceeded that number, and still there are some I should like to include.

In the culture of *Crotons*, it is necessary to start with well-coloured tops for propagating from. Cuttings may be taken at almost any season of the year, but the best time is during the winter, while the plants are in a restful state. Good-sized tops may be taken; they should be put in singly in small pots, using light sandy compost, and a little extra sand at the base of the cuttings. They require a good brisk bottom-heat, and to be kept quite close. If plunged in moist cocoa-nut fibre refuse, they will not require much water for the first few days, and, with a little care, they will root without losing a leaf. In growing the plants on, it is necessary that they should be well exposed to the light, have a higher temperature than is given for most stove plants, and plenty of atmospheric moisture. This is essential both to encourage growth, and to keep down the red-spider and thrips, to which the *Croton* is especially liable?

(To be continued.)

HOME CORRESPONDENCE.

EARLY PEAS.—Your correspondent, "W. A. C.," recommends the spring, or rather, winter sowing of Peas instead of autumn, and I fully agree with what he writes on this subject, having myself tried, and seen others try, both methods for many years past in gardens in Wiltshire, Surrey, Middlesex, and Hertfordshire, and I have noticed miserable failures when the plan of winter sowing has been

adopted, and at the best nothing gained in point of time. I have for many years ceased to depend upon either one or the other, and my practice now is to sow for the first crop on turves about 2½ inches wide, and the same in depth, cutting a V cleft about 1 inch deep in each piece of turf, which is usually cut about 1 foot long. In these clefts I sow the Peas thickly, and press some light soil or the potting-bench siftings over the seed. The turves are placed upon boards, and carried to a vinery or any cool-house about February 1. The Peas soon come up, and when they are duly hardened off, planted out just as they are when about 3 inches high, care being taken to press the soil about them firmly. In the generality of years we begin to gather from these plants about June 8 to 15. Our soil is stiff and cold. If sharp frosts threaten, or the wind is very sharp just after planting the Peas, the rows are stuck at once, and a few bits of Yew put in between the Pea-sticks, but not so as to unduly shade the Peas. I sow the same kind of Peas outdoors on the same date that I sow on the turves, which sowing is about three weeks later than those. To protect from mice and birds, I wet the Peas before sowing them, and roll them in red-lead, so that it adheres to them. This year the first dish was gathered on June 8, and with fine varieties we continued to pick Peas daily till the end of the month of October. The best are Dickson's 1st, Early Sunrise, Champion of England for main crop; Ne plus Ultra and Veitch's Perfection for late use. I know on some soils and in many situations this would be impossible. I may add that our soil is well cultivated, and the Peas are grown in the alleys between the beds of Potatoes of the previous year, and stable-manure is put into the soil, short grass from the lawns is put into the alleys upon which the Peas are sown, and never two years in succession. *D. Davis.*

ROOTWORK.—My experience of rooteries is not just identical with G. F. Wilson's as recently related in the *Gardeners' Chronicle* of November 12, and other gardening journals, in fact it is quite opposed to their use in the country garden, although in the half-wild garden or home plantation a rootery might be tolerated—and perhaps, in a town garden. I like all of our existing wild creatures in field and woodland, and when their depredations are not serious, or these are counter-balanced by the good they do in destroying worse foes, I would always preserve them. The rootery forms a safe retreat for the lively bunny, which I am quite safe in putting down as a "garden pest" of the worst kind, whose depredations in flower and kitchen-garden are too well known to need any description from me. The equally mischievous rat has a partiality for the rootery as a nice secure place of abode, for he there may defy ferrets, dogs, and the spadesman, issuing forth at night in search of fruit in frames, pits, on the wall, in the vinery or the fruit-room, or of Potatoes, Carrots, and what-not. The soil may be impacted firmly enough about the roots, but enticing hiding-places are always to be found by the two kinds of animals mentioned, and the continual decay of the wood affords, as time goes on, still more of them. Knowing all this, would an employer or a gardener be acting wisely in setting up a rootery in a garden? The same objection to a rootery holds good of rock-work when this is badly made, but the evils are seldom so serious, and may be overcome by filling in the likelier crevices and inlets to the interior of the same with stones, &c. *A. Y. E.*

NEW VARIETIES OF CULINARY PEAS.—It is somewhat surprising that so few state their experience of new varieties of Peas and other vegetables. Is this because those who grow them are afraid that others will surpass them in produce at shows, or is it because so few try them? I must confess that I used to be rather sceptical in trying any new kind until I had seen it grown by others, but of late I have taken to giving most of the new varieties a trial on their being sent out, weeding out those that are worthless and retaining only those of sterling good quality. New varieties of Peas with me have a particular charm, for I try nearly all kinds that are sent out each season. Last season the following had a place on my list:—Superabundance, a packet of this was procured and sown on April 9, in a drill 22 yards long, a tremendous length one would say for so few Peas, but I always sow thinly and cultivate the ground well. In due time the young plants appeared above ground, stakes were put to them about 4 feet high, the haulm soon grew to the top of the sticks, and the row appeared as though there had been at least a quart of seed sown in it. The pods were so abundant, and lasted such a long time in perfection, that

no less than 5 bushels were gathered; the pods were of medium size, deep green in colour, well filled with dark green Peas, which, when cooked, were of excellent flavour. This I considered a good all-round Pea, and one worth growing in every garden. Fame was also grown, but with me there were almost as many varieties as there were Peas in the packet, so I discarded that variety after the first trial. Next came Ambassador, which was a fairly good variety, but which grew rather too tall for the number of pods produced; the pods were a good size, it is true, but there were so few of them, that hunting would be a more appropriate name for gathering than picking, so few were the pods. Roger Cutler was another variety grown, and this, like Fame, had too many varieties in it for me to give it another trial. The Stanley Pea is a dwarf, free-fruited kind, with no one particular good quality. Empress of India was a good second early, grew about 4 feet high, the pods being of medium size, well filled, and of fine flavour; for a second early this is one of the best that I have yet tried. Exhibition also had a trial; the fine, dark, well-filled pods of this variety could not fail to attract the attention of all admirers of good Peas—the growth is robust and free in every way. English Wonder was sown early in the season by the side of Exonian and A. I, but was far inferior to both kinds. Taking a review of the lot thus tried, I intend to retain Superabundance, Empress of India, and Exhibition; all the other kinds will be discarded. *H. C. Prinsep, Buxted Park.*

YELLOW HYBRID OF CHRYSANTHEMUM MAXIMUM.—In some notes on the variation of flowers in cultivation lately written for the Royal Horticultural Society, I remarked that in a garden in which accidental seedlings are generally allowed to flower where they come up, spontaneous hybrids between distinct species are of frequent occurrence. I have rarely, however, observed hybrids between members of different genera. At present I cannot recollect one which has come in my garden, except between *Chionodoxa Lucilia* and *Scilla bifolia*, until this autumn. But last September, noticing amongst some plants of *Chrysanthemum maximum* a seedling with abnormal leaves and habit, I potted it to flower in a greenhouse. It has now produced a yellow flower, new to me, which I can refer to nothing but a cross between *C. maximum* and *Anthemis tinctoria*, as these two plants grow together in the same quarters. *C. Wolly Dod, Edge Hall, Malpas.*

GARDENERS' ORPHAN FUND.—Amongst the many schemes to raise money in aid of this charity, there is one which seems peculiarly applicable at the Christmas season. Christmas has been appropriately called the Children's Feast. Let those, then, of the craft who can do so, think at this particular time of the children who are now receiving the aid of this Institution, and of the many more whose claims are none the less pressing, but whom the Fund, from want of means, cannot assist, and send in their Christmas-boxes, large or small, to cheer the lot and practically alleviate the wants and sufferings of these orphaned ones. The Christmas festivities will not be shorn one whit of their joys by such practical sympathy—rather will they be ennobled in the thought that the destitute little ones have not been forgotten. *J. B.*

ARTIFICIAL MANURES.—In a note on the Kent County Council on p. 675 of the *Gardeners' Chronicle*, reference is made to the difficulties which gardeners have to contend with in purchasing artificial manures. The variation in the quality of these manures is, I suppose, the principal grievance, and I think it is quite time inspectors were appointed by the government to examine all artificial manures and give a certificate of quality and composition as is done in the United States of America. In some parts of the Southern States artificial manures are used in very large quantities, as the soil is little better than pure sand; but there, if the cultivator does not get what he requires, it is his own fault; every sack or barrel of manure, whether a mixture or not, must have a label attached to it from the government inspector before it is sold, or the vendor is liable to a penalty. The label states the percentage of the various plant foods which the manure contains; and the endless mixtures are also graded by the inspector according to the solubility of the materials used, and their value to the cultivator. For instance, nitrogen derived from blood, would be considered far superior to that derived from horn-shavings, although the percentage might be exactly the same. The value of the mixtures offered for sale is also published in a list, and is calculated according to the prices per

unit of the chemical properties at New York; thus the purchaser is protected against overcharge. If the technical instruction now being given under the various County Councils continues, we may expect a more extensive use of artificial manures in the near future, and some means similar to the above ought to be adopted in order to protect the public from loss. The American system of land transfer and registration might also be studied by our authorities with great advantage. *W. H. Divers, Ketton Hall Gardens, Stamford.* [America is new, and is fitted with a brand new system of managing these things, whilst our system is the growth of centuries. We do not deny its disadvantages; and the American vainly longs for that which has the flavour of antique usage. *Ed.*]

THE ROYAL HORTICULTURAL SOCIETY.—The time approaches when the council will have to select its committees, and I trust that in making its selection one vital point may be undisputed, however much opinions may vary as to the relative preponderance of trade or amateur interests represented on these committees. This vital point appears to me to be, that no man labouring under the suspicion of illegal dealings, or who has passed through the Bankruptcy Court, or been in liquidation, or has made a composition with his creditors, shall (unless these unfortunate experiences are well known to have been caused by no fault of his own) be eligible for a seat on either committee. If the council thus selects men who are well known for their honourable independence, it will not only strengthen the hands of the committees themselves, but will render their decisions and judgments of far greater weight throughout the horticultural world. *Candour.*

THE GARDENERS' BENEVOLENT INSTITUTION.—In common with many others, I am pleased to see, by circular received, that some alterations are about to be made in the rules and administration of this most admirable institution; but as alterations without improvements are useless, I hope whatever is done may be of an acceptable and attractive nature, sufficient to enlist more general sympathy, and that will induce every horticulturist to join hand and heart in this laudable work. The committee will doubtless move a scheme already framed for working out; yet suggestions from outsiders may be acceptable, and as the meeting is near at hand, and the place of meeting too distant for many persons to attend, I think the columns of this journal a suitable medium in which to discuss and thresh out the question, and I hope it will please the Editor to grant space for ventilating and discussing the different opinions of correspondents. It might be well if the committee saw fit to give the best of their scheme for the consideration of the county members, for unless some sound practical inducements are brought forward, the young men will not enlist any more freely than has hitherto been the case. The alteration of title may not concern us so seriously as the cost and tiresomeness of soliciting votes under the present system of election, which I should like to see abolished, or only resorted to in the case of absolute incapacity of any deserving candidate, thus preserving the old title, "Benevolent." In other cases, I would advocate a form of superannuation, something after the fashion now in use by the principal railway companies, that members may expect to inherit by right rather than by favour; for although there may be very little in a name, the very term "Charity" is obnoxious. Again, as the Government is about to introduce a measure of easy insurance, which may become in time a serious rival to this institution, let us hope the committee will introduce a good and acceptable scheme of improvement which will afford satisfaction to the greater number of the craft. *J. H. Goodacre.* [We commend this subject to the attentive consideration of our readers. *Ed.*]

MULTUM IN PARVO.—The little piece of ground which forms the garden of Mr. Hugh Fraser, the foreman in the Leith Walk Nursery, and where his father lived before him, is full of interesting and a few rare plants. These are mostly on a rockwork, which is now being enlarged. Among them are *Barbarea vulgaris variegata*, *Juniperus hibernica nana*, *J. bermudiana* (which has stood out for ten years), *Saxifraga McNabiana*, *Gentiana verna*, *Andromeda japonica aurea*, *Berberis glumacea*, *Quercus Fordi*, and a full collection of *Helianthemums*. He has also a plant of *Rhus venenata*, the poison-wood of America, and a *Mutisia decurrens* is growing on the cottage. At the corner of the hedge, where it

could run up a Thorn, were the remains of the common English Bryony, Mr. Fraser said he brought from England because it did not grow wild in Scotland. Hooker says, "rare in the North." *Vagabond*.

COSTUS IGNEUS.—A fair-sized specimen of this plant is now in flower in the Birmingham Botanical Gardens, and the exceeding richness of colour of its brilliant deep orange-coloured flowers arrests the attention of visitors. The genus *Costus* is a rather extensive but little known one, and abounds in the moist regions of tropical America and Africa; and in Asia, *C. speciosus* is a great ornament in the forests of Bengal. The stem formation resembles that of the Ginger plant, *Zingiber officinale* forming a crown of leaves, from the centre of which the solitary flower is formed, and brings to one's mind the blooms of *Lychnis Haageana*, the flowers being quite 2 inches in diameter, and very striking in colour. It is growing in the stove. *W. D.*

A CURIOUS CYPRIPEDIUM.—Mr. Latham, the Curator of the Birmingham Botanical Gardens, has a reputation for seedling *Cypripediums*, and has now in flower a very singular variety, the result of a cross betwixt *C. Spicerianum* and *C. hirsutissimum*, and is growing in a basket. The dorsal sepals resemble *C. Spicerianum*, and the lateral sepals are almost white, with a streak of violet in the centre of each. There is no pouch, but a lower sepal instead, of a cream colour striped with chocolate. It has bloomed for three or four years, never varying in character, but in foliage and growth it partakes of the character of both parents. A pod of seed has again been impregnated with pollen from *C. Spicerianum*, with a view to a restoration of the pouch. *W. D.*

PEA AUTOCRAT.—When visiting the gardens at Spy Park on October 29 last, I noticed the above in good bearing, and also carrying flowers. Alongside there grew a row of Perfection (Veitch). Mr. Perry, the gardener, said that he had a constant supply of Peas from these two varieties. They were growing on land sheltered on one side by a wall, and by a hedge on another, and they were protected from the attention of the birds by means of netting. I was told that these varieties are by far the best for a late supply, and I can bear testimony of that fact in regard to Autocrat, which we had up till October 14, and the rows were unprotected. *W. A. Cook, Compton Bassett.*

THE EDINBURGH BOTANIC GARDEN.—I cannot at all agree with your correspondent, "*Vagabond*," in his eulogistic notice of the rockwork, as the flowering plants in that division of the Edinburgh Botanic garden, as seen late this autumn, I must confess to receiving a very different impression from what I saw in this garden, also in the wane of the year. The almost painful formality of the built-up stone-work seemed altogether inappropriate to the plants, that may claim, if any cultivated plants may do so, surroundings and circumstances suggesting their wild natural habitats in the mountains. To those who have not seen this rockwork, it may be described as a miniature allotment-ground, squared off by stone, or rather fragments of rock, the enclosures being about 2 feet square, and filled with soil, one series succeeding another, and the whole arrangement pierced by winding walks, which bend through and round the several elevations. The mountain climbers meeting everywhere; the same little pockets, variously filled with plants which were by no means in that floriferous state that excited the admiration of your correspondent at the time of my visit. I was the more disappointed, as I had recently visited several gardens in the far north of Scotland filled with hardy plants, gloriously in bloom, and flourishing amongst rocks, which by their natural and artistic disposal charmed the eye, as much as they were congenial to the plants. The Edinburgh Botanic Garden used to be famous for hardy plants, and especially alpine. The inner recesses of the rockwork, part of which so charmed the eye of your correspondent, could not have been explored, as the plants enumerated are by no means remarkable for interest or variety, and might be found in greater perfection in many suburban gardens about Edinburgh. Let me conclude these observations by saying that this favoured city of the North, possessing in itself so many attractive features, and surrounded by picturesque scenery, should not be behind other gardens in features representing one of its great characteristics, mountain scenery in its national botanic garden. Kew, unfavourably situated as regards soil, climate, and position, with no natural advantages or suggestions

of rocky scenery, has yet achieved a rock garden of great utility and in perfect taste, at all times a delight to the artistic eye and a source of interest to the botanist. Let me hope that the powers that preside over the destinies of its northern rival may bestir themselves and create a rock garden worthy its position; facilities exist for the conveyance of material from every part of Scotland, and I am assured there is not a proprietor in Scotland but would willingly contribute examples of rock of his estate. Trap, the foundation stone of the city, would be represented. Granite, characteristically placed, would suit many plants. The old red sandstone, still within reach, would give it distinct feature. Gneiss rock, typical of parts of the Highlands, and rocks of a calcareous character would afford a suitable resting-place for the numerous plants that belong to the mountain and other limestone. A range of rock-work thus formed would be interesting, if well planted, not only botanically, but geologically, and would more fittingly replace the present tasteless, but well-intentioned, attempt at rock building for the growth of alpine plants. *Voyager.*

DAVENHAM BANK, MALVERN.—Whilst looking through these fine gardens the other day, I observed a magnificent specimen of *Cattleya exoniensis* in full flower. It had seven flower spikes, carrying twenty-four flowers and buds, and one spike undeveloped. The richness of the colours, and the general effect, were extremely charming. A plant of *Cypripedium Sedeni* had twenty spikes, a grand plant, as was also a specimen of *Lycaste grandiflora*. *Begonia Rex*, growing underneath the centre stage in the Orchid-houses, was of marvellous luxuriance. The old-fashioned hard-wooded plants are being trained and grown into very fine specimens, and they keep improving. *Ericas*, *Epacris*, *Polygalas*, and *Witsenia corymbosa* are very fine plants. At the back of a glass case, and growing against the wall, were some Vines; amongst them was a *Gros Colmar*, carrying medium-sized bunches, very large in berry, and of a degree of finish rarely seen in this variety. *Mrs. Pince*, *Lady Downes*, and *Alicante* were also doing well in the same glass case. Mr. Bradshaw, besides the gardens, has under his charge a very perfect model farm. *J. Udale.*

DIOSPYROS KAKI (THE DATE PLUM).—At a recent meeting of the Birmingham Gardeners' Association, Mr. Vertegans exhibited fruit of this plant. It was introduced from China in 1789, and I remember our growing it in a then celebrated south of England nursery more than fifty years since, and it was regarded as hardy on the south coast of England and in the Channel Islands. I never knew of its producing fruit. The fruit exhibited bore a resemblance to a moderate-sized Tomato, and is of a deeper tint of colour than yellow; but the fruit was not ripe enough for getting an accurate idea of its flavour and fitness as a dessert fruit, so was not tasted. *W. D.* [Unless blotted the fruits are generally too astringent, but one we tasted recently was almost free from it. *Ed.*]

SOCIETIES.

NOVEMBER MEETING OF THE SCOTTISH HORTICULTURAL SOCIETY.

The meeting of this Society was held on the night of November 6, in the hall of the Y.M.C.A., Mr. Todd in the chair. A lecture on "The Dukeries and Sherwood Forest," illustrated with lime-light views, was the reason for the change of venue. Although conciseness was a necessity owing to the large number of slides, the lecturer gave a very eloquent and vivid description of all that he had seen in his pilgrimage. After a well-deserved vote of thanks, had been awarded, the minutes of the last meeting were read by Mr. A. Laird. After intimations of motions for the next meeting, Mr. Mackenzie, the Treasurer, was called upon to give a statement of receipts and payments in connection with the recent Chrysanthemum show. The most interesting details were £866 1s. 6d., the largest amount the Society have ever taken at a show of these flowers; prize-money and band, £271 15s. The Chairman then proposed that the Chrysanthemum show should be held next year on the usual scale and on the same lines. Mr. Mackenzie, in support, enlarged on the great improvement the show had wrought in perfecting in the North the cultivation of the Chrysanthemum. In ten years, he went on to say, "it had revolutionised its culture."

The motion was, of course, carried with acclamation. The same gentleman also proposed the motion for a letter of condolence to be sent to Mrs. Downie. In the course of his speech, he said that "his life-history was to improve horticulture, and that his name would also be held in loving reverence. He also mentioned the fact that Mr. Downie had risen from a gardener in a small place to be one of the foremost nurserymen of Scotland, thus showing what skill and integrity can do to raise the workman."

The finest blooms of Louis Bœhmer ever grown in Scotland were exhibited, along with some large *Souvenir de la Malmaison*. That this was really the case was admitted by all capable judges at the meeting.

ROYAL CALEDONIAN HORTICULTURAL.

THE November meeting of this Society was held in MacDowell's Rooms on November 30, Mr. Milne (James Dickson & Sons) in the chair. From the abstract of the accounts of the Society, it appears that the receipts from all sources were £1589 15s. 6d., and the payments £1488 15s. 6d., giving a balance of £100 17s. 4d., which, by deterioration of property, is reduced to £89 19s. 4d. The most interesting items were £1089 18s. 6d. for admission to the shows, the largest amount being taken at the autumn show—£472 17s.; £272 1s. 5d. was given in prizes. On the motion of Mr. Milne, Sir Charles Tennant, of The Glen, a great patron of horticulture, was elected Vice-President in the room of Sir J. Maitland-Gibson, and the following gentlemen committee-men:—Mr. D. P. Laird, Mr. M. Dunn, and Mr. McHattie. Mr. W. Young next moved that a piece of plate should be presented to the Secretary, Mr. P. Neil Fraser, for his long and disinterested services to the Society. This was cordially and unanimously agreed to; also the motion to send letters of condolence to the widows of Mr. Gordon and Mr. Downie.

NATIONAL CHRYSANTHEMUM.

DECEMBER 7.—The last meeting of the Floral Committee for the present year took place at the Royal Aquarium, Westminster, when, considering the lateness of the season and the state of the weather, a goodly number of flowers were staged. But one First-class Certificate of Merit was awarded, to Mr. Robert Owen, nurseryman, Maidenhead, for *Anemone*-flowered *Enterprise*, apparently one of the Japanese type, but singularly compact in build, the ray-florets being tubular and of a clear lilac-pink colour; the compact cushion in the centre, primrose; this is a remarkable acquisition, should this fine character be maintained. Mr. Owen also had Japanese *Mrs. B. Wynne*, a large broad petalled pure white Japanese, of the build of Countess of Hamleden, which deserved a higher award than Commended; Japanese *Marc Micheli*, pink and white, with pale yellow centre; a reflexed flower of the build of *Avalanche*, but not so broad in petal; *W. H. Lincoln*, improved, which was Certificated by the Royal Horticultural Society under the name of *Thomas Selwood*, but though a little deeper in colour than *W. H. Lincoln*, it cannot surely be distinguished from it; *R. George*, an incurved Japanese, yellow and salmon, greatly resembling *G. C. Schwabe*, and several others.

Messrs. Pitcher & Manda, Hextable, had Japanese *Mrs. Lay*, an incurved variety of some promise, the base lilac, large white centre—the earlier blooms come darker in tint; Miss Ada McVicker, a broad petal, white and delicate lilac-tinted variety, of the Puritan type, but more regular in shape; Japanese *Pearl Beauty*, like *Puritan*; Japanese *John H. Taylor*, pale magenta-rose, with primrose centre; and incurved *Octa*, salmon, bronze, and yellow.

From Mr. G. Evans, The Gardens, Coton Hall, Bridgenorth, came an unnamed sport from *Princess Teck*, between *Mrs. Norman Davis* and *Charles Gibson* in colour, and, as was well-observed by Mr. Norman Davis, "these sports want following up from stage to stage, as they will come yellow from a crown bud, and much deeper in colour from a terminal one." Mr. E. A. Wallace sent a yellow sport from *Florence Piercy*, which has already been exhibited under the name of *Mrs. N. Bromhead*, and which has sported in several places. It is considered inferior to the yellow form of *Mlle. La Croix*, known as *C. E. Shea*.

Messrs. Henry Cannell & Sons, Swanley, had Japanese *Mlle. Marie Recoura*, a fine and striking pure white Japanese of the character of *Fair Maid* of Guernsey, but larger and purer in colour—it was

Commended; and Japanese Cannell's Striped, a direct importation from Japan, dark red, striped with gold, small but very distinct; it is said to be a late variety, and the first terminal bud should be taken.

CULTURAL NOTES.

WITSENIA CORYMBOSA FROM CUTTINGS.

THERE is a very prevalent idea amongst gardeners that this beautiful Cape plant is difficult to propagate from cuttings, and the old-fashioned method of increasing by rooted offsets and by seed, which is a tedious business, is still very largely adhered to, yet with proper treatment it is most easily rooted. Cuttings should be taken in July or August, only healthy clean growths being selected, taking them where possible with a slight heel; they should be inserted round the sides of thumb-pots, thoroughly drained and filled with a mixture of fine sand and peat, giving each cutting ample room. They require little or no bottom heat, but should be placed in a case in a cool-house, keeping them quite close, with the exception of airing them each morning for a couple of hours, care being taken to keep them moist and properly shaded. They generally root in ten or twelve weeks, and with careful treatment hardly a cutting will miss. *W. J. M., Glasgow.*

LOCULIA GRATISSIMA.

Many gardeners find a difficulty in propagating this plant, but if short, stocky side-growths are taken off with a heel of older wood, and inserted in cocoa-nut fibre, firmly pressed into thumb-pots, placed on brisk bottom-heat, in a shady, moist propagating-pit, moderately supplied with tepid rain-water, little difficulty will be found. I have struck them in quantity in this manner, and likewise in sandy peat and sandy loam, but have found that the cocoa-nut fibre is the best substance, not more than 1 per cent. of the cuttings failing to strike. *B. Ashton, Glossop Hall Gardens, Derbyshire.*

VARIORUM.

PRICKLY PEAR IN MEXICO.—My experience is that the plant is almost invaluable in hot, dry, and especially sandy countries, where vast stretches have to be crossed by ox-teams, and there is little or no water for man or beast. Some years ago I was well acquainted with that almost desert country lying between San Antonio, Texas, and Chihuahua, Mexico; long before the advent of railroads in that part, and when nearly all the wool grown in the northern part of Mexico found its way to San Antonio, Texas, by means of large trains of ox-waggons, and I may safely say, that had it not been for that providence of Nature, the Prickly Pear, the large traffic could not have been carried on, nor could the vast herds of sheep have been maintained in that dry arid region. It seldom rained there, and when it did the grass would spring up fresh and green, but, in a few days, the hot sun would parch it; then the winds would blow off the dried grass, leaving the ground bare again, excepting about the roots of the Prickly Pear, where it was sheltered from the hot sun, and received some moisture from the roots of the plant. It appears to me that the Cactus must derive its moisture and sustenance in a great measure from the air, as it thrives even on brick and stone walls in the driest climates, merely throwing out a few stray roots to prevent itself being detached by the winds or otherwise. It is the custom when teams of ox-waggons (commonly called the "prairie schooners") are travelling, to send men ahead in the afternoon to the place of camping for the night to prepare the supper for the oxen. Arriving at the destination, these men set to work collecting piles of dry Cactus leaves and roots with which fires are made—and here I may mention that in the absence of wood the dry plant makes excellent fuel—then

the green leaves (or flattened branches to speak strictly) are chopped off the plant, stuck on forks and toasted in the flames until all the prickles are burnt off, when the leaves are cut into convenient "chunks" for the animals to masticate. This food should be allowed to cool well before it is eaten, or it will sometimes produce indigestion and diarrhoea. Cattle work and thrive on this food alone, and can go without water for several days without any apparent shrinkage in flesh or loss of muscular force. It is very curious to see the teams of oxen brace to their work and go ahead as soon as they see or smell the fire where their supper is being prepared, and when they have finished their cooked rations and are turned loose or herded, as the case may be, for the night, they will search for the ripe fruit of the plant, which is sweet, nutritive, and juicy, and abounds in great quantities nearly all the year round. The fruit of this wild Cactus is eaten by man, but is not considered wholesome, though very refreshing, yet the fruit of the cultivated varieties is quite so. Sheep are exceedingly fond of the fruit, and when let out of the pen in the morning will race in search of the ripe fruit. Sheep will get fat in a country where there is little or nothing else but Prickly Pear; the plant needs no cooking for them, the narrowness of their mouths enabling them to gnaw at the leaves between the prickles; the leaf once opened in this manner, it is an easy matter for the sheep to get at the remainder of the pulp. Sheep require little or no moisture in a Prickly Pear country. The festive goat thrives even better than the sheep on the plant; being a climber, he gets at the fruit on the upper leaves as well as the lower. There are in this country hundreds of thousands of goats maintained in the deserts on the Prickly Pear; they are killed for the sake of their skins and tallow. When the tallow is all extracted from the meat, the residue is packed in bales, sent to the various markets, and sold to the poor for a cheap "meat food." The young "leaf-shoots" or branches of the "nopal," as it is called in Mexico, are used here for various culinary purposes; they are gathered when quite young and tender, and the excrescences from which later on the prickles would develop are shaved off with a keen knife; they are then boiled in water with a certain proportion of salt until well cooked, like any other vegetable, and are then either cut into cubes to use in soup, having the flavour of the gombo of New Orleans, or sliced into narrow strips when cold, and made into a salad in the ordinary way with pepper, salt, vinegar, oil, &c., "al gusto," most refreshing and palatable, as I can assure you personally. The sap of the leaves is used as a size to mix with lime for white-washing; the leaves are hacked with a knife, and then put into water for some time, this water being used for mixing with the lime; it is excellent for the purpose named—quite equal to the ordinary glue. I believe a vegetable glue of good colour could be made from the plant. Being a very fibrous, glutinous plant, I see no reason why it should not be a good paper-making material. Of its medicinal qualities I know little; personally I have used it occasionally as a poultice for wounds, and to relieve rheumatism. To prepare the poultice, the leaf is partially baked, or toasted in some way, if an oven is not handy, then one of the outer side-skins is taken off, and the interior pulp minced with a knife and then applied. For a wound it can be used at an agreeable temperature, but for rheumatism it must be as hot as the patient can bear it. All the above applies to the wild Prickly Pear; the cultivated species, while retaining the same properties, have additional merits, although cultivated in Mexico for the fruit alone. The following are the principal varieties cultivated, viz.:—The white Prickly Pear, the fruit of which has an agreeable acid flavour; the yellow, rather sweeter than the former; the crimson (Morada), large and small, quite sweet; the "Tapona," called so by reason of its costive effect when eaten in large quantities; the "Pelona" (naked—almost without prickles); there are two varieties of this species, producing yellow and crimson fruit respectively. Of all the Prickly Pears this is the great

forage plant. It is almost without the objectionable prickles, and will grow in almost any climate if not very damp; the leaves are the largest and thickest, and while the average weight of the full-grown leaves of other varieties is 3 lb., the leaves of this variety will average 8 lb. The Prickly Pear is generally reproduced by means of the leaves, and as it is necessary to dry them a little before planting, they will stand a long transportation. In some parts of the country a wine is made from the fruit; here in Tulancingo a kind of sweet is made by squeezing the inside of the fruit through a cloth to extract the juice, which is then boiled in the same manner as the juice of the sugar cane. One other species of the plant that I must mention before concluding is the "Xoconostle," the fruit of which makes a most delicious preserve. I feel sure it would "take" in England, as it has that peculiar "foreign" flavour so much liked; it has a particular flavour of its own, as distinct from other jams as Indian Chutnee from the ordinary pickle of commerce. The Prickly Pear can be easily eradicated at any time from the soil on which it grows, if it is thought better to change it for more profitable crops. *B. N. C. Fletcher, Tulancingo, State of Hidalgo, Mexico, May 12, 1892, in the Agricultural Journal of the Cape Colony, August 25, 1892.*

TRADE NOTICE.

SHIREOAKS MARKET GARDEN COMPANY (Limited), registered by Williamson, Hill, & Co., 13, Sherborne Lane, E.C., with a capital of £1000 in £10 shares. Object, to carry on business as nurserymen in all its branches. Registered without articles of association. *Financial News, December 2, 1892.*

THE CINERARIA AND CALCEOLARIA IN WINTER.

THESE are amongst the most useful of our flowering greenhouse plants; some cultivators say that they cannot grow them because of their liability to be attacked by green-fly; which they say cannot be removed by fumigating, and in time the plants succumb to the persistent attack of the parasites. It is a fact that these plants are very liable to be attacked by green-fly, which will utterly ruin them, unless the insects are destroyed, which can be done by dipping them in a solution of soft-soapy water and tobacco-liquor: but fresh broods will appear again very soon, and the dipping must be repeated. This can be continued up to the time the first flowers open. I have also used Campbell's fumigating material, and find it answers much better than tobacco smoke for killing the aphids which attacks Cinerarias; it is also much easier to deal with. The number of cubic feet of air which the house contains is ascertained, and the fumigating material required is suspended in the house, and lighted, it smoulders away gradually; the operator not needing to go into the house at all—in fact, it is rather dangerous to do so.

The potting compost we use for both kinds of plants is about four parts fibrous loam, one part leaf-mould, one part decayed manure, and one of coarse white sand. We are careful not to injure the leaves, as they are exceedingly brittle, and if injured either in the repotting or in moving them about, they get a ragged appearance, and are quite spoiled for exhibition purposes, or even for the decoration of the greenhouse or conservatory. The leaves of a plant are quite as necessary to its effect when in flower as the flowers are, and care should be taken by the cultivator to have a perfect plant. The Calceolarias flower when the Cinerarias are past their best; they also like a lower temperature, and when the plants are grown in one house, the Calceolarias should be placed at the cool end of it—they are not injured if the temperature falls to 35° or even 32°, whereas this would be very detrimental to the Cinerarias. *J. Douglas.*

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.			
	Above (+) or below (—) the Mean for the week ending December 3.	ACCUMULATED.				No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.		
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.						
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.					
0	3 —	0	36	— 142	+ 257	17	+	236	46.7	10	26
1	2 —	0	41	— 362	+ 315	3	—	189	27.0	26	31
2	1 —	6	30	— 232	+ 222	4	—	186	24.6	32	30
3	1 +	10	27	— 2	+ 200	2	—	172	26.3	23	35
4	1 +	12	29	— 182	+ 284	1	—	166	22.8	24	34
5	2 +	30	12	— 151	+ 122	3	+	152	23.7	27	39
6	1 —	10	32	— 251	+ 249	2	+	190	44.1	15	33
7	0 aver	10	19	— 182	+ 178	1	+	192	35.0	23	33
8	2 +	31	6	— 144	+ 116	3	+	180	29.5	18	40
9	0 aver	11	29	— 193	+ 137	1	—	213	36.2	12	20
10	1 +	29	9	— 123	+ 145	5	+	187	37.9	13	34
*	2 +	48	0	+	26	+ 38	0 aver	181	28.2	14	46

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts; 1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts; 6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending December 3, is furnished from the Meteorological Office:—

"The weather was wild and changeable during the earlier part of the period, with occasional rain in all parts of the kingdom; but, later on it became much colder, with showers of sleet or snow over the northern and north-western districts, and some considerable falls of rain in the south.

"The temperature after being high very generally, fell rapidly towards the end of the week, and in the northern districts it became very low. The highest of the maxima were recorded on November 28, and ranged from 61° in 'Scotland, W.,' and 60° in 'Scotland, E.,' to 52° in 'England, E.' The lowest of the minima were registered on December 1, when they varied from 13° in 'Scotland, N. and E.,' and from 19° in 'Scotland, W.,' to 29° in 'England, S.,' and to 38° in the 'Channel Islands.'

"The rainfall was greatly in excess of the mean in 'Scotland,' and rather so in 'England, S.,' and many of the western districts. Over the eastern parts of Great Britain, and in 'Ireland, N.,' however, there was a deficit.

"The bright sunshine was more prevalent than for some weeks past, and exceeded the mean in most parts of England and in the east of Scotland. The percentage of the possible duration ranged from 32 in 'England, N.E.,' 27 in 'England, S.,' and 26 in 'Scotland, E.,' to 12 or 13 in Ireland, and to 10 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, December 8.

MARKET very dull with good supplies, and prices unaltered. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 0 3 6	Melons, each ... 0 6 1 3
— Nova Scotia, per barrel 10 0 17 6	Pine-apples, St. Michael ... 4 0 6 0
Cobs, per 100 lb. ... 120 0 125 0	Oranges, Florida, per case ... 14 0 18 0
Grapes, per lb. ... 0 6 2 0	
Lemons, per case ... 15 0 35 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0 12 0	Ferns, various, doz. 4 0 9 0
Aspidistra, per doz. 5 0 30 0	— per 100 ... 5 0 8 0
— specimen, each 7 6 21 0	Ficus elastica, each 1 6 7 6
Chrysanthemums, p. doz. 4 0 12 0	Marguerite, per doz. 6 0 12 0
— large plants, ea. 1 6 2 6	Mignonette, doz. pots 6 0 12 0
Cyclamen, doz. ... 9 0 18 0	Palms, various, each 2 0 10 0
Cyperus, per dozen 4 0 10 0	— specimens, each 10 6 84 0
Dracena, each ... 1 0 5 6	Pelargoniums, scarlet, p. doz. ... 4 0 6 0
Erica, various, doz. 9 0 18 0	Solanums, per doz. 9 0 12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 4 0 8 0	Mignonette, 12 bun. 3 0 6 0
Bouvardias, per bun. 0 9 1 0	Narciss (Paper-white) French, doz. bun. 1 6 3 0
Carnations, 12 blms. 1 0 3 0	Pelargonium, scarlet, per 12 bunches ... 5 0 8 0
Chrysanthemums, p. doz. blooms 1 6 6 0	— 12 sprays ... 0 9 1 0
— p. doz. bunches 4 0 10 0	Poinsettias, per doz. blooms 4 0 9 0
Cyclamen, doz. blms. 0 3 6 0	Pr'mula, double ... 0 6 0 9
Eucharis, per dozen 3 0 6 0	Pyrethrum ... 2 0 4 0
Gardenia, per dozen 2 0 4 0	Roses, Tea, per dozen 1 0 2 0
Heliotrope, per doz. sprays ... 0 6 0 9	— coloured, dozen 2 0 4 0
Hyacinth, Roman, doz. sprays 0 6 1 0	— yellow (Maréchal), per doz. 3 0 6 0
Lilac, white French, per bunch 5 0 6 0	— red, per dozen ... 1 0 2 0
Lilium Harrisii, doz. 8 0 10 0	— (French) p. doz. 1 6 4 0
— various, do. ... 2 0 4 0	Stephanotis, per 12 sprays 9 0 12 0
Lily of the Valley, doz. sprays 3 0 6 0	Tuberose, 12 blms. 0 3 0 9
Maiden Hair Fern, 12 bunches ... 4 0 6 0	Violets, Parme French, per bunch 4 0 5 0
Marguerite, per doz. bunches ... 3 0 4 0	— Czar, French, per bunch 2 0 3 0
Mimosa, French, bun. 1 0 2 0	— small French, p. doz. bunches 1 6 2 0
Orchids:— Cattleya, 12 blms. 6 0 12 0	— small English, p. doz. bunches 1 6 2 0
Odontoglossum crispum, 12 blms. 2 0 6 0	

ORCHID-BLOOM in variety.

HOLLY and MISTLETOE coming very good.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes Globe, ea. 0 4 0 6	Mushrooms, punnet 2 0
Beans, French, lb. ... 1 0 1 6	Mustard and Cress, punnet ... 0 4
Beet, red, per dozen 2 0 3 0	Parsley per bunch ... 0 3 0 6
Carrots, per bunch ... 0 4 0 6	Seakale, per basket ... 2 6
Cauliflowers, each ... 0 3 0 6	Shallots, per lb. ... 0 6
Cucumbers, each ... 0 4 0 8	Spinach, per bushel 3 6
Endive, per dozen ... 2 0 3 0	Tomatoes, per lb. ... 0 6 1 0
Herbs, per bunch ... 0 9 1 0	Turnips, per bunch ... 0 4 0 6
Lettuces, per doz. ... 1 6 2 0	

SEEDS.

LONDON: Dec. 7.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maize Pond, Borough, London, S.E., write that, owing to the large number of farmers and others up in London for the Cattle Show and the Agricultural Conference, the seed market this week has been well attended, without however, much activity in actual business. As regards red Cloverseed, some fine new English has just realised 112s. per cwt.; this makes choice bold purple American at 68s. excellent value. Trefoil has lately met with more attention. There is no change in either Alsike or White. Canary seed is held for advanced rates; the Turkish crop this year (is estimated at 15,000 bags against 60,000 for 1891, and 100,000 for 1890. Hempseed keeps steady. For Peas and Haricots the demand is slow. Some fine new Champion Scarlet Runner Beans are now obtainable at tempting figures. Rapeseed tends to harden in value. Mustard, both white and brown, is much wanted.

FRUITS AND VEGETABLES.

SPITALFIELDS: Dec. 6.—Quotations:—American Apples, 10s. to 16s. per barrel; English do., 2s. 6d. to 8s. per bushel; Pears, 2s. 6d. per half-sieve; English Tomatoes, 2s. 6d. to 5s. per peck; foreign do., 1s. to 1s. 6d. per box; Cabbage, 2s. to 3s.; Savoy, 3s. to 4s. 6d.; Cauliflowers, 4s. to 6s. per tally; Greens, 2s. to 3s. 6d.; Turnips, 1s. 6d. to 2s.; Carrots, 1s. to 3s.; Parsley, 1s. to 2s. per dozen bunches; Spinach, 1s. to 1s. 3d. per bushel; Brussels Sprouts, 1s. to 1s. 3d. per half-sieve; Turnip-tops, 2s. 3d. per bag; Horseradish, 1s. 6d. to 1s. 9d.; Celery, 9d. to 1s. per bundle; frame Cucumbers, 3s. to 6s.; Beetroot, 1s. to 1s. 6d.; Leeks, 1s. to 2s.; Cabbage Lettuce, 6d. to 8d.; Endive, 6d. to 9d. per dozen; Cost Lettuce, 6d. to 1s.; Parsnips, 4d. to 8d. per score; Mustard and Cress, 2s. per dozen baskets; English Onions, 5s. to 6s. per cwt.; Spanish do., 5s. to 6s.; Bordeaux do., 3s. to 4s. per case; Dutch and Belgian do., 4s. to 5s. per bag of 110 lb.; Carrots, 50s. to 60s. per ton.

BOROUGH: Dec. 6.—Quotations:—Cabbages, 2s. to 2s. 6d. per tally; Cauliflowers, 9d. to 1s. 3d. per dozen; Spinach, 1s. to 1s. 6d. per bushel; Brussels Sprouts, 1s. to 1s. 3d. per half-sieve; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 1s. 6d. per dozen bunches; English Onions, 6s. to 6s. 6d.; Dutch do., 4s. 6d. per cwt.; Horseradish, 1s. 6d. per bundle; English Apples, 2s. 6d. to 10s. per bushel.

FARRINGTON: Dec. 8.—Quotations:—Parsnips, 3s. per cwt., 60s. per ton; Carrots (Bedford), 50s. to 60s. per ton; Celery, 8s. per dozen; English bag Onions, 6s. to 7s. per cwt.; Spanish do., 5s. to 6s. per case; Turnips, 2s. to 2s. 3d. do.; American Apples, 14s. to 16s. per barrel; Sourings, 4s. per bushel; Blenheim, 6s.; and Wellingtons, 8s. do.; Tomatoes (Canary), 8s. per large box.

POTATOS.

SPITALFIELDS: Dec. 6.—Quotations:—Magnums, 50s. to 65s.; Imperators, 60s. to 70s.; Champions, 45s. to 60s.; Regents, 50s. to 57s. per ton; German Magnums, 2s. 6d. to 3s. per bag.

BOROUGH: Dec. 6.—Quotations:—English Magnums, 55s. to 65s.; Snowdrops, 60s. to 70s.; Hebrons, 60s. to 65s. per ton. FARRINGTON, Dec. 8.—Quotations:—Imperators, 60s. to 70s.; Bedford Magnums, 60s. to 70s.; Fauce, do., 80s. to 90s.; Schoolmaster, 80s. to 95s. per ton.

GENERAL AVERAGES: Dec. 7.—Magnums, 55s. to 75s.; Hebrons, 60s. to 80s.; Snowdrops, 60s. to 80s.; Imperators, 50s. to 70s.; Champions, 45s. to 60s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending December 3, and for the corresponding period last year:—1892: Wheat, 27s.; Barley, 25s. 5d.; Oats, 17s. 2d. 1891: Wheat, 38s. 11d.; Barley, 30s. 9d.; Oats, 22s. 2d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 115s.; do., inferior, 50s. to 75s.; hay, best, 75s. to 112s.; do., inferior, 4s. to 65s.; and straw, 28s. to 44s. per load.

NOTICES TO CORRESPONDENTS.

*. PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of readers.

BATH SHOW: P. M. We cannot at this remote date insert anything about your exhibit at this show.

BOOKS: G. Abbey. Apply to Lovell, Reeve & Co., Booksellers, Henrietta Street, Covent Garden, W.C. The author named published nothing in book form on Lichens.

GLASS HOUSES: Young Gardener. The houses might be planted near the glass with Tea Roses, say Maréchal Niel, Niphetos, and A. K. Richardson, and further away from it the best kinds of Peaches and Nectarines might be planted. The Roses being pruned hard back in May after flowering, would not grow so much during the summer as to injure the Peach trees, or the fruits. The finest blooms and fruits should be aimed at. Under the Peach trees, Maidenhair Ferns and Davallias might be grown, either for sale as cut fronds or in pots. You might cultivate Freesia refracta, Dutch bulbs, Amaryllis, Violets, planted out or in pots; Selaginellas, Tradescantia zebrina, &c. Lily of the Valley might be forced in a cheap kind of hot-water pit, and brought into the house in bloom. Lygodium scandens might be grown for cutting; it would cover the ends of the houses, or run up the roof supports. Salads might be grown in the winter. Places might be found for forcing Rhubarb, Seakale, Endive, and Chicory, and perhaps for growing Mushrooms under protection, or on ridges out-of-doors. Helleborus niger blooms pay well if brought on under glass. Elaine and Avalanche, and the choicest colours in Japanese Chrysanthemums, fetch good prices if grown in quantity, so that dealers could be sure of getting blooms during the season. Put an under-crop under the orchard trees, if these are not too close for that.

GOOSEBERRIES AND CURRANTS, &c.: Constant Reader. The young wood is that which must be cut out, that is generally speaking, which should be done to within $\frac{1}{2}$ inch of the shoot or branch from which it springs. Main and secondary branches should not have their terminal shoot shortened, unless it is likely to touch the ground during its growth next summer. These main branches may have one young shoot left on each about the middle of their length, also not to be shortened back. Do not let young shoots or branches cross each other. Keep the middle of the bush clear of all shoots. Always cut to a bud which will push a shoot in the desired direction. The above applies to both kinds of fruit, except that red Currants should have the shoots that are retained cut to various lengths, say, from 6 inches to 15 inches according to position. Black Currants need to have the weaker shoots

removed quite down to the ground, if these spring from the roots, and some of those that spring from the main branches. This must be done to prevent undue crowding of the shoots, resulting in small berries. Old branches getting fruitless must be cut out at the ground-level. No young shoots left need to be shortened in bushes already formed and in bearing, only in bushes in course of formation. Raspberries should have weak canes and those that have fruited cut away; eight or ten canes to a stool are enough.

INSECTS EATING FERNS: *J. Adams.* What you call "Botts," are probably a species of weevil. Hunt for them at night with the aid of a slide lantern, when by turning the light on the plants suddenly, the depredators may be detected dropping to the ground. They are lively fellows, and must be caught at once when observed. The grubs may have come in with the potting soil. Having caught a few, send them to us for identification.

NAMES OF FRUITS: *Harry.* Scarlet Pearmain.—*J. J. & Sons.* 1, Not recognised; 2, King of the Pippins; 3, Royal Somerset; 4, Golden Reinette; 5, Dutch Codlin; 6, Beauty of Kent; 7, not received; 8, Scorpion; 9, Beurré Diel, much decayed.—*F. F.* 1, Blenheim Orange.

NAMES OF PLANTS: *G. O. W.* Phlox subulata, probably. — *Chepstow.* Cymbidium giganteum. The spots on the Dendrobium leaf are probably caused by the plant being kept in too high a temperature after the growths are finished.—*Grower.* Miltonia Bluntii.—*S. J.* 1 and 2, we cannot undertake to name florists' flowers: send them to a specialist; 3, Libonia florabunda; 4, Rondeletia speciosa; 5, Sanseveira variegata; 6, Gynostachys Pearcei.

PALMS: *F. L.* The leaves sent show the ravages of all kinds of insects to be found in a hothouse. You must pay more attention to keeping the plants clean by using insecticides, the syringe, and the brush and sponge. All Palms need to be cleaned in every part which can be cleaned, twice a year at the least.

QUICK-GROWING TREES: *Vindex.* Acer negundo, A. platanoides, Gleditsia triacanthos, Weeping Willow, Castanea vesca, C. lutea, Pavia in variety, Tulip tree, Juglans nigra, J. regia laciniata, Bigonia speciosa, Esculus hippocastanum, Alder in variety, Sophora japonica, Corylus avellana, Platanus orientalis, &c.

RED-BERRIED PLANTS FOR A WALL: *Vindex.* Crataegus pyracantha; Cotoneaster Simonsii, C. microphylla, Rosa rugosa, R. mollis, R. m. pomifera, R. canina, R. sempervirens scandens, R. rubiginosa (Sweet Briar), Lonicera Periclymenum (Woodbine), Rubus phoenicolasius, R. lasiocarpus, Berberis vulgaris (Common Barberry), Euonymus europæus.

ROMAN HYACINTHS: *J. H. S.* We have received several complaints. The bulbs look healthy, but they may not have been properly ripened last year. We do not think either the grower or seller is to blame, but the clerk of the weather.

SAWDUST AS MANURE: *F. A. H.* Not only useless, but dangerous, as when dug into the soil, it forms a very suitable medium for the growth of fungus. Burn it, and spread the ashes on the land.

SWEDES, TURNIPS, AND CABBAGES: *Seedsman.* As these flower at about the same time, certainly there is great danger of cross-fertilisation if grown side by side. The fields ought to be some few miles apart.

TOMATO-FLY AND MEALY BUG: *Constant Reader.* It is not consonant with fact or reason that the one insect breeds or introduces the other on the plants; but it is a fact that they multiply fast side by side if means be not taken to destroy them by fumigation in the one case, and washing with insecticides in the other.

TREES TO HIDE A FENCE: *Vindex.* Red Cedar, Cupressus Lawsoniana, Thuja sibirica, Thuja orientalis, Rhododendron ponticum, Buxus, Caucasian Laurel, Raphiolepis ovata, Yews in variety.

COMMUNICATIONS RECEIVED.—*H. C. W., Singapore.*—*A. P. B.*—*F. W. B.*—*W. C.*—*J. N. T. C.*—*J. O. E.*—*C. de B.*—*C. B. C.*—*R. B.*—*Prof.*—*H. Copenhagen.*—*E. R. Ghent.*—*E. P. Ghent.*—*R. S. B.*—*J. W. C. N.*—*B. Wadde.*—*I. C.*—*J. C.*—*Surgeon-General G. B.*—*H. W. W.*—*P. G.*—*W. L.*—*G. P. D.*—*T. F.*—*T. E.*—*O. J.*—*T. J.*—*H. F. R.*—*J. J. W.*—*C. A. M. C.*—*J. B. N.*—*E. B. E. F.* in Thurn.—*Hamish* (your dozen of questions must wait till our next).
SPECIMENS RECEIVED.—*J. W. B.*—*Sir T. L.*—*T. C.*—*T. Ware.*
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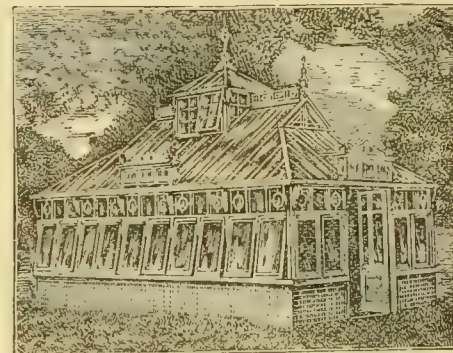
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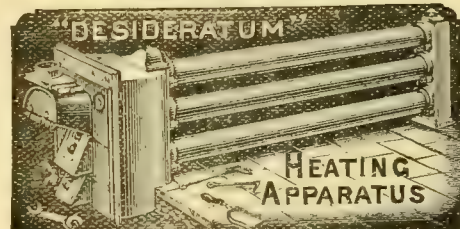
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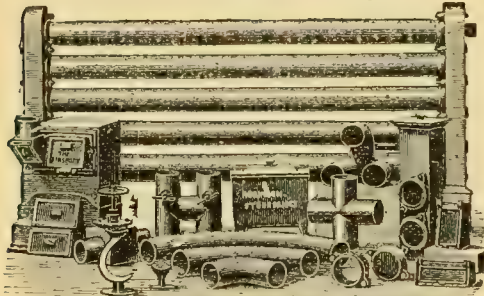
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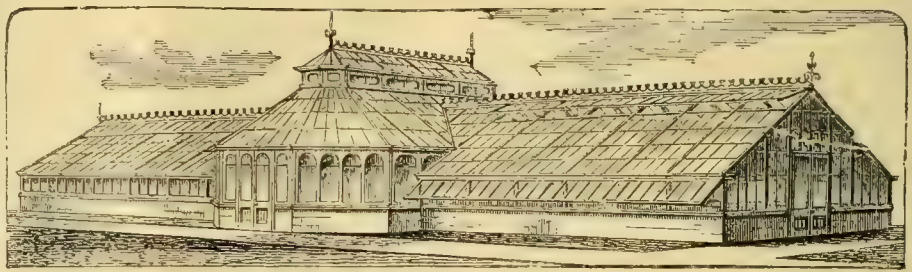
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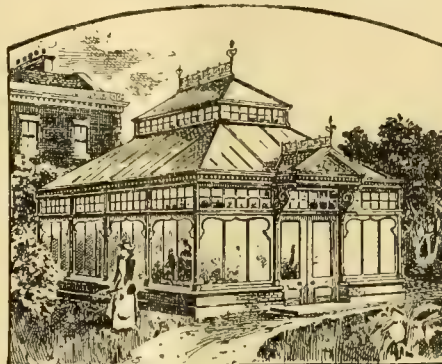
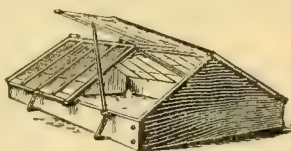
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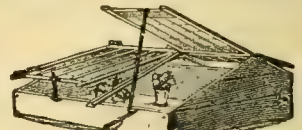


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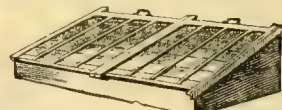
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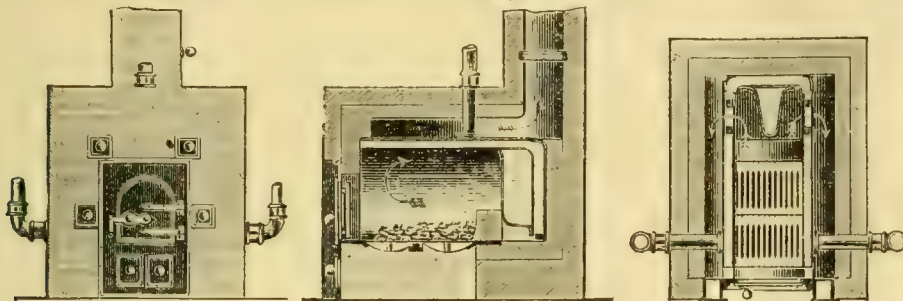
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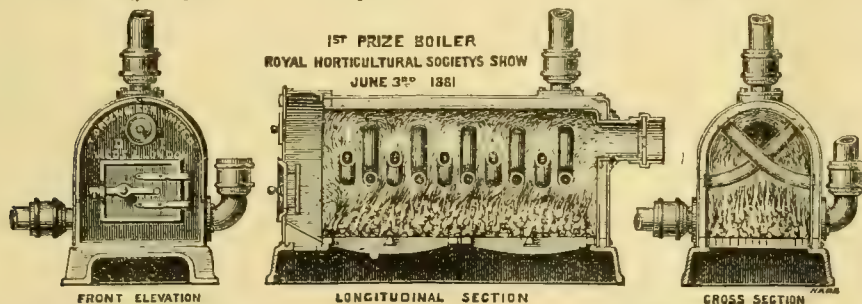
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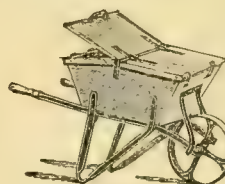
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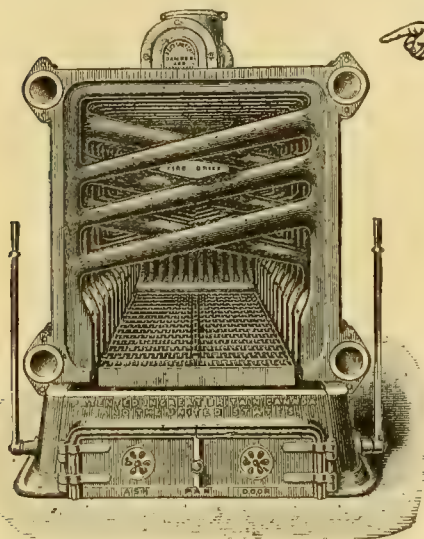
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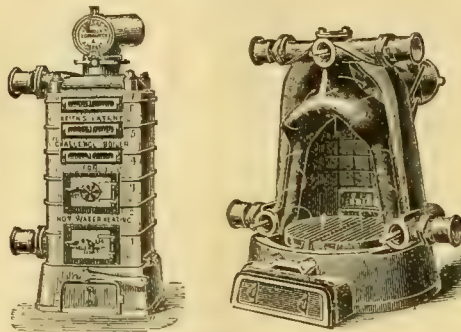
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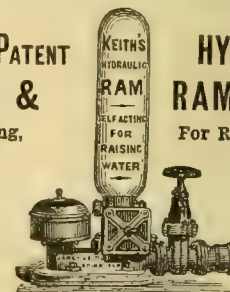
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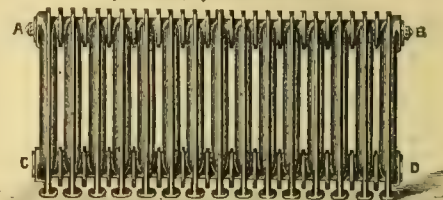
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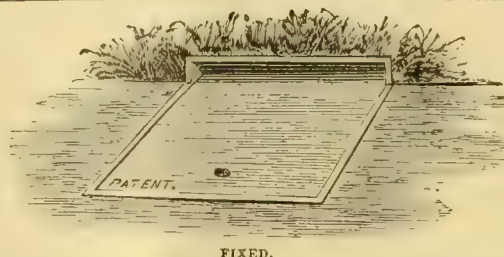
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most effectual in preventing the scouring of the gravel. At the inspection my Directors were much pleased with them, and gave instructions that they were to be used when required at Nunhead Cemetery.—I am, yours truly, W. WALTON, Secretary."

From Messrs. CUTBUSH AND SON, Highgate and Barnet Nurseries.—"Highgate Nurseries, London, July 27, 1892.—Dear Sirs,—Referring to the Improved Garden Gully you fixed for us some months ago, we are glad to say it answers admirably. As you are aware, our Nurseries here are very hilly, and during the recent storms all the ordinary gullies were blocked, whereas yours was in good working order. We shall not hesitate to recommend the same to anyone requiring the gullies for sides of paths and carriage-drives, and we feel certain, when it is known, there will be a great demand.—We are, yours faithfully, WM. CUTBUSH AND SON.—Messrs. VINCE & VINE."

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Every description of GREENHOUSES, LIGHTS, &c.

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The GARDENERS' CHRONICLE

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On MONDAY NEXT, DECEMBER 19, 1892, and
FOUR FOLLOWING DAYS.

BY

MESSRS. PROTHEROE AND MORRIS,
Auctioneers, 67 and 68, Cheapside, London, E.C.

For Particulars see Descriptive
Advertisement on next page.

Monday Next.

PLANTS AND BULBS.

140 AZALEA INDICA, 90 A. MOLLIS, 54 HARDY GHENT
AZALEAS, 54 RHODODENDRONS, HYBRID; DOUBLE
WHITE CAMELLIAS, 50 SPIRÆA ASTILBOIDES,
HARDY BORDER PLANTS in variety, 230 STANDARD
and DWARF ROSES, DOUBLE CHINESE PEONIES,
BEGONIAS, CALOCHORTUS in variety, choice Home-
grown LILIES, LILIES OF THE VALLEY, Berlin
Crowns; 300 Lots of DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at their Rooms, 67
and 68, Cheapside, London, E.C., on MONDAY NEXT,
December 19, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Tuesday Next.—Importation of

LÆLIA PURPURATA from a new district. Superb plants
well-leaved, and with dormant eyes.
ODONTOGLOSSUM ALEXANDRE just to hand. Beautiful
ORCHIDS in FLOWER for Christmas decoration, &c.

MESSRS. PROTHEROE AND MORRIS will
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Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY
NEXT, December 20, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Japanese and Chinese Curios.

ANNUAL SALE of an important consignment, consisting of
PLATES, BOWLS, and VASES, and TETE-A-TETE
SERVICES in different Wares, CABINET, BRONZES,
SCREENS, and a Variety of other Articles useful for
Christmas Presents.

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SELL the above by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY,
December 20, at 12 o'clock.

On view day prior and morning of Sale, and Catalogues had.

Wednesday Next.

50,000 LILY OF THE VALLEY,
BERLIN CROWNS.

MESSRS. PROTHEROE AND MORRIS will
include the above in their LILY SALE on WEDNES-
DAY NEXT, December 21, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Wednesday Next.

2200 LILIUM AURATUM, 500 L. SPECIOSUM RUBRUM,
just received from Japan; 50,000 LILY OF THE
VALLEY, Berlin Crowns; Begonias, 200 Lots of DUTCH
BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY
NEXT, December 21, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS have
received instructions from F. Sander, St. Albans, to
SELL by AUCTION, at their Central Sale Rooms, 67 and 68,
Cheapside, E.C., on FRIDAY NEXT, Dec. 23, at half-past 12
o'clock, superb importations of a probably new type of

DENDROBIUM NOBILE,

FROM THE CHINA ASSAM FRONTIER.

Most distinct-looking and fine plants. Among them a good
many splendid masses.

Collected on the slopes of the LANGTANG MOUNTAINS,
whose heights are covered with perpetual snow.

Also from the same and hitherto untapped source, a fine lot
of VANDA CERULEA, with exceedingly large richly-lued
blossoms, and found growing on sparsely clothed, knarled, and
Dwarfish Trees, and at an unusual elevation.

Here, too, our Collector discovered a variety of
CYPRIPEDIUM INSIGNE,

Probably quite a new type.

The geographical range of the above three splendid and
popular plants is truly amazing, the district now covered
being a new surprise, and quite new to all.

We shall also offer quite a fine lot of the rare and lovely

LÆLIA ELEGANS;

The extraordinary and beautiful Octopus Orchid,

BRASSIA SUPERBISSIMA,

Whose petals frequently stretch to 2 feet across,
ONCIDIUM AMPLIATUM MAJUS, CATTLEYA SPECIES,
CYPRIPEDIUM LAWRENCEANUM, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.

300 AZALEA INDICA, including some very fine plant-; 100
A. MOLLIS, 33 RHODODENDRONS from Belgium, 40 lots
of FERNS from an English Nursery, LILY OF THE
VALLEY, Berlin Crowns, Hardy Border BULBS and
PLANTS in variety, and about 300 lots of DUTCH
BULBS.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY
NEXT, December 22, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Monday, Wednesday, and Thursday Next.

1000 lots of First-class DUTCH BULBS, comprising choice
Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas, from
reliable growers; Peonies, Gloxinias, Begonias, Anemone
Fulgens; 1000 Liliun Harris, L. candidum, Japanese
Liliums, &c.

MR. J. C. STEVENS will SELL the above
by AUCTION, at his Great Rooms, 38, King Street,
Covent Garden, W.C., on MONDAY, WEDNESDAY, and
THURSDAY NEXT, December 19, 21, and 22, at half-past 12
o'clock precisely.

On view mornings of Sale, and Catalogues had.

Wednesday Next.

Pyramid and Dwarf-trained FRUIT TREES, 200 Dwarf
ROSES, Hardy ORNAMENTAL SHRUBS and PLANTS,
also 800 Clumps of CYPRIPEDIUM SPECTABILE, and
500 C. ACAULE from America, 50,000 Best Berlin LILY
OF THE VALLEY Crowns, 2000 Clumps of same, 2000
SPIRÆA JAPONICA, &c.

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in his SALE by AUCTION, at his Great Rooms, 38, King
Street, Covent Garden, W.C., on WEDNESDAY NEXT,
December 21.

On view morning of Sale, and Catalogues had.

Thursday Next.

An Importation of LILIUMS from Japan, comprising 1000
extra grand Bulbs of L. auratum, 2000 smaller ditto, L.
Krameri, L. longiflorum eximium, L. speciosum album,
and L. s. rubrum in splendid condition.

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December 22.

On view morning of Sale, and Catalogues had.

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GENTLEMAN'S GARDEN or NURSERY, near
London. Plenty of Glass. Good Dwelling house and Stables.
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WANTED TO RENT, a GENTLEMAN'S
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Grounds, and discharge the duties of Steward or Bailiff.—
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Double-fronted Shop in a High Street, West End, doing £1000.
a year. All necessary tools included, shop nicely fitted up.
Business to be had for £200.—Apply to A. HARRISON, 7,
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TO BE LET, an excellent FARM, situate
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TURAL MARKET GARDEN and ESTATE AUCTIONEERS and
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packed, £12 per 1000, cash.
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The following Catalogues free on application :—
Catalogue of beautiful flowering Bulbs for all seasons.
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List of rare and beautiful Croci and Meadow Saffrons.
COLLECTIONS OF BULBS, 10s. 6d., 21s., 42s., 63s., & upwards.
COLLECTIONS OF DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., to 105s.
Hyacinths, Tulips, Crocuses, Daffodils, Iris, Peonies, Lilies, &c.
BARR & SON, 12, King Street, Covent Garden, London, W.C.

EXHIBITION.

THE ROYAL CALEDONIAN HORTICUL-
TURAL SOCIETY.—The FLOWER SHOWS of this
Society, for 1893, will be held in the Waverley Market,
Edinburgh, on April 5 and 6, July 12 and 13, and September
13 and 14.

BOURNEMOUTH CHRYSANTHEMUM and
HORTICULTURAL SOCIETY.

The SEVENTH ANNUAL EXHIBITION will be held on
November 8 and 9, 1893.

JAMES SPONG, Secretary,
Lindisfarne Gardens, Bournemouth.

BRISTOL CHRYSANTHEMUM and
SPRING SHOW SOCIETY announce that their Next
SHOW will be held on WEDNESDAY and THURSDAY,
November 15 and 16, 1893.

EDWIN G. COOPER, Secretary.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to SANDER'S, St. Albans. The finest
stock of Orchids in the World.—30 minutes from St. Pancras.

NEW ARCHANGEL MATS.—9 feet by
4 feet 6 inches, 10s. for 10; 90s. per 100.
WM. DARLINGTON, Askew Street, Hackney, London, E.

SEAKALE CROWNS for Forcing, extra
strong, selected, 12s. per 100. Also 20 large PEACH
TREES, best sorts, young and well trained, 6 to 12 feet high.
Will be sold cheap. For particulars, apply—
J. FANNING, Crauford Gardens, Bath Road, Hounslow.

CHRYSANTHEMUMS.—Best sorts, true to
name. Strong Cuttings from 1s. 6d. per dozen; 10s. per
100. Many valuable Prizes have been taken by my Customers
during the past fourteen years.—CATALOGUE two stamps, of
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RASPBERRY CANES.—Norwich Wonder
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CURRANT TREES (strong, 3-yr. old), 2s. 6d. per dozen, 10s.
per 100. Free on Rail. Postal Order with Order.
R. H. BATH, Osborne Farm, Wisbech.

Standard Cherries.

CHARLES TURNER can offer the above,
with strong straight stems, 6 feet and over.
The Royal Nurseries, Slough.

200,000 LILY OF THE VALLEY, for
Forcing. Prime Crowns, 21s. per 1000
free packing and free on board, Hamburg.
NICLAUS CARSTENS, Curslack, near Hamburg, Germany

CHRYSANTHEMUM CUTTINGS.—Madame
Desgranges, 12s. per 1000; Bronze and good Yellow, 10s.
per 1000. Also strong Cuttings of best show varieties of the
newest varieties, 1s. per dozen.
CHIPPERFIELD, Thames Valley Nursery, Hampton Hill.

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Baroness, Merville de Lyon, Cheshunt Hybrid, Duke of
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all splendid bushy plants.—GREEN: 9 in. to
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to 18 in., at 50s. per 100; 18 in. to 21 in., at 70s. per 100; 21 in.
to 24 in., at 95s. per 100; 30 to 40 in. at special prices.
GOLDEN: 5 in. to 12 in., at 4s. to 9s. per doz. Cash with
Order. J. J. CLARK, Goldstone, Brighton.

Chrysanthemums.

ROBERT OWEN, F.N.C.S., Floral Nursery,
Maidenhead, Importer, Raiser, and Grower of
NEW and CHOICE CHRYSANTHEMUMS.

The Largest and Best Collection in Europe.

Awarded 150 First-class Certificates and Eight Medals.

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All Latest Novelties distributed in early Spring.

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(JOHN COWAN), Limited,

THE VINEYARD AND NURSERIES,
CARSTON, NEAR LIVERPOOL.

Have this season splendid stocks of the following :

GRAPE VINES,

For fruiting in pots and planting Vineries.

TEA and other ROSES, in pots.

ERICAS, AZALEAS, PALMS,
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UNUSUALLY IMPORTANT SALE. ABSOLUTELY WITHOUT RESERVE.

MESSRS. PROTHEROE & MORRIS

Are honoured with Instructions from the Executors of His Grace the DUKE OF MARLBOROUGH, deceased, to
SELL by AUCTION, WITHOUT RESERVE, on the PREMISES—

BLenheim PALACE GARDENS, near WOODSTOCK, on MONDAY, December 19, and Following Days,
Commencing at 12 o'clock to the minute each day, the entire Collection of about—

25,000 ESTABLISHED ORCHIDS,

One of the most attractive Sales that has ever taken place, remarkable especially for the unprecedented quantity of Specimen Plants, the large number of fine varieties, and their generally healthy condition. Amongst the many thousands to be sold may be specially mentioned:—

15,000 *Odontoglossum crispum*, the best known type, including about
10,000 growing in beds, lotted to suit large buyers.

- 800 " *Pescatorei*.
- 500 " *citrosimum*.
- 500 " *vexillarium*.
- 30 " *Harryanum*, many of them large pieces.
- 80 " *Insleayi* and *splendens*.
- 50 " *cirosimum*.
- 50 " *triumphans*.
- 100 " *grande*.
- 60 " *nebulosum*.
- Quantities of *Roezli*, *bictonense*, *blandum*, *Halli*, *Uro Skinneri*, and others. Also—
- " *luteo-purpureum*.
- " *Andersonianum*.
- " *Ruckerianum*.
- " *polyxanthum*.
- " *baphicanthum*.
- " *hebraicum*.
- 200 *Oncidium macranthum*, *hastiferum*, *undulatum*, *loxense*, and *superbiens*.
- 40 *Oncidium ornithorrhynchum*, *cheirophorum*, and others.
- 80 *Lælia anceps alba*, including several magnificent masses, many in spike.
- 100 " *anceps Morado*, *Barkeri*, and others.
- 50 " *purpurata*, mostly large pieces, and the finest of varieties.
- 30 " *harpophylla*, some of the grandest pieces ever seen.
- " *elegans*, *elegans Turneri*, *Marlboroughensis*, several very fine pieces.
- 200 *Cattleya Mendeli*, embracing many matchless specimens remarkable for their size and the magnificence of the varieties.
- 150 " *gigas*, and *gigas imperialis*, several of which are plants of enormous size, and of the best type.
- 90 " *Sanderiana*, some of which are very fine.
- 180 " *Gaskelliana*.
- 180 " *Mossiae*, some of which are remarkable pieces.
- 100 " *aurea* and *Dowiana*.
- 30 " *Lawrenceana*, embracing some wonderful specimens.
- 150 " *Trianae*, amongst which will be offered many large specimens and special varieties.
- 50 " *Percivaliana*.
- " *Warneri*, *Harrisoniae*, *Schroderae*, *citrina*, *picturata*, *Bowringiana*, *speciosissima*, *Skinneri alba*, *Skinneri* all in quantity, and many specimens amongst them.
- 3 *Cypripedium Morganæ*, 2 of which are very fine pieces.
- 18 " *grande*, mostly large plants.
- 20 " *Sanderiana*, nearly all plants of great size.
- " *selligerum majus*, several grand specimens.
- 25 " *caudatum*, some very large.
- " *Sedeni candidulum*, 6 splendid plants.
- " *cardinale*, fine specimen.
- " *Veitchi*, fine strong plant.

- Cypripedium Schroderi*, 2 fine plants.
- 25 " *Lawrenceanum*, mostly plants of large size.
- " *Elliottianum* (*Rothschildianum*), several exceptionally fine pieces.
- 20 " *hirsutissimum*, all fine pieces.
- 30 " *niveum*.
- 50 " *insigne*, *albo-marginatum*, *punctatum*, *violaceum*, *Maulei*, mostly specimens, fine for cutting.
- 15 " *Stonei*, wonderful specimens.
- " *œnanthum superbum*, strong plant.
- " *Spicerianum magnificum*, one large piece and several smaller plants.
- " *Harrisianum*, *Druryi*, and others.
- Uropedium Lindeni*.
- 36 *Vanda tricolor*, *suavis*, *insignis*, *cœrulea*, including many fine examples.
- 50 " *teres*, forming a bank of fine plants.
- 25 " *Hookeri*, a splendid lot of plants, mostly large pieces.
- 150 *Dendrobium Wardianum*, in various sizes.
- 125 " *Dearei*, a grand lot of plants.
- 50 " *nobile*.
- 50 " *fimbriatum* and *oculatum*.
- 75 " *thyrsiflorum*.
- 40 " *Brymerianum*.
- 30 " *heterocarpum*, also a good stock.
- " *filiforme*, *Ainsworthi*, *splendidissimum*, *nobile nobilius*, *formosum*, *Cambridgianum*, *suavissimum*, *chrysotoxum*, and others.
- 150 *Coelogyne cristata*, varieties, a grand lot of plants for cutting.
- " *Massangeana*.
- " *pandurata*, three fine pieces.
- Aerides expansum leonis*, large specimens.
- " *Lawrenceana*, a grand plant.
- 50 *Lycaste Skinneri*, including many large masses and fine varieties.
- Sobralia maorantha*, many large plants.
- " *xantholeuca*, three grand pieces.
- 50 *Cymbidium eburneum*, including plants of enormous size, all in grand condition; also fine plants of *Parishi*, *Dayana*, *Mastersii*, *Lowi*, and *giganteum*.
- 30 *Angraecum leonis*, mostly large plants.
- " *sesquipedale*, several fine pieces.
- 300 *Calanthe Veitchii*, *vestita*, *Regnieri*, and others.
- 30 *Anguloa Clowesii*, *Ruckeri*, *sanguinea*, and *uniflora*.
- 60 *Epidendrum vitellinum majus*, a fine healthy lot of plants.
- " *rhizophorum*, a group of fine plants.
- " *prismatocarpum*, remarkably fine specimen and best variety.
- 250 *Disa grandiflora*, best variety; an exceptionally fine lot, including many large masses.
- 200 *Phalænopsis Schilleriana*, *Sanderiana*, *Dayana*, *grandiflora aurea*, and *amabilis*, a well conditioned lot of plants, many extra large.
- 200 *Masdevalleas*, of sorts.
- Maxillaria grandiflora*, specimen plants.
- Dendrochilum glumaceum* and *filiforme*.
- 100 *Sophronitis grandiflora*, mostly in flower and beautifully grown.
- 30 *Ada aurantiaca*, including specimens of remarkable size and culture; and other Orchids too numerous to specify.

MAY BE VIEWED ANY DAY PRIOR TO THE SALE.

CATALOGUES, 1s. each, returnable to Purchasers, may be had on the Premises, of the Head Gardener, Mr. T. WHILLANS; and of the Auctioneers, Estate Agents, and Valuers, Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

N.B.—The SALE of the STOVE and GREENHOUSE PLANTS will take place on the Premises, on TUESDAY and WEDNESDAY, January 10 and 11, 1893.

SPECIAL TRADE OFFER,

at reduced prices, as follows, all fine healthy trees:—
500,000 RHODODENDRONS, from 2 to 3 feet.
ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 9 to 10 feet.
Mountain, 3 to 4 feet, 6 to 7 feet, 9 to 10 feet, 10 to 12 ft.
BEECH, Common, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 10 to 12 ft.
BIRCH, 9 to 10 feet, and 10 to 12 feet, fine.
CHESTNUTS, Horse, 3 to 4 feet, 5 to 6 ft., 8 to 9 ft., 9 to 10 ft.
ELM, 3 to 4 feet, 6 to 8 feet, 9 to 10 feet, stout.
LIMES, red twiggied, 6 to 7 feet, 8 to 9 feet, 9 to 10 feet.
PINES, Weymouth, from 2 to 6 feet, various sizes.
POPLARS, 3 to 4 feet, intermediate sizes up to 10 feet.
PRIVET, oval-leaf, 2 and 3 feet; evergreen, 3 to 4 feet.
THORN QUICK, many hundred thousand, from 4 to 6 years old, very strong; **SYCAMORE**, 6 to 10 feet; **LILACS**, **PINES**, Austrian, from 3 to 6 feet, fine trees; **AUCUBAS**, **LAURELS**; **HOLLIES**, various; **BERBERIS AQUIFOLIA**, 1½ to 2½ feet; **BOX**, **YEW**s; **ELDER**, golden; **IVIES**, and General NURSERY STOCK.
 For prices, &c., apply to **ISAAC MATTHEWS AND SON**, The Nurseries, Milton, Stoke-on-Trent.
 N.B.—Rhododendrons, early-flowering varieties, from 15 in. to 2½ feet, full of buds, at special low prices, for forcing. Over 500,000 to select from. Inspection invited.

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THE SEASON'S SENSATION.

Has this season been awarded Thirteen Certificates.

"THE PREMIER VARIETY OF THE YEAR."

THE MOST BEAUTIFUL VARIETY IN EXISTENCE.

Strong Plants, 7s. 6d. each.

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EARLIEST of all EARLIES.

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 Apply to
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BARE and **UNSIGHTLY WALLS** in Green-houses, Porches, &c., may be luxuriantly covered with Ferns, Foliage, and Blooms, by using our **WALL TILE TROUGHS** and **PLANT BOXES** (Patent). Easily fixed and universally adopted, entirely superseding Wire Netting and Corkwork. Photograph of our Tiled Wall of Fern, 110 feet long, and **LISTS** on application. Ferns and Soil supplied. Try our **Scintless PLANT FEEDERS** (Patent Compressed), 1s. per 100;—**A. BOOTH AND CO.**, 18, Bride Lane, London, E.C.

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SMALL SHRUBS and CONIFERÆ.—**Abies** **Albertii**, 2-yr., 6 to 8 inches, 4s. per 100; **A. Douglasii**, 1-yr., 20s. per 1000; do., 1-yr., 1-yr. transplanted, 6 to 8 inch, 4s. per 100; **A. orientalis**, 2-yr. transplanted, 30s. per 1000; **Black A. Spruce**, 2-yr. transplanted, 6 to 9 inch, 30s. per 1000; **Cupressus macrocarpa**, 1-yr., fine, 20s. per 1000; do., transplanted, 8 to 9 inch, 8s. per 100; **Grass Pampas**, fine, 30s. per 1000; **Aucuba japonica**, green, 6 inch, 8s. per 100; **Cedrus deodara**, 1-yr., 6s. per 100; Ivy, Irish, 2-yr., 4s.; **Jasminum**, white, 6s. per 100; **Lilac**, purple, 3-yr., 4s. per 100; **Laurestinus**, 6 to 8 inch, 7s. per 100; **Laurel Colchic**, 1-yr., 25s. per 1000; **Olearia Haastii**, 6 inch, 8s. per 100; **Pinus cembra**, transplanted, 6 to 9 inch, 40s. per 1000; **P. Nordmannia**, 2-yr., 2-yr. transplanted, 6s. per 100; **P. nobilis**, 2-yr., 12-year transplanted, 6s. per 100; **Pittosporum undulatum**, fine, transplanted, 8 inch, 12s. per 100; **Privets**, oval, 8 to 9 inch, 8s. per 1000; do., golden, new, 8s. per 100; **Rhododendron ponticum**, 4 to 6 inch, 40s. per 1000; do., 6 to 8 inch, 60s. per 1000; **Thuya Lobbi**, 10 to 12 inch, 40s. per 1000; do., 15 to 18 inch, 50s. per 1000; **Veronica Traversii**, 9 inch, 8s. per 100; **V. Pingifolia**, 9 inch, 10s. per 100; **Yew**, English, 3-yr., 25s. per 1000; **Yucca gloriosa**, pots, 9 to 10 inch, 12s. per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

DOBBIE'S CATALOGUE AND COMPETITORS' GUIDE for 1893.—The 26th Annual Edition will be published at Christmas. A great authority says:—"As a trustworthy Guide, it is vastly ahead of ordinary catalogues." 160 pages of closely-printed matter, invaluable to all amateur and professional growers. The price to non-customers is 4d., post-free, and early application is necessary.
DOBBIE AND CO., Seed Growers and Florists, Rothsay.

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—For forcing, this is really grand stuff. Sample only need be sent for to ensure order. Special quotations for large quantities. **STRAWBERRIES**, Sir Joseph Paxton, in 60-size pots, Laxton's Noble, strong runners. **CHRYSANTHEMUMS**, strong cuttings, Jardin des Plantes, Elaine, Source d'Or. Very large **RHUBARB CROWNS**, for forcing. Prices on application.
W. BAGLEY, Millshot Farm, Fulham.

FLOWERING THORNS.

Double Scarlet, Double Pink, and Single Scarlet. Standards, 1s. 6d. each, 15s. per dozen; Pyramids or Buses, 9s. to 18s. per dozen, 50s. to 75s. per 100; extra large, 100s. to 120s. per 100.

H. LANE AND SON, Nurseries, Berkhamsted, Herts.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of **LILIES** OF THE VALLEY in the Kingdom, offers 3-year-old flowering Crowns for forcing, and 2 and 1-year-old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

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JAPANESE.—Robert Owen, Viscountess Hambleden, Mrs. Bruce Findlay, Middleton Clarke, Thomas Hewitt, W. H. Lincoln Improved, General Hawkes, Lady Brooke, Mrs. C. Myers, and Vesuvius.

INCURVED.—Baron Hirsch, Henry Perkins, Lucy Kendall, Mrs. Mitchell, Brookleigh Gem, and George Cockburn.

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Delivered in London FREE,

NOW READY FOR SHIPMENT.

No. 1, ranging from 4 to 6 inches in circumference,
£2 per 1000.

Remittance to accompany Order.

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Best quality and workmanship, 2 inches thick, 6 ft. by 4 ft., iron bar across and very strong, 4s. 6d. each, 50s. doz., £10 for 50 lights, free on rail in London. Cash or reference with order.

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Timber sufficient to build 100 feet by 12 feet house, lights, door, &c. Put on rail in London. Price, £9 10s. Send for detailed specification, to

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MOTOR PUMP
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Will raise
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VEITCH'S GENUINE SEEDS.



JAMES VEITCH & SONS

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Has now been Posted to all their Customers. Anyone not having received the same,
a Duplicate Copy will immediately be forwarded, post-free on application.

ROYAL EXOTIC NURSERY, CHELSEA, LONDON, S.W.

CÆLOGYNE CRISTATA, well-grown, with
flower-spikes; also the **CHATSWORTH, TRENTHAM**,
and **MAXIMA VARIETIES**, cheap.
TRUSTEES late J. STEVENSON, Timperley, Cheshire.

10,000—Roses—10,000.

DWARF H.P.—Well-grown, and good
Varieties.

Purchaser's Selection, 35s. per 100; £15 10s. per 1000.
My Selection, 32s. per 100; £14 per 1000.

Cash with Order. Packing free.

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FOR SALE, 3000 first-class good **TURVES**
of an Old Meadow. The soil is of a rich loamy nature.
6s. per 100, cut; 5s. per 100, uncut; samples on application.
Also, 1000 Red **CURRENTS**, La Versailles, three years old,
£5 10s. per 1000, 16s. per 100, 2s. 6d. per dozen; and a few
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CURRENTS. Cash with Order. Apply to the GARDENERS,
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ASPARAGUS, of fine quality—for Forcing,
5-yr. old, splendid roots, 12s. 6d. per 100, free on rail;
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Read the following unsolicited testimonial:—"Please send
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my employer says the quality is excellent.—C. H. PERKINS,
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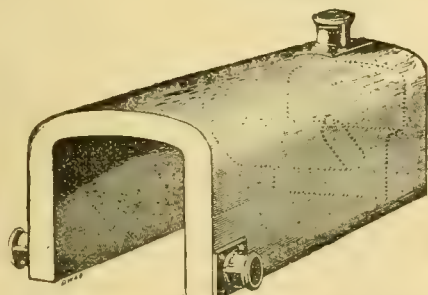
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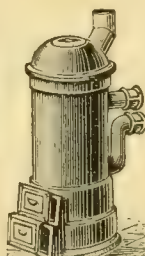
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BOILERS OF ALL MAKES AND SIZES SUPPLIED AT THE CHEAPEST RATES.



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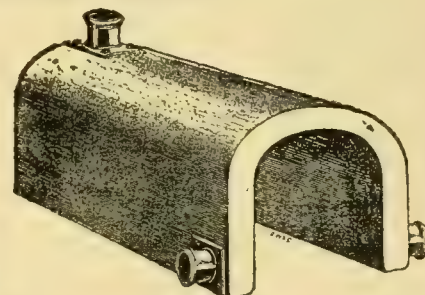
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To heat from 100 to 300 feet of 4-inch piping.

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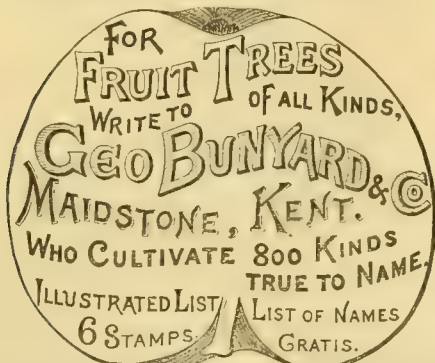
ROSES and VINES
OF UNSURPASSED QUALITY.
INSPECTION INVITED.

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The Nurseries, BUSH HILL PARK, N.

FOREST TREES, &c.—Alder, 2 to 3 feet, 16s. per 1000; 4 to 5 feet, 25s. per 1000. Ash, common, 1½ to 2 feet, 12s.; 2 to 3 feet, 16s.; 3 to 4 feet, 20s. Beech, 1½ feet, 11s.; 2 feet, 16s.; 2½ to 3 feet, 20s.; 3 to 4 feet, 24s. Chestnut, Horse, 2 to 3 feet, 20s. per 1000. Spanish Chestnuts, 1½ to 2 feet, 16s. Larch, 12 to 15 inches, 14s.; 1½ to 2 feet, 20s.; 2 to 2½ feet, 26s. Spruce Fir, 12 to 18 inches, 14s.; 1½ to 2 feet, 16s. Scotch Fir, 2-yr. tr., 18s. Silver Fir, 3-yr. tr., 20s. Hazels, 2 to 3 feet, 20s. Oak, 2 feet, 16s.; 2½ to 3 feet, 20s. P. austriaca, 2-yr. tr., 16s. P. Laricio, 2-yr. tr., 20s. Privets, Oval, 2 to 2½ feet, 26s. Sycamore, 2 feet, 12s.; 2½ feet, 16s.; 4 to 5 feet, 4s. per 100; 6 to 7 feet, 7s. per 100; 12 feet, fine, 24s. per 100. Thorns, 12 to 18 inches, 6s.; 2 feet, 8s.; 2½ feet, 10s.; 3 feet, 12s.; 3½ to 4 feet, 14s.; 4 to 5 feet, 22s.

GARLES MITCHELL, Nurseryman, Stranraer.



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GARDEN SEEDS—FARM SEEDS



WE have completed Harvesting our Crops of

GARDEN SEEDS, &c.,
and will be glad to make Special Offers on application.

CHARLES SHARPE & CO.,
SEED GROWERS, SLEAFORD,
LINCOLNSHIRE.

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Invites an inspection from intending Planters to the following well-grown TREES, having stout, clean stems, with handsomely-furnished, well-balanced heads, and from frequently transplanting are splendidly rooted; the girth of the stem is taken at 4 feet from the ground:—

ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
" WIERI LACINIATUM, 10 to 14 feet, girth 3 to 5 inch.
" NEGUNDO VARIEGATUM, Standards, 8 to 10 feet.
" REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.
" SCHWEDLERI, 12 to 18 feet, girth 4 to 5 inches.
" WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.
CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
" Double White, 14 to 16 feet, girth 6 to 8 inches.
" Scarlet, 12 to 18 feet, girth 4 to 10 inches.
" Spanish, 12 to 14 feet, girth 4 to 5 inches.
ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
" Guernsey, 16 to 18 feet, girth 7 to 9 inches.
LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
" EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.
" Silver-leaved (Tilia argentea), 12 to 14 feet, girth 5 to 6 inches.
LIQUIDAMBAR, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 12 to 14 feet, girth 4 to 5 inches.
" Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
PLANES (English-grown), 12 to 16 feet, girth 4 to 6 inches.
POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
" Purple, 14 to 16 feet, girth 6 to 7 inches.
THORNS, Double Pink, 8 to 10 feet.
" " Scarlet, 8 to 10 feet.
" " White, 8 to 10 feet.
TULIP TREES, 8 to 10 feet.
WALNUT, Common, 10 to 12 feet.

WEeping TREES.

BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
" Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
" Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 8 to 10 feet.
POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
KNAP HILL NURSERY, WOKING, SURREY.

NEW CHRYSANTHEMUMS.

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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 17, 1892.

THE FRUIT GARDENS,
BARHAM COURT.

THESE are situated in the valley of the Medway, about four miles from Maidstone and one mile from Watlington station, and have for many years been celebrated for the fine fruit they have produced. This must be very gratifying to the owner, Roger Leigh, Esq., who has spent a large sum of money in making these gardens, and furnishing them with the best kinds of fruit trees. Much of the planting was done under the superintendence of the late Mr. Haycock in 1872 and the following years; but some of the trees at present in bearing were planted previous to that date, and were fruiting even then, at which time and for several years after they were trained in a variety of French styles, some as oblique cordons, some as horizontal cordons, and many in other forms, affording splendid fruits at that time. Unfortunately, the progress of events has not been altogether favourable to these gardens, and a much larger crop is now required, but fewer men are employed. Mr. Woodward has, therefore, been compelled to allow the trees to grow more naturally; some of the low horizontal cordons have developed into espaliers, some of the espaliers trained on wires, have gone far above the supports, and developed small heads; but notwithstanding this, the fruit leaves nothing to be desired, either in size or colour, although some of the trees at the time of my visit in the early autumn of the current year, were carrying a heavy crop. I noticed especially a cordon Alexander Apple which had grown up in this manner, and the crop that it bore was remarkable for the variety, even in fruitful Kent. Trees of Doyenné Boussoch and Pitmaston Duchess Pears were also fruiting in the same manner, but the majority of the Pears are in an unsuitable soil, chiefly owing to the bottom spit having been brought to the top when the trenching was done, now, many years ago; whilst those which Mr. Woodward has planted since that time without trenching the ground are doing well. These are chiefly the oblique cordons on the walls, which are, with one or two exceptions, worked on the Quince stock, and plenty of stones are laid on the surface which keep the soil moist and cool, the situation being rather too dry for the Pear; and although the fruit—especially on the wall—cordons was very fine, it was evidently an arduous task to grow the fruits to a large size.

One fruit of Pitmaston Duchess, weighed in my presence, brought down the scale at 1 lb. 11½ oz.; it had been gathered several days, and I have no doubt weighed fully 1½ lb. when first taken off

the tree, as I find these large fruits lose weight considerably while ripening. Williams' Bon Chrétien was past its best at the time of my visit, but several fruits remained that were as large as Pitmaston Duchess in many places. Doyenné du Comice was carrying a fine crop. Mr. Woodward considers this the best of all Pears. Doyenné Boussoch was remarkable for its fine colour and size. Beurré Hardy had given some fine fruit, but the variety is as shy a bearer here as in some other places. Triomphe de Vienne had some very large fruit nearly ripe, and was very fine looking. Beurré d'Amanlis was both large and of good flavour, a very useful Pear, as it generally bears well. Other good varieties were Princess, Louise Bonne of Jersey, and Marie Louise; the latter being one of the best flavoured, but cannot be got to grow as large as many of the above-named varieties. Many trees of Bergamotte d'Esperen had been cut back and grafted with Pitmaston Duchess, and these bore very large fruits; and as showing the influence the scion has on the stock, or possibly the effects of the wounds caused by grafting, the stock was in some instances carrying fruit below the union which were much larger and better than ever they were before. On some of the scions, too, the fruits were almost ripe, while others on the same tree, against a west wall, had fruits which were hard and green—a condition due probably to the flow of sap being more copious at some of the unions than in others. The Japan Pear had proved to be of poor quality, and had been cut back and grafted with one of the above varieties.

The Apples, however, are the chief feature at Barham, and at the time of my visit, some of the finest fruit of one variety, viz., Peasgood's Nonsuch, had decayed. Mr. Woodward considered this due to the insect agency, as it is an Apple with very tender flesh, and soon rots if injured. Some fruits of Golden Noble, which is one of our best varieties, weighed about 1 lb., but is not generally seen of a very large size. A good many trees of Alexander are grown, a variety that is a favourite here, and no wonder either, seeing what splendid fruit it produces. Wadhurst Pippin is not so widely known as some others that I have mentioned. Some trees of this variety were carrying very large fruit; it looks likely to prove a better keeper than some other Apples of large size. Golden Spire here crops well every season on bushes, and is a very useful Apple, fetching a good price in the market. Queen Caroline is a pretty, clear yellow-skinned fruit, and a good bearer, and good as a culinary fruit. Washington was carrying some enormous fruit on bushes, and it was of an unusually high colour, reminding me of fruit grown in an orchard-house. Mère de Ménage was not carrying a heavy crop, but the fruits were very fine; this variety does not do well in some places, being probably of tenderer constitution. Cox's Pomona, on an espalier, was carrying a heavy crop of fruit of a splendid colour. It faced the west; it is a trustworthy bearer, of fair size, and it looks just the fruit for market. Lane's Prince Albert seems to do well everywhere, and it was fruiting heavily on young standards. Loddington, or Stone's, is a variety that does not succeed with everybody, but nothing could do better than it does here, and a large number of trees are grown, all being heavily laden. Mr. Woodward attributes his success with this variety to his planting it in very firm soil, manure being applied when necessary, by opening a trench near the ends of the roots, and burying it there. I saw some fine large trees

of Loddington in another Kent orchard, which were carrying a very heavy crop. They had been cut-back and grafted about thirty years ago, and they very seldom miss bearing; it is a much better keeper than Ecklinville, and resembles it for size and cooking qualities. Worcester Pearmain was nearly out of season, a few very large fruit of it remained which were perfect in colour. Lord Derby was still very green, but it promised to give some grand fruit; the same may be said of Belle Dubois, Annie Elizabeth, and Waltham Abbey. The fruit of New Hawthornden had been gathered, and some of the fruit seen in the fruit-room were very large. Cox's Orange Pippin was so large and highly coloured as to be scarcely recognisable at the first glance. Ecklinville Seedling and Grenadier are grown in quantity, but the bulk had been sent to market before I came—a few enormous specimens were still to be seen. The foregoing list contains the names of the finest Apples and Pears in this collection at the time of my visit—about one hundred kinds are grown altogether.

The whole secret of the growth of this splendid fruit consists in a free healthy growth of the trees, well thinned out, therefore well ripened; judicious feeding with farmyard and chemical manures when the crop of fruit or the state of growth requires it, firm soil without deep digging, manure being put in trenches near the roots when required. The soil is stirred and kept clean among the trees during summer by hoeing, but no weeds are taken away; they are drawn together in the centre of the rows in the autumn, allowed to decay, and then spread again—there is no waste of fertility by this system. The Apples are planted a good distance apart, and the under bushes consist principally of Currants. The soil is a good loam resting on limestone, with a gentle slope to the south, and the climate is favourable for developing colour and good flavour. The neighbourhood generally is less than 100 feet above sea-level, and I must not omit to add, the crop is thinned carefully when extra large specimens are desired.

Some very fine Peaches were noticed on the south and west walls; Lord Palmerston had a heavy crop of fine fruit, and was good in colour. Sea Eagle was very large, growing on a south wall under a wide glass coping. Mr. Woodward speaks very highly of this variety, and it evidently deserves all that he said in its favour. The Nectarine Peach on a west aspect was carrying a heavy crop, remarkably good in colour. Princess of Wales also had some very fine fruit. The indoor Peaches had been finished for some time. Standard trees are grown in a large span-roofed house planted down the centre, and are preferred to trellis trees on account of the heavy crop they bear, and the small amount of labour required for pruning and training.

In the other house I noticed a fine crop of Tomatos of a very large variety not yet in commerce, but well worth growing for its good colour and heavy cropping qualities. These are grown in succession to the forced Strawberries, of which some 2000 plants were being prepared for next spring, and looked very healthy and strong. In another house was a large batch of Cypripedium insigne, which will give a fine lot of flowers by-and-by, and outside was a nice lot of Mrs. Sinkins Pink in pots. This is grown for early forcing here, and proves very useful. Some nice plants for decorative purposes are grown in quantity, but the principal plant houses and the flower gardens are now under separate management, and time was too short for me to see them, and I had to hurry away with many thanks to Mr. Woodward for his courtesy and

kindness, and much regret at leaving such a splendid collection of fruit. *W. H. Divers, Ketton Hall Gardens, Stamford.*

NEW OR NOTEWORTHY PLANTS.

DISA STAIRSII, n. sp.*

THIS plant was collected by W. Grant Stairs, Esq., on Mr. Stanley's last great expedition in 1889. As we can only judge from descriptions, this new *Disa* must be placed near *Disa hircicornis*, Rchb. f., and *Disa Walleri*, Rchb. f., both of East African origin, and belongs to that group of species of which *Disa polygonoides* is the best-known representative. I refrain from repeating all the characters given in the Latin description. The general habit of this very nice plant is about the same as that of our British *Orchis laxiflora*, the flowers being of about the same size, and, as much as I could judge from a dried specimen, also of the same or a very similar colour. I received an authentic specimen (No. 51) of the collector from Professor G. Schweinfurth. *Dr. Kränzlin.*

KEW NOTES.

THE following extracts are taken from the *Kew Bulletin*—

Under the title of "Hardy Species of *Eucalyptus*," mention was lately made in the *Kew Bulletin* (1889, p. 61) of seeds of *Eucalyptus globulus* received from Mr. Abbott of the Botanic Gardens, Tasmania, and collected from trees growing at high altitudes, and accustomed to be exposed to severe frosts. It was hoped that plants raised from these seeds would be likely to bear with impunity the rigours of an English winter. The seeds germinated very freely at Kew, and when the plants were strong enough, they were put out in a sheltered bay in the arboretum nursery in the middle of summer, in order that they might become established before the approach of winter. The result of the experiment in this particular instance was disappointing. The first hard frosts in 1889 so severely injured them that, notwithstanding the protection they afterwards received from a canvas screen, they all succumbed before the winter was over. At Kew these seedlings from Blue Gum trees accustomed to severe frosts in Tasmania were, if anything, not so hardy as those of the ordinary forms of *Eucalyptus globulus*. A similar result has to be recorded with plants raised from seeds of *Eucalyptus coccifera*, received at the same time from Tasmania, "from trees which were coated with icicles a foot long."

BERMUDA LILIES.

It is pleasurable to record that the services rendered by Kew to the colonies is recognised by private persons, as well as through official channels. It will be remembered that in 1887 an exhaustive enquiry was made, under the auspices of Kew, into the Onion disease at Bermuda (*Kew Bulletin*, October, 1887). The cultivation of Onions is one of the principal industries of the colony, and the threatened destruction of the Onion crop was regarded by the people as a matter of grave concern. The inquiry made by Mr. Arthur Shipley, F.L.S., established the fact that the disease was caused by a parasitic fungus (*Peronospora Schleideniana*) allied to the well-known Potato blight. The remedial measures suggested by Mr. Shipley were practical,

* *Disa Stairsii*, n. sp.—Sepalo dorsali obtusissimo galeato antice subclauso, calcaris genuflexo tenui duas ovarii partes sequante (extenso ovario sublongiore); petalis late ovatis sub galea omnino absconditis obtuse acutis; sepalis lateralibus deflexis divergentibus obovatis involutis antice obtusis apiculatisque; labello lineari-ligulato obtuso sepalis aequilongo multo tamen angustiore.—Planta valida certissime bipedalis; folia linearia v. lineari-lanceolata acuminatissima 20 cm. longa ad 2 cm. lata, in bracteas similes decrescentia; spica longiuscula multiflora basi laxiflora ad 15 cm. longa; bractee lanceolatae aristatae sub anthesi floribus paulo (arista) longiores basiales floribus multo longiores; flores 1–2 cm. alti, purpurei; labellum certissime pallidius. In monte Buanzari Africæ orientalis colleg. W. Grant Stairs, v. cl.

and it is hoped the disease is now well within the control of the cultivators. Besides Onions, Bermuda is also noted for the cultivation of Lilies (*Lilium longiflorum* var. *Harrisii*), and from Mr. W. T. James, one of the largest growers of these beautiful plants, Kew has received, in recognition of its services, a yearly present of bulbs for the decoration of its conservatories. These plants have proved of striking interest to visitors, and have been greatly admired.

ACANTHORHIZA ACULEATA, Wendl.

The large specimen of this Palm in the Palm-house, probably the largest in Europe, is now flowering for the first time. It has a stem 26 feet high, 23 inches in circumference near the base, which is clothed to a height of 1 foot above the ground with the curious spinous roots peculiar to the genus. The head is about 10 feet high, and is composed of about fifty leaves, which are orbicular

lector for the Royal Horticultural Society, and that, "it is also perhaps a native of Natal." In his recently-published *Handbook of Iridæ*, Mr. Baker says under this species, "Habitat, Transkeian Kaffraria, not certainly indigenous. Said by Herbert to be a native of Madagascar, but none of the recent collectors have found it there. Its nearest affinity is with *G. floribundus*." According to Herbert, *G. oppositiflorus* is one of the parents of *G. gandaensis*, the other being *G. psittacinus*. *G. oppositiflorus* is now in flower at Kew. It is over 6 feet in height, the leaves are stout and ensiform, and the flowers, which are arranged on a spike 2 feet long, are 2½ inches across, the segments wavy and recurved, pure white, with lines of amethyst.

CYCADS AT KEW.

The collection of Cycadaceæ at Kew is the richest in existence, and many of the specimens are very large and of great age. A considerable number of

Sir Joseph Hooker has stated, "partly to the impossibility of determining them till they flower, and partly to the practice that prevails of attaching provisional names to seedlings which are unrecognisable both as to genus and species when in that state." (*Kew Report*, 1882, p. 10.) The houses at Kew afford exceptional facilities for the growth of most Palms to a large size, and as these flower they are carefully examined, and, if of sufficient interest, a figure of them is prepared for publication in the *Botanical Magazine*; since 1875 no fewer than nineteen species of Palms have been figured and described in this publication from specimens flowered at Kew. The following species are now in flower in the various houses:—*Acanthophoenix Cunninghamii*, *Caryota Cummingii*, *C. furfuracea*, *Chamædorea polita*, *C. pulchella*, *C. wobbstiana*, *C. Wendlandii*, *C. scandens*, *Chamærops humilis*, *Didymosperma nanum*, *Howea Forsteriana*, *Livistona chinensis*, *Pinanga Kuhlîi*, *P. patula*, *P. Smithii*, *Sabal Blackburniana*, *Stenersonia grandifolia*, *Synechanthus fibrosus*, *Trachycarpus excelsus*, *Wallichia densiflora*.

COLEUS TUBEROSUS, Benth.

A plant believed to be this species (= *Plectranthus tuberosus*, Bl.) is cultivated in Java for the sake of its edible tubers. The same, or a closely-allied tuberous Labiate (*Coleus parviflorus*, Benth.), is said to be cultivated also in Ceylon. Recently, tubers of the Java plant were obtained from Dr. Treub, director of the Botanical Gardens, Buitenzorg, and grown at Kew. The tubers were planted in an open border during the summer, and the crop was reaped in the middle of October. The tubers were fairly numerous, but small. They consisted of fleshy bodies, broad at the top, and narrowing gradually to a point. They were of a light-brown colour, and averaging in size about 1½ inch long, and 1 inch in diameter. It is probable that the tubers attain a larger size in the tropics. A further trial will be made next year, and in a more sandy soil. When a sufficient number of the tubers has been raised at Kew, they will be distributed for trial in the lowlands of West Africa and the West Indies, where the ordinary Potato, for which the *Coleus* tubers are said to be a substitute, cannot be successfully cultivated. A tuberous labiate (*Plectranthus madagascariensis*, Benth.), described in Baker's *Flora of Mauritius and the Seychelles*, p. 258, is occasionally cultivated in Madagascar and Mauritius. In the latter island it is known as Oumime or Houmime. This plant has a wide distribution, and is found also in Arabia Felix and Natal. In November, 1887, Kew received from Mr. Medley Wood, A.L.S., Curator of the Botanic Gardens at Durban, Natal, tubers of two varieties or species of *Plectranthus*, known locally as "Kaffir Potato." We have botanical specimens of these plants in the herbarium (Natal, 646 and 3633), and they are evidently quite distinct from *Plectranthus madagascariensis*. A specimen just to hand in the Transvaal collections of Mr. Galpin agrees with Mr. Wood's specimens from Natal. The tubers received by MM. Pallieux and Bois from the Transvaal under the name of "Matambala," and referred by them to *Coleus tuberosus* (*Revue des Sciences Naturelles Appliquées*, 1891, p. 684), may prove to be identical with the "Kaffir Potato" (*Plectranthus* sp.) of Mr. Medley Wood, or even with *Plectranthus madagascariensis*. In any case, they have been distributed from Paris to the Gaboon and other French colonies, and are said to thrive there extremely well. *Kew Bulletin*.

IRIS HISTRIO.

We subjoin an illustration of this plant, which was originally described in the *Botanische Zeitung*, 1871, by Professor Reichenbach, and which was figured in the *Garden*, t. 653, f. 1, and in the *Botanical Magazine*, t. 6033. It is a native of Mount Lebanon, whence it was introduced into cultivation about 1873. Mr. Baker, in his *Handbook of Iridaceæ*, considers it scarcely more than a variety of *Iris reticulata*, but as exhibited by Messrs. Ware on

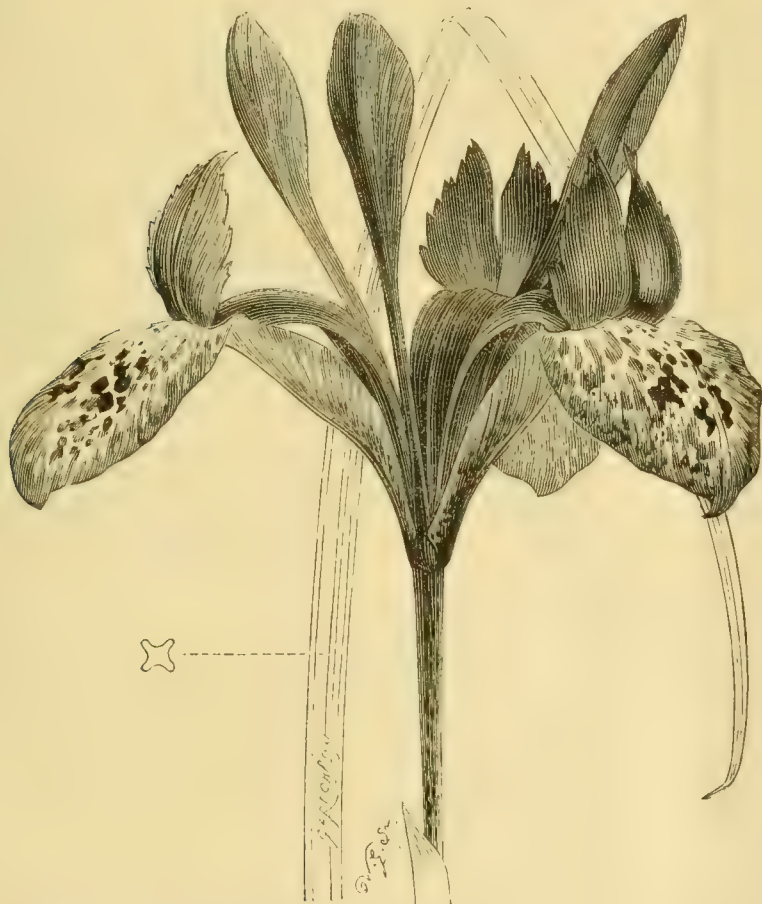


FIG. 111.—IRIS HISTRIO: FLOWERS, PALE BLUE AND WHITE, WITH PURPLE SPOTS AND GOLDEN BLOTCHES.

palmate, 5 feet in diameter, dark green above, silvery below, split nearly to the base into about sixty segments. The petioles are 3 feet long, unarmed, the margins clothed with white thread-like fibres, 9 inches or more long. The inflorescence is a branched drooping dense panicle of white flowers, which are hermaphrodite. A figure of the plant has been prepared for the *Botanical Magazine*. The species is a native of Central America. It has also been called *Chamærops stauracantha* and *Thrinax aculeata*. The other species of this genus, viz., *Acanthorhiza arborea*, is also in cultivation at Kew.

GLADIOLUS OPPOSITIFLORUS.

Corms of this interesting plant were sent to Kew in July last by Professor MacOwan, F.L.S., Government Botanist at Cape Town, who obtained them from the Transkei, where it is said to be common about the Kei River. The species was described by Herbert in Lindley's *Botanical Register* in 1842, who says it was found in Madagascar by Forbes, a col-

them have developed cones this year, thereby adding to the attractions of the Palm-house, wherein most of the Cycads are grown, as well as affording exceptional opportunities for the study of the order. A collection of the fresh cones and leaves of all the genera was sent from Kew to illustrate the lecture on Cycads given a few weeks ago by W. Carruthers, Esq., F.R.S., before the Royal Horticultural Society. The species which have coned in 1892 are: *Dioon edule*, *D. spinulosum*, *Ceratozamia mexicana*, *C. Miqueliana*, *Zamia muricata*, *Z. Skinneri*, *Macrozamia spiralis*, *M. Fraseri*, *Encephalartos villosus*, *E. Caffer*, *E. Altensteinii*, *Stangeria paradoxa*, *Bownia spectabilis*, *Cycas circinalis*, and *C. revoluta*—male and female cones.

PALMS IN FLOWER AT KEW.

Although Palms have always been in favour with cultivators, and this popularity has largely increased in recent years, their nomenclature, especially in gardens, is considerably confused. This is owing, as

Tuesday last at the Royal Horticultural Society, and as communicated to us a few days previously by the same firm, it is of a much paler lavender colour than is usual in *I. reticulata*. Our figure, from a drawing by Mr. W. G. Smith, gives a good notion of the flower. The sepals are marked with darker spots and golden-coloured veins. It is a charming pot plant for the greenhouse or cold frame, and flowering, as it does, at this season, it will be highly prized. Like *I. reticulata*, this has a small, egg-shaped corm, from which the linear sharply-angled leaves proceed, together with the flowers. The pots of this plant shown by Messrs. Ware constituted one of the novelties of the excellent show at the Royal Horticultural Society on Tuesday last, when most people, we imagine, were surprised to see so fine and interesting a display in mid-December.

ORCHID NOTES AND GLEANINGS.

FLOWERING OF *CATTLEYA ALEXANDRÆ*.

SEEING in your recent issue that Messrs. Linden, of Brussels, have flowered the remarkable *Cattleya Alexandræ*, it is with some degree of pleasure that I am enabled to say that it flowered here four days before the Birmingham show. It is a very useful flower for a buttonhole, and it was worn as such at the Birmingham show. Mine is a good form of it, as it quite represents and confirms the indications of the ideas as originally stated in the *Gardeners' Chronicle*. We have a grand collection of Orchids for so small a place. *C. Sims*, *Gardener to Saint Hill Pearce, Esq., Brierly Hill, Staffordshire*. [Flowers were shown at the Horticultural Society on Tuesday last, but they had passed their best. Ed.]

CYPRIPEDIUM CHAMBERLAINIANUM.

There has now been time to form an opinion in regard to this, one of the latest of Messrs. Sander's introductions. I have no doubt that it will prove to be one of the most vigorous growers that we possess. When the plants were received in the condition of imported plants, they were placed in a Melon pit, or rather, what was originally a Melon pit, some sphagnum was spread on the front stage, where there is bottom-heat, and more sphagnum being placed between the plants as they were arranged, each plant having been previously sponged over, and the leaves carefully tied to neat stakes. Here they commenced to make new roots in a very short time, and were in due course potted. Most of the pots are now so full of roots that we are giving them another shift. They are making broad healthy leaves, and the one which we flowered was fully equal to the best variety that I have as yet seen.

The next question is, who is to be first with a seedling from this new-comer. The dorsal sepal is a trifle deficient in size, and if the species is crossed with a large-sepal variety, where the distinct and pretty colouring of the pouch can assert itself, we may expect some beautiful offspring. *Jas. Brown, Arddarroch, N.B.*

NURSERY NOTES.

CYCLAMENS, &c., AT ST. GEORGE'S NURSERY COMPANY, HANWELL.

VISITORS to the metropolitan exhibitions are doubtless familiar with the fine displays of *Cyclamens* made by this company. A visit to their home quarters, where the plants occupy a number of houses, is necessary to afford some idea of the extent of the culture of these now popular flowers, the principal characteristics of the strain under notice consisting of a beautiful diversity in shades of colour, profuseness of bloom, and robust growth, combined with good habit. Whites are in strong force, as these are much sought after, and we noted as extra fine representatives of this colour the following:—*Mont Blanc*, *Baroness Burdett-Coutts*, *Dame Blanche*, a very broad-petalled flower; and a seedling not yet

named, which promises to eclipse other things in this way by its extreme purity, wonderful substance of petal, and generally excellent characteristics; a beautiful soft pink is *Princess May*. Mr. Avery, the able grower here, thinks so much of this new aspirant to fame, that he has sown one thousand of it for next year's work. Other good new sorts were noted in Duke of Connaught, purple, of fine form; Brilliant, deep red; another good red is *Crimson King Sunray*, light purple, a very pleasing flower.

Some 26,000 plants (seed was sown in August last for next year's requirements), look healthy and thriving, pricked off twelve in a pot. At the end of January, or beginning of February next, they will be transferred to thumbs, then to the market-sized pots (48's) as they require it. The soil used is the Banstead rich yellow loam, to which is added leaf-mould and silver-sand. Pretty firm potting appears to be an essential to success.

Cyclamens are not the only things done well here. A wonderful batch (perhaps the best in the trade), in a house 220 feet in length, of *Asparagus tenuissimus* was noticed. This is a pretty and graceful species, with delicate foliage, useful for cutting purposes. Here it has quite displaced the Maidenhair Fern, as it is used for a variety of purposes for which the Maidenhair is not adapted. *A. plumosus* and *A. p. nanus* are also grown in quantity. It has been noticed here that the latter form loses its character if not kept starved and confined to small-sized pots. The pretty *Eulalia japonica* is in much request. Some 5000 *Calla æthiopica*, in admirable condition, were noted. Raspail is the favourite variety of *Pelargonium* grown. *Chrysanthemums*, of which a select collection is grown, were attractive at the time of my visit, a fine bank of some 500 plants of the well-known *Mons. Astorg* making quite a feature in the floral display. *B.*

MR. K. DROST'S, RICHMOND.

This establishment is noteworthy as being the only place in this country where the forcing of Lilac for market and other purposes is carried on in an extensive manner. About 12,000 plants are forced yearly, this process beginning in October, and being carried on to the end of June.

It was certainly an agreeable surprise, at this comparatively flowerless period of the year, to see a mass of plants with their waving plumes of white flowers. Speaking of the French forced Lilac, Mr. Drost says that in the bud stage it is of a greenish hue, whilst that of English growth is a pure milky-white, a characteristic which is also noticeable when the flowering state is more advanced.

Of other subjects forced here largely, may be mentioned *Hydrangea paniculata grandiflora*, *Azalea mollis*, some 200,000 each of Lily of the Valley and Tulips (double and single), Roman Hyacinths, and other bulbs.

A great specialty is to be found in the fine collection of Palms; the plants, which occupy several houses, are grown in 32-sized pots and upwards, presenting a remarkably healthy and hard appearance, indicative of good and careful culture.

It is considered that one of the best stocks in England—perhaps in Europe—is to be found in this nursery of *Cocos flexuosa*, some 500 fine plants, varying from 10 feet to 15 feet in height. *Cocos plumosa* is also represented by a fine stock, whilst the well-known and now, it would seem, almost indispensable *C. Weddelliana* is much in request, quite a forest of it being grown. *Phoenix canariensis* is a very good Palm, and one that ought to be better known. *P. rupicola* possesses the merit of being a good grower. *Areca lutescens* was noted as splendid stuff. The favourite *Kentias* are *K. Belmoreana* and *K. Fosteriana*. The popular *Latania borbonica* is, as it deserves, largely grown. *Corypha australis* is another favourite market Palm. *Scaevola elegans* makes a worthy finish to the fine stock of Palms grown.

Amongst miscellaneous plants worthy of a note may be mentioned *Dracæna Brantii*, a plant of graceful habit, with fine dark foliage; it will super-

sede *D. rubra*. An elegant table plant is *Reineckia carnea variegata*. Another useful table plant is *Ophiopogon Jaburan*. A good stock was observed of a variegated *Carex*, with erect habit—a very suitable plant for decorative purposes.

Good basket plants are *Bambusa Simmonii* and *Maranta Massangeana*; *B. Fortunei aurea striata* is an effective plant, of a beautiful dwarf habit of growth. Bamboos are grown in variety for decorative and cut purposes. The only two species of Ferns grown are *Adiantum cardiochænum*, which is represented by a vigorous stock, and *Onychium japonicum*, a very beautiful greenhouse form. *Aucubas* in pots are grown largely for boxing purposes—good dwarf stocky stuff. *B.*

ROUND MANCHESTER.

(Continued from p. 702.)

BROOMFIELD, SALE.—On calling at this place recently, the residence of M. Wells, Esq., that gentleman accompanied us during the brief visit that we made to see the selection of rare Orchids which find a home in the neat block of Orchid-houses, and which will doubtless be extended as the collection increases in size and calls for more space. The plan of forming a collection adopted by Mr. Wells is a wise one, and that is to purchase, as a rule, only species and varieties which have been proved to be worth growing. And in carrying out this idea he shows much liberality, for a price running into three figures is no obstacle, provided there is a fair warranty that the plant is sufficiently distinct, rare and unlikely to become any other than rare. This is a safe and satisfactory course, if care is taken in purchasing, for in almost every instance where fine novelties, and especially "albinos," have flowered out of importations, the first price obtained is rapidly improved upon, and the value of the plant or those propagated from it has gone up considerably, and in some cases to a surprising pitch, as witness *Cypripedium insigne Sanderæ*, and many others that we could name.

Passing through the lobby to the first house, Mr. Hinde, the gardener, who seems to know instinctively every little want of his plants, lovingly displayed rarity after rarity, and those which were in flower bespoke plainly enough that the merits of those not in bloom were not likely to be exaggerated; whilst the perfect health of all the plants showed the utmost good culture. There is a robust and hardy appearance about well and fairly-grown plants, whose course for the year is so arranged that they complete their year's work within the year, and are neither forced to do more than that, nor prevented from doing less. This shows that the object of growing the plants is grasped, and that in all probability the collection will be maintained and increased in beauty and size, and not suddenly collapse, as is the case in some gardens where Orchids have been badly grown, and their cultivation then given up.

At length, after going the round of the houses of finely-grown *Dendrobiums*, containing plants of *D. nobile nobilis*, *D. n. Cooksoni*, various hybrid *Dendrobies*, *Cymbidium Parishii*, *Lycaste Skinnerii alba*, some splendid forms were observed of *Lælia anceps*, including the new one of the *L. a. Amesiana* class—a great beauty selected from an importation out of the Liverpool Horticultural Co., the noble *Cypripedium Leeanum giganteum*, and other *Cypripediums*. We were then shown a fine selection of *Cattleya labiata*, of which *C. l. Albanense* is the best, and, wonder of wonders, as a *bonne bouche*, a pure white autumn-flowering *Cattleya labiata* out of Sander's importation, one of those plants which are beyond price, and about which comment is unnecessary. See Report of Orchid Committee, R. H. S., p. 744.

Passing through the ornamental greenhouse, gay with *Chrysanthemums* and *Rhododendrons*, and fragrant with the flowers of *Daphne indica odorata*, a house is arrived at in which are some fine *Dendrobies*, and amongst them *D. Venus*, × *D. nobile*, Hardy's var., and a grand form of *D. Wardianum*, which has flowers $4\frac{1}{2}$ inches across. Then the cool

Odontoglossum-house is visited. It is filled with vigorous Odontoglossums; and some plants of *Oncidium tigrinum* and *Sophranitis* are in bloom. The *Cattleya* and *Lælia*-house contain specimens which are as well grown as in those in the other houses, and finally a visit is paid to the warm-house, in which thriving *Vandas*, &c., are found. Among the *Cattleyas* here are some special fine varieties of white *C. Mossiae*, grand forms of *C. Mendelii*, *C. aurea*, *C. Massaiana*, *C. Warscewiczii*, *Lælia elegans Turneri*, &c., and, indeed, in almost every species the best forms only seem to have been acquired.

POTATO DISEASE PREVENTION.

WE annex reports of Potato treatment by ourselves and all our friends who have tried it. Every one of them is highly satisfactory, and the only regret is from those who did not treat their whole crop. This is our second year's experience, and confirms that of last season. Our average gain last year was 33 cwt. per acre; this year about 35 cwt. As might be expected, the gain of others whose crop was put in later or on more suitable land is much more than ours.

We tried a good many plots with treacle mixture, but in no case did it do good.

We do not like to burden you with dates and number of applications, but may say we consider that one dressing about July 20, and another about a fortnight later, has been the most satisfactory.

All the copper sulphate used in these experiments was of guaranteed purity. If any of your readers have not found the dressing satisfactory, we would be much obliged for a sample of the copper sulphate they used, so that we may test it.

Champions.—Average of 8 Plots on Two Farms.

	Large.		Small.		Diseased
	tons c. qr.		tons c. qr.		c. qr.
Dressed ...	7	9 2	1	11 2	2 0
Undressed ...	5	13 2	1	6 3	10 2

Smallest gain, 19 cwt. per acre, was on a plot dressed on July 11 only. Evidently when dressed so early, a second treatment later would have been required.

Antrims.—Average of 6 Plots.

	Large.		Small.		Diseased.
	tons c. qr.		tons c. qr.		c. qr.
Dressed ...	11	1 0	0	14 0	none.
Undressed ...	9	12 0	0	16 2	none.

Owing to soil being heavy, and season wet, our crop is not up to the average. On drier land the dressing would have had more effect, as is shown by annexed reports from others. The Antrim we consider a very heavy cropper, remarkably free from refuse and excellent for the table.

Champions.—Tom Devlin, near Donaghmore.

	Large.		Small.		Diseased.
	tons c. qr.		tons c. qr.		c. qr.
Dressed ...	6	4 1	1	7 1	nil
Undressed ...	4	0 0	1	13 3	1 2

Champions.—J. Moore.

Plot 1—					
Dressed ...	12	3 0	0	14 2	nil
Undressed ...	7	1 2	1	1 2	nil
Plot 2—					
Dressed ...	10	0 0	0	14 2	nil
Undressed ...	6	3 0	1	1 2	nil

Workhouse, Dungannon.

	Large.		Small.		Total.
	tons c. qr.		tons c. qr.		c. qr.
Dressed ...	6	3 0	4	3 0	10 0
Undressed ...	4	0 0	4	17 0	21 0

Champions.—George Johnston, Stewartstown.

Dressed ...	12	9 0	1	5 3	nil
Undressed ...	9	13 0	1	11 2	10 0

Sherries.

Dressed ...	10	15 3	2	11 2	nil
Undressed ...	7	5 3	2	8 2	nil

Champions.—John Wilson, near Fintona.

Dressed ...	8	8 0	1	1 2	5 0
Undressed ...	6	1 2	0	14 2	5 0

John Young, near Omagh.

Dressed ...	8	3 2	0	10 0	8 2
Undressed ...	6	6 0	0	11 0	7 1

John Gray, Dungannon.

Champions—Dressed ...	17 tons	Area probably exceeds
Undressed ...	12 tons	an Acre.

H. W. Chambre, J.P., Stewartstown, reports gain of 4 tons per acre. J. S. Gervan, J.P., Ballygawley,

and John Orr, J.P., Kilkeel, report "very great improvement; all who tried it are greatly pleased; produce not weighed."—Yours truly,

DAVID BROWN & SON, LIMITED.

Donaghmore, Tyrone.

SELECT DECORATIVE FOLIAGE PLANTS.

(Continued from p. 710.)

DRACÆNAS.—In *Dracenas* we also have a large number of varieties, and it depends a great deal upon the conditions they are seen under as to which are the most desirable, but for ordinary decoration the following may be regarded as the most useful, and in many respects the best. Of the narrow-leaved red varieties, *D. elegantissima* is a general favourite; *superba* colours freely, and makes an elegant plant; *angustifolia* is another fine variety; Lord Wolseley is a little broader in the leaf than the above-named sorts, colours well, and makes a beautiful plant. Among those of medium growth, *Frederica* is one of the finest, pendula colours freely, and *Alberti* is a pretty and desirable variety; *Cooperi* is still a favourite. The last four, though not narrow-leaved varieties, may be recommended as table plants, the leaves being recurved, and not so close growing as many varieties. Mrs. R. Turner, a dwarf-growing variety, colours freely, the terminal leaves being of a peculiarly bright rosy tint. *Sajonti* is somewhat after terminalis, but has broader leaves, colours freely, and is very effective. *Prince Manouk Bey* is a very distinct and showy variety, with long erect leaves of a distinct shade, almost magenta. It is an effective variety for groups. Madame F. Bergmann, Rossi, and Thomsoni, are broad-leaved showy varieties, and *stricta* may also be included. The last-named and terminalis are extensively grown for market work. Of varieties with white variegation, *D. terminalis alba* is one of the most useful. *Alexandra* is a show variety, the terminal leaves are a pure creamy-white. *Louisa*, a very pretty narrow-leaved variety, makes a nice table-plant. Of the more distinct varieties *Goldieana* is worthy of notice, erect in growth, the broad leaves spread horizontally, and are bright green, marbled with silvery-grey. *Lindeni* has broad recurved leaves, striped and margined with yellow, a very effective plant for groups. *Massangeana* is sometimes confused with the last-named, but it has not such a good colour, the variegation being confined to a linear band of pale yellow. The last three should be propagated from tops or side-shoots taken off close to the old wood. A plant with a good stem will give a lot of stock. After the top has been taken, the eye nearest the top will break, and as soon as large enough may be taken off, when a number of others will follow in succession. They will root freely in sandy peat. The cuttings should be kept in a close pit where there is a good bottom-heat.

The above treatment can also be applied to all the *Dracenas*, but in the majority of cases use should be also made of the stems, which may be dried off, and then cut up into short lengths or laid in whole, when most of the sorts will break freely, and may be taken off with some roots as soon as they are a few inches high. These will require to be kept close until they have made a start. In growing the plants on, they require some care to keep them in a healthy condition, and they must not be allowed to get pot-bound, neither should they ever be over-watered. Plants propagated from the stems are apt to run up tall before they colour, in which case the tops should be cut off and rooted again.

Dieffenbachias.—A little too stiff for table-plants perhaps, but very effective in groups. *D. Bausei* is one of the most useful. *Reginæ*, *magnifica*, and *Shuttleworthi* may also be recommended. The *Dieffenbachias* may be propagated in the same manner as *Dracenas*, and are of easy culture. Pot in a rough porous compost, and after they are well rooted, give them a liberal supply of liquid manure;

in a moderate stove temperature they will soon make fine plants.

Alocasias.—Of these *A. Sanderiana* is a most effective plant, the sagitate leaves are borne on rather long stalks, and are of a bright metallic green, with a band of silvery-grey down the midrib and chief veins. It may be propagated from suckers, and should be potted in rough peat and loam; some sphagnum moss may also be used—give plenty of drainage and a stove temperature. *A. metallica*, *A. reginæ*, and *A. zebrina* are desirable species. They may be propagated from suckers or divisions, and potted in rough open compost. A stove temperature is required, and they will soon make fine plants. When making growth, liquid manure may be used freely. This applies to all the *Aroids*, and if this is made from cow-dung and soot, it will be the best stimulant that they can have, and will much improve the foliage both in size and colour.

Anthurium crystallinum and *A. Veitchi*, are noble-looking plants, though not much grown at the present time.

Phrynium variegata (*Maranta arundinacea variegata*) is a most useful plant, and very distinct; the variegation is uncertain, but treated properly, a large percentage of the leaves will be well-marked; some of them are almost white, others irregularly striped. It may be propagated freely from divisions. When dividing the plants, the shoots with most green in them should be discarded. Light sandy compost may be used, and plenty of drainage. While plants frequently divided, and grown in light sandy compost will keep the variegation well, plants grown on into larger specimens without being disturbed will gradually revert to the normal green form. Plenty of atmospheric moisture must be given, or red-spider will be troublesome. *O.*

(To be continued.)

FOREIGN CORRESPONDENCE.

EUROPEAN RHODODENDRONS.

ALLOW me to state, in reference to Mr. Watson's article on *Rhododendrons*, that in Europe nine species are known, viz.:—*R. hirsutum*, L.; *R. ferrugineum*, L.; *R. myrtifolium*, Schott & Kotschyk, R. *Chamaecistus*, L.; *R. lapponicum*, Wahlberg, Norway; *R. Simonsi*, R. *ponticum*, R. *Ungerni*, and *R. caucasicum*, Pallas. *O. Forster*, Lehenhof, near Scheibbs, Austria.

TREES AND SHRUBS.

RETINOSPORAS.

RETINOSPORAS are very accommodating, and will thrive in almost any garden soil so long as it is not too heavy; the following is a selection of the most ornamental, and will be found to include the best and most useful sorts.

R. ericoides might be called the king of small growing *Conifers*, as it makes such a splendid thing all months of the year; whilst in a growing state its delightful foliage is of a rich pea-green colour, and in the autumn it assumes a brownish appearance, somewhat similar to *Cryptomeria elegans*, which it retains until the following spring. It is one of the oldest sorts grown, and rarely exceeds 3 feet in height; its short branchlets are covered with narrow-pointed leaves about $\frac{1}{4}$ of an inch long, and rather glaucous beneath.

R. plumosa is very valuable either for large or small gardens, for if it grows too fast for the position in which it is placed, it can be cut hard into the old wood, which does not seem to hurt it, as it soon grows away again very freely. It is well supplied with lateral shoots, the deep greenish colour of whose foliage stands out in great prominence to that of the others; it forms a very handsome tree, and looks well if planted as single specimens on the lawn. It has

several varieties more or less of a showy nature, some being very desirable. First place must, of course, be accorded to the one with golden foliage, met with in gardens as *plumosa aurea*; this is without doubt the prettiest, and at the same time the most desirable of all the variegated *Retinosporas*, and one that can be used advantageously for the greatest number of purposes. It should on no account be left out of a collection of six fine-coloured Conifers; in a young state it is extremely valuable for pot work, as it thrives very well on balconies, and has a charming appearance on window ledges, &c., provided it is not neglected in the matter of watering. One essential should never be overlooked, in fact, too much care cannot be bestowed upon it, namely drainage; simple though it appears at first sight, the future health of the plants will to a certain extent depend upon it, for if the drainage is bad very little success will attend the efforts spent, as the plants will soon lose their bright colour and wear a dismal and sickly look. In watering this plant it will always be advisable to damp the foliage also, as it delights in being kept moist, and I am of opinion that if the syringe was used more freely and the foliage kept clean, many plants which hitherto have been failures would be found to do better in towns. It is one of the best things that can be found for winter bedding, its colour being so striking as to give to the whole a bright look even in the depth of winter. When planted as single specimens it should, if possible, be in full sunlight, as that plays a very important part in the colouring of plants; a damp position is preferable to a dry one. Another variety which goes well with the last is *R. p. argentea*, this, as its name implies, has silver-coloured foliage; the tips of the shoots are prettily marked with white, and like the last mentioned, it forms a good-sized tree. *R. pisifera* is a very free grower, and well worthy of finding a home in any well-kept garden; its branches are more spreading than is the general rule with this class of plants, its foliage is vivid green, and always presents a neat appearance, and like *plumosa* it is possessed of a few varieties which are very attractive. *R. p. nana aurea* is a subject better suited for the rockery than the ordinary shrubby border; it is seen at its best in a good open position fully exposed to the sun, and then it will retain its colour throughout the winter months. *R. obtusa*, introduced into this country about forty years ago, has become established, and good-sized specimens can be met with in several places; it is very distinct both in habit and foliage, which is bright shining green above and silvery beneath, plentifully furnished with spreading branchlets. It is one of the tallest growers, often attaining a height of something like 80 to 90 feet; the wood is very durable, and used for a variety of purposes. *R. obtusa aurea* takes the form of *obtusa*, but differs in having foliage of a beautiful rich golden colour. *R. obtusa erecta viridis* is a variety which seems to be very little known, it is rather a loose-growing kind, and makes a very nice thing planted as single specimens; it is a free grower even in poor sandy soils, and is not at all particular as regards position, which is in itself a recommendation worthy of consideration—its small scale-like leaves are deep green, a colour which it keeps right through the winter. *R. squarrosa*, with its needle-shaped leaves, is entirely different to any of the foregoing, the foliage is of a greyish-green colour; it is a very free grower, but to keep it a nice shape, the knife must be used freely. *R. filifera* is, perhaps, the most graceful Conifer grown, yet it does not seem to have found the favour with planters it deserves; grown by itself as single specimens dotted about in the grass, the good qualities of this fine Conifer are very noticeable, and is one which should find a place in every garden. It forms a dense tree with pendulous thread-like branchlets; the leaves, which are sharply pointed, are of a pleasing dark colour, and like *obtusa erecta viridis* it will flourish in poor soils. *R. lycopodioides* is so distinct from the rest, that I have included it in this list, though it is not possessed of any showy qualities—it is, nevertheless, a nice thing, and very different from the others of the same family; it forms a low tree of irregular growth with numerous branchlets, some of which are flattened towards their ex-

tremities, with crowded, small, scale-like leaves of a deep shining green. *R. leptoclada* forms a distinct close upright grower, reaching a height of 9 to 10 feet; it delights in a damp position, and will not thrive with anything like satisfaction if the ground is dry and hard. It makes a pretty thing for winter bedding, but in whatever position it may be planted, it should be freely supplied with water while it is growing; its numerous branchlets are produced so freely as to completely hide the main stem. Its foliage is of a pea-green colour, and associates well with *ericoides*; it also looks very nice if planted at intervals in the shrubby border.

The general mode of propagating the *Retinospora* is very simple: the cuttings should be made from 2 to 4 inches long of the current year's growth, and well ripened, with a little old wood attached; this is not absolutely necessary, yet it will be conducive towards root formation. No artificial heat is required if a cold frame is at hand; a good bed of soil composed of peat loam and sand in equal proportions, and made firm, the cuttings being dibbled in rows down the frame, and by the next autumn they will have made nice little stuff, and the following spring will be ready for planting in the open ground. Or if they are to be grown on for winter bedding, they must be potted and plunged outside up to their rims. Some of the less-shy growers do not root so freely as *plumosa*, *ericoides*, &c., consequently a slightly different treatment is necessary; if the cuttings are put into pots and placed in cold frames until they callus, it will be of great assistance to them if they can then be put into a gentle heat to encourage roots. *H.*

FRUIT REGISTER.

APPLE BEAUTY OF NORDHAUSEN, "SHÖNER VON NORDHAUSEN."

A DESSERT and culinary variety raised by Karl Kaiser, nurseryman, Nordhausen. Season, October to the end of May; size, 2½ inches broad, 2½ inches high; generally larger than smaller than this size, round, flattened top and bottom, swelling out in the middle, the halves not equal. The eye mostly open; segments greenish, slightly felted, at the base broad, but scarcely touching each other, running sharply to a point mostly reflexed; eye-basin moderately deep, with prominent pleats or ribs; stalk woody, brown, short, seldom higher than the cavity out of which it springs; rind firm, smooth, shining, light greenish-yellow, changes to bright yellow washed with red; round about the stalk, russety; aroma pleasant, and the fruits never shrivel; tree vigorous and tall growing. This novelty is very highly recommended by A. Koch, Garten Inspector, Brunswick, *Möller's Deutsche Gärtner Zeitung*.

THE CHICAGO EXHIBITION.

WE take the following details from an article by Mr. James Dredge in the *Journal of the Society of Arts*:—In the spring of 1891 the work of preparation in Jackson Park commenced; this in itself was a gigantic labour. At the time when it was handed over to the exhibition executive, excepting for a small reclaimed portion, it was a wholly unreclaimed marshy tract, with a scanty vegetation of Scrub Oak. To obtain the necessary levels, 1,500,000 cubic yards of earth had to be obtained from some source, and distributed over different parts of the park. This necessity rendered the introduction of extensive waterways and lakes inevitable, because the only means of obtaining the material required in some places, was to excavate it from others. Messrs. Olmsted & Co. quickly learned how to turn this necessity to useful account, and the waterways of the Exposition grounds will be one of their chief attractions. The problem that was presented for solution to the executive in the spring of 1891 can perhaps be best described in Mr. Burnham's own words: "It was necessary that the vast area of Jackson Park should be reclaimed, and in twenty

months transformed from a desolate waste into a park highly improved and embellished with all that skilled designers could suggest; that upon the stately terraces a dozen or more palaces of great extent be constructed, and that they be supplemented by over 200 other buildings, some of which are almost of the importance and size of the main structures; that great canals, basins, lagoons, and islands be formed; that extensive docks, bridges, and towers be constructed. It was necessary that a standard of excellence be obtained which would place the work upon an equality with the monuments of other ages—it meant, in short, that an organisation be quickly formed which would associate together the ablest architects, painters, and sculptors of the world. Many of the great problems to be solved were new, no precedent having been established for the guidance of those assuming this great responsibility."

The Horticultural Building.—The ground occupied by the Horticultural Building is nearly 6 acres. Its design is admirable, and on a scale harmonising with the rest of the Exhibition. The great constructive feature is the central dome, 180 feet in diameter, and about 140 feet in height. This dome occupies the centre, and is surrounded by a square court, roofed, and about 30 feet in height. The main entrance to the building is in the centre of this court, and on each side within it is a wide circular staircase, lighted from a small dome that forms a conspicuous feature in the design. To the right and left of the central court run two galleries: one in the front is 69 feet wide, and 272 feet in length; at the rear is a second gallery, which passes behind, but adjoins the central court; it is about 750 feet long, and 50 feet wide. The latter gallery will thus form a continuous series of glass-houses, maintained at different temperatures for varying floricultural exhibits. A clear space, 89 feet wide, and 272 feet long, separates the front and rear galleries on each side of the dome, and forms two large open courts that will be utilised for horticultural displays. Each court is inclosed at the outer end by a spacious wing 118 feet wide and 250 feet long. Thus the whole building consists of the central dome and its surrounding covered court; of two spacious end wings, connected with the central court by a gallery in front and one at the rear, these galleries being spaced far enough apart to inclose two extensive open courts. A few words may be added about the constructive features. The dome is carried by a number of curved ribs built of steel of very light dimensions, and of the same general character as has been already referred to. The foundations are of timber, similar to those of which a type has been already described. The ribs supporting the dome are not curved from the floor line, but rise vertically, like a great circle of stanchions within the inclosing court, as far as the level of the gallery running round the dome, 22 feet above the floor; above this the curving is commenced, and the ribs, converging almost in a semicircle, meet overhead against a ring to which they are riveted. The height of this ring above the floor is about 120 feet. There are twenty of these great ribs in all; they are connected together in various ways, besides the central ring at the top. At a height of 22 feet above the floor, and again at 37 feet, a series of light girders connects each rib around the circle. Between the upper row of these girders and the crown of the dome, ten rings of purlins, made of angle-iron and lattice like the ribs, only lighter and not so deep, are riveted to the ribs. Thus the whole surface of the dome is divided into panels, and every panel is braced by diagonal tie-roads. Midway between each pair of ribs, a secondary rafter, curved to the same form as the ribs, is riveted to the purlin, thus further dividing the panels and affording means for attaching the minor framing and sash bars. The front gallery is wholly of wood and glass. The roof trusses are peculiar in consisting of eighteen boards 12 inches wide by 1 inch thick, bent into a circular form and lightly braced. The span is 69 feet, and the height to centre is 38 feet. These trusses are placed about 25 feet apart. The rear gallery, which is much narrower than the front one, is covered with

a light pitched roof, and the construction of the wings calls for no particular notice. These wings are not intended for the display of plants in growth, so much as for horticultural and other exhibitions. Glass does not, therefore, enter so largely into the construction of these wings as in those of the other parts of the building.

COLONIAL NOTES.

QUEENSLAND ACCLIMATISATION SOCIETY.

THE twenty-ninth report shows that more than 17,000 useful plants were distributed by means of this institution during the year. A list of Orchids available for exchange is given. The society, which was established in 1863, has outlived similar societies established in England and in New South Wales. Mr. Soutter is the secretary and manager.

RUBUS FLAVUS.

From seeds received from the Botanical Gardens, Saharanpur, India, several plants of this Raspberry were raised, and during the past year the specimen plant that was placed outside has fruited. The plant grows most luxuriantly, and fruits freely. The fruits are borne on the terminal shoots of the current year's growth, and form loose panicles, containing from six to eighteen separate fruits on each; they are of a pale yellow colour when ripe, and possess the full Raspberry flavour, with a delightful subacidity which renders them most palatable when eaten raw. A small quantity were made into jam, which turned out well as regards flavour, but the colour was not desirable; this could, of course, be overcome by the addition of colouring matter. Several plants have been sent to various parts of the colony, and seem to thrive equally in inland, upland, and coast-land localities. It is a plant of very robust growth, making shoots from 1 inch in diameter at the base, and from 8 to 12 feet long. It is most easily propagated from layers, and needs no particular treatment in cultivation. From its strong-growing habit, and the fact that it is armed with formidable spines, it is a most suitable plant for placing round the boundary fences of orchards to exclude marauders. In appearance the plant is rather ornamental; it is evergreen, with very pretty soft green foliage, the young shoots being clothed with a dense mass of beautiful dark red downy-looking hairs. Experiments are being carried out with the plant as regards how it will bear pruning, the idea being to see whether it will increase or diminish its fruit-bearing qualities. If it will stand hard cutting, its value as a fence plant will be considerably increased. The society have a stock of plants ready for distribution, and recipients are admonished to give the plant a fair trial, and report results. *Queensland Acclimatisation Society's Report.*

FLORISTS' FLOWERS.

CHRYSANTHEMUM SPORTS.

ONE of my plants of Mrs. S. Coleman has this year produced three flowers of Princess of Wales, and none of the ordinary kind, thus reverting two generations in one season; the variety known as Miss M. A. Haggas, coming in the direct line between these two. I do not know if the above is in anyway unusual; it has never occurred with me before, although several kinds have reverted one generation. I wish they would move in the other direction as easily as they go backward. *W. H. Divers, Ketton Hall Gardens, Stamford.*

THE SHOW AND FANCY PELARGONIUMS.

These are still indispensable at flower shows that are held during the months of May and June, and no more beautiful objects can be grown for the decoration of the greenhouse and conservatory. The name show, as applied to Pelargoniums, is misleading to some persons, because they have arrived

at the conclusion that they are only adapted for exhibition purposes, and are too refined in character for the purposes of greenhouse or conservatory decoration, and hence they take to the section termed decorative. We have a class of decorative Pelargoniums, decorative Dahlias, and other classes of florists' flowers to which this term is applied, and although the term is misleading, doubtless it will continue to be used. I consider it misleading in this sense, that if the term is exclusively applied to one section only, amateurs might reason that the other sections are not decorative, whereas the very reverse of this is the case, because from the point of view of the florist, the show and fancy Pelargoniums are even more beautiful than the so-called decorative varieties, not only giving as good or better masses of colour, but the beauty of the individual flowers is more striking, and will bear the closest scrutiny.

The fancy varieties are simply lovely when well grown, and arranged amongst graceful-leaved foliage-plants. The so-called decorative varieties are more hardy than either of the above; the plants are generally of a more sturdy, compact habit, and produce a very dense crown of blossoms. They require the same treatment as the show and the fancy varieties as regards culture.

The objections many amateurs have to growing Pelargoniums arises from the trouble it takes to free the leaves from insect pests. Greenfly is their dreaded infliction, and when once this troublesome parasite has become well-established, it is really a difficult matter to get rid of them. A careful gardener will fumigate with tobacco before the insects are seen, as prevention in this case is not only better than cure, but it also costs less. Growers for the market, who have found the decorative varieties the most useful for their purpose, now complain that it does not pay to grow them so well as it does to grow other things, such as Aspidistras, Grevilleas, or even Paris Daisies. Certainly Pelargoniums, although very beautiful, either as greenhouse or window-plants, are not so useful for furnishing as many other things, and to see them standing on the costers' barrows on a cold, windy morning in Wellington Street, the petals drifting like snowflakes in the roadway, one has no difficulty in pronouncing them unfit for the barrow trade. They have still an important place in the greenhouse and conservatory, and as such a few cultural details suitable for winter may be of service to many young gardeners and amateurs. The specimen flowering plants are cut down in July or August as it happens to suit the plants. They should be quite dry at the roots at this time, and ought to be cut back to a good bud, leaving about 2 inches of the new wood of the present year. Give no water for three or four days after cutting down, and by that time, the cut portions will heal over. Stand them in an open position out-of-doors, and give a thorough watering to entirely saturate the soil; when some growth has been made, let the plants be turned out of their pots; the greater portion of the soil should be removed, and the plants be repotted again in a size smaller. After being repotted they must either be put in a greenhouse near the glass roof, or in pits or frames from which the glass lights should be removed when they are not needed, to protect the plants from heavy rains; in either case air should be admitted freely night and day until very cold weather sets in, late in the autumn. At this season the plants ought to be arranged quite close to the glass in a greenhouse, or heated pit; low lean-to pits are about the worst place for them, and airy span-roofed pits or houses the best. They require plenty of air on all favourable opportunities, but of course, in frosty or foggy weather the lights have to be closed. By this time the plants ought to be in their flowering-pots, and the very largest specimens may be developed to a high degree of excellence in flower-pots not more than 8½ inches in diameter. Specimens are to be seen sometimes 21 feet in circumference, the leaves and flowers fully developed. For ordinary purposes smaller plants are much better, and I cannot say that I ever had patience to train such plants, and place sticks to the flower-

trusses. A gardening friend who grew certain specimens to the size I have indicated, informed me that they could not get nearly all the sticks into the soil in the flower-pots, but had to tie some of them on to the stems, &c. One stick in the centre, and half-a-dozen more around it, are sufficient for ordinary decorative plants, and they will give better trusses than the old specimens which have been trained for ten or fifteen years. If the plants are kept near the roof-glass, and under suitable conditions as regards ventilating the house, watering the plants, &c., they will not be much troubled with aphids nor mildew, which will also appear in winter. Fumigate occasionally to destroy the aphids, and dust with flowers-of-sulphur for the mildew. Sometimes the plants are too much crowded with young growths, and in that case it is better to thin out the weakly ones, and tie out the others, forming a regular head of healthy growth. Watering should be done with caution; the plants should not have any until they are really dry, and enough should be given to saturate the entire mass of roots. They will not need it oftener than twice a week, and if the flower-pots are not well filled with roots, once in a week may be enough. The soil dries the most in very frosty weather, when much artificial heat is needed to keep up the temperature to about 40°, which is quite high enough in winter. "Spot" on the leaves is seldom seen when the plants are healthy to start with, and the cultural conditions are right; it is usually caused by over-watering with hard water, or by a low temperature and moist atmosphere, with perhaps insufficient ventilation in winter. *J. Douglas.*

TREE CARNATIONS.

An amateur fond of Carnations wrote to me recently, stating that his plants were much affected with a disease (?), which he cannot find alluded to in any way in the *Carnation Manual*. He says, the points of the leaves turn yellow, and the plants decline in vigour, especially in the early winter. He further adds, that it is not for want of air, as they have been in the open ground all the summer; nor is it because the plants are not near the glass, for the leaves almost touch it. Watering, he says, is carefully done, and the drainage is all right; and he adds, that the plants are not over-potted. And after much trouble taken to find out the cause, he has come to the conclusion that the potting-soil is not right, and he thinks it is owing to the use of leaf-mould. I mention this because two other good growers of Carnations have written me to the effect that they think leaf-mould is injurious to their plants. I do not think they are right in supposing leaf-mould made from the leaves of the Oak, Beech, Chestnut, Plane, Lime, Elm, Ash, or other forest trees to be injurious; but it is possible that the decayed leaves of some trees may be injurious to Carnations, or some deleterious substances may have been raked up with the leaves. Moreover, we know that fungoid growths of many kinds are formed in leaf-mould, the spores being introduced by decayed wood. We had some Carnations this year of the Souvenir de la Malmaison type, and a few of the leaves died off yellow at the tips; but I knew very well that this was owing to the plants being saturated with water. They had been placed in a frame which was flooded with water, so that the pots were standing in the water for twelve hours soon after the Carnations had been potted off, and I have no doubt but that the roots were killed in the greater numbers in some cases more than in others. The plants were put into a cold greenhouse, and with care they have come right again. I believe that in most cases this "yellow fever," as one amateur calls it, is caused by injudicious watering. When a Carnation has filled its pots with roots, it will take up a good deal of water, as well as weak liquid manure-water occasionally, especially when the pots are standing exposed out-of-doors and the weather is hot, but even under such conditions watering may be overdone, or the plants (some of them, at least) may be allowed to become very dry, in which event the rootlets perish. The plants are frequently and

heavily watered with the idea of getting them right again, and as the active rootlets are gone, the plants are unable to absorb so much moisture, and more rootlets get killed. One amateur writes to say that he cannot have over-repotted his plants, as some of them are quite healthy, while others in the same sized flower-pots have the leaves yellow. This is just what would happen if some of the plants had been too much watered after once being excessively dry. Another grave error is watering the plants immediately they are potted or repotted. I knew a gardener who, to save trouble, always watered his newly-repotted plants in the potting shed. As they were repotted, and the hand-barrow was loaded, they had a good watering through the rose of a water-pot, as he said, to settle the soil about their roots. Hardy, coarse-growing plants like zonal Pelargoniums, might not be injured by this way of treating them, but it will not do for Carrations. Let the soil be moderately moist when the plants have to be repotted, and the potting-soil itself should also be in a fairly moist condition; repot firmly, and do not give any water for three or four days after repotting, by which time the roots will be about to start in the new soil. Early in March, when we repot our exhibition Carnations and Picotees, we do not water the newly-repotted plants for two weeks or more, and even after that period has elapsed, it is necessary to be very careful that too much water is not applied, the new compost absorbing much water, but as it contains no roots, this does not evaporate very rapidly.

It is by attention to all these minute details of watering, draining the pots, and repotting the plants, that success is attained. We have scores of the Tree or Perpetual-flowering Carnations now in flower in our houses, and not one of them shows the least trace of disease of any kind, nor have I seen a single leaf turning of a yellow colour, except by the accident of too much water being applied, so that the roots were injured, and unable to perform their functions.

We began last season to put in cuttings, or "slips," of Tree Carnations before Christmas, and these early propagated plants were by far the best that we had, affording more and larger flowers. There is danger of these early plants being checked in their growth in the early weeks of the new year by being drawn up in hothouses, and they require a good deal of attention whilst striking them, and after they have been potted off singly into small pots. The small side-growths make the nicest cuttings, as these root more readily, and form plants sooner than do the harder thicker growths. I would also observe that I do not think it is necessary to use leaf-mould. A good compost for Tree Carnations is, three parts yellow loam, one of peat, one of decayed stable manure, a few crushed bones, and enough coarse white sand to keep the compost open.

The best scarlet or crimson variety we have at present is Winter Cheer, whose flowers are freely produced on dwarf plants. Mrs. Moore, a white, variety, flowers even more freely. These two are admirable examples of what a winter-flowering Carnation ought to be. *J. Douglas.*

BOOK NOTICE.

THE BOOK OF CHOICE FERNS, FOR THE GARDEN, CONSERVATORY, AND GREENHOUSE. By George Schneider. Parts 15 and 16. (L. Upcott Gill & Co., London.)

These parts of the cleverly-compiled and well-illustrated work on Ferns, which has on former occasions received favourable notice from us, show that the high standard of the book is well maintained, and the subject handled as well as possible, considering its multifarious bearings.

Part 15 has a good coloured plate, depicting *Trichomanes radicans* and *T. reniforme*, showing the extremes in variation in the genus. In the letter-press the genera *Meniscium*, *Mohria*, and the curious *Monogramme* are dealt with, and then follows that extensive genus *Nephrodium* in its four principal

groups, viz., *Eunephrodium*, *Lastrea*, *Pleocnemia* and *Sagenia*, and these run through the remainder of this Part and also the greater portion of Part 16, which finishes *Nephrolepis*, and commences the species *Nothochlæna*.

In the nomenclature the best authorities have been followed, but in order to make the vast amount of information contained in it readily available, a complete index, giving the name of each species as it appears in the book, and also under its most popular synonyms should be prepared on its completion; for as in the case of *Nephrodium* but few species are known under that name in gardens, the greater part being known simply under the sectional name *Lastrea*; and so also with most of the large species. One of the greatest difficulties in the way of the study of Ferns for gardeners, and amateurs at least, is the vast number of synonyms which nearly every species has, and if *The Book of Choice Ferns* can put right the tangled skein it will be doubly valuable. Doubtless, it is Mr. Schneider's intention to do his best in this particular as he has so cleverly managed all the other details.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

THE ORCHARD-HOUSE.—This structure should now be cleansed and put in order for the reception of the plants in pots at the beginning of the year. The strong and thorough measures recommended for the eradication of plant-pests in Peach-houses, when a removal of the trees and borders is being effected, are applicable to the orchard-house, inasmuch as success in hardy fruit culture under glass depends in a great measure on the trees being kept free from parasites, which prey on the foliage and young shoots. Should aphids, thrips, or red spider have been present during last summer, any or all of them, apply petroleum with a painter's brush of fair size to the wooden and iron parts of the building, working it well into every crevice. Remove the surface soil of the plunging bed to a depth of 3 or 4 inches, and replace with fresh materials from quarters likely to be free from troublesome insects. The plants may then be taken in hand and dealt with according to their needs; but in all cases affording them a dressing of a trusted insecticide, as Fir-tree oil. When the soil in the pots, especially that near the surface, has become more or less infertile by the repeated watering during the growing season, prick it out with a sharp stick down to the roots, and afford a layer of loamy soil to which a little finely-sifted old plaster, kainit, and basic slag have been added. If some of the fibrous roots have been laid bare, the compost should be worked in among them, and the pot filled up to within 2 inches of the rim, making the whole uniformly firm. Afford water rather sparingly till the growth of the plants shows that a more liberal supply will be of benefit. Trees which have the run of a border are generally more easily managed than the potted ones. Nevertheless, if any plant fails to bear a crop, rather strong growth follows, which rarely gets properly ripened unless some amount of root-pruning has been followed at the end of July or beginning of August. In cases where this timely check has not been given, a shortening of the main roots and any unduly long branches may now be done. There is, however, such a thing as overdoing both, and it is only when the pruning of root and branch results in a balance of the two—supply and demand—that good results follow. These plants, like those in pots, may receive any pruning necessary, such as the cutting out weak and sappy wood, and shortening of too long branches. The condition of the border will usually be indicated by the health of the plants, and should want of vigour show itself, remove some of the surface soil and replace it with a similar compost to that employed for the potted trees, with the addition of wood-ashes, potash, and phosphatic manure. Manures such as ammonia sulphate, or nitrate of soda (or potash), are best applied when the roots are active, especially nitrate, as they are so readily soluble, and are soon lost by drainage if the roots are not in a state to lay hold of them. As the house is kept cool and well aired, little water will be needed to keep the border in a moderately moist condition. No manure-water should be afforded the trees at this season.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

THE INTERMEDIATE HOUSE.—Last week I omitted to mention in the list of flowering plants the pretty little *Masdevallia Tovarensis*, which certainly deserves notice for its usefulness as a flowering species at this season. Supposing a good batch of it is grown, the numerous white flowers which the plants produce make an effective show in the flower-house. It is a plant of easy culture, growing rapidly under ordinary care; sometimes, however, its bright green foliage will suddenly and unexpectedly fall off, which weakens and often ends in the loss of the plant. The leaves appear to do this without apparent cause, but it is generally attributed to a too low temperature, although extreme heat may just as reasonably be supposed to be the cause, or excessive drought, or the reverse. With moderate care, the species should grow well in this house. It is well, if it can be avoided, not to cut off the old flower-spikes of *Masdevallia Tovarensis*, as they will again flower another year, and often carry finer blooms than those of the first crop. With colder weather and the use of more fire-heat, due attention must be paid to plants which are known to become infested by thrips; such as *Odontoglossums*, which may be making growth. Dipping the plants is an effective remedy.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

CLIMBING PLANTS.—The present is a suitable time in which to prune, clean, and re-arrange those climbing plants that may now stand in need of attention. Roses, Cotoneasters, Pyracantha, Ceanothus, and such-like plants, should, when planted for covering walls, &c., have their shoots, in the first place, trained with regularity over the space allotted to them. The side-shoots of the Rose, some of the species and varieties of Clematis which flower on the current season's growth, and other deciduous climbing plants of the same mode of flower, should be pruned back to one bud every year, soon after the fall of the leaf, giving first attention to those which are placed on south and west aspects, and those on colder walls at a later period. Sometimes brown-scale will infest Roses, Cotoneasters, and *Cratægus pyracantha*, and the insects should be removed as far as possible with a piece of pointed stick, and afterwards well washed with warm water, to one gallon of which 6 oz. of soft-soap and a wine-glassful of petroleum are added; a stiff, clean painter's brush, or a bast-brush, are good for this purpose, the mixture being kept well-stirred whilst being used. This done, the branches may be re-arranged, and secured in their places.

BOX EDGINGS.—Although the planting of Box and other Evergreens may be performed at almost any time of the year, the period from October to March is the best; and bearing this in mind, gaps may be filled. To do this expeditiously and well, remove some of the gravel and the soil to the depth of about 6 inches. Make the soil at the edge which is to be mended level and very firm, and dibble or lay in, in a small trench having an upright face, rooted pieces of Box, in thickness and height equalling the rest of the line. Replace the soil, and then the gravel, treading both firmly. If much Box edging has become unsightly, it should be taken up and laid in, in a spot convenient for use, the ground on the lines dug, trodden, and levelled in accordance with the gradient of the walk, being careful that each side is made level with the other, and with the centre of the walk. Straight lines may be laid against a tightly-strained garden line kept in place with pegs, and curving lines must be properly struck, or patterns of wood laid down to guide the spademen who cut the trenches for the planters. The old edging is generally, if not grown too tall, fit for planting, but it should have long roots cut off, and be cut level at the top, and laid in about 2 inches in width. Proceed as in mending. In big jobs, it is prudent to entirely remove the gravel of narrow walks, and put it in the middle of wide ones.

EDGINGS WHERE THERE ARE SHADING TREES.—It is labour lost to try to get turf to grow satisfactorily under umbrageous trees, especially as an edging to the walks, and the best plants for such places are dwarf St. John's Wort and Ivy. These plants should be, whilst kept from growing on the walls, allowed to extend freely over any bare spaces that may be within view from the walk. The present is a suitable time for planting the

above, which may be done by thrusting a spade into the ground, pressing it forward, and then drop a few pieces with roots into the opening thus made, withdrawing the spade, and trampling the soil about the plants.

JOBS FOR WET OR FROSTY WEATHER.—A good stock of labels of various sizes, and pegs for marking out designs, &c., should be made; also Rose and Dahlia, and other flower-sticks.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

THE FERNERY.—The present is a suitable time in which to repot Ferns in baskets; an excellent compost to employ consists of three parts fibry loam, one of peat, with the addition of a good portion of silver-sand, and some small clean bits of charcoal. The following are amongst the best Ferns for baskets:—*Goniophlebium subauriculatum*, *Woodwardia radicans*, *Davallia Mooreana* and *D. elegans*, and many of the varieties and species of *Adiantum*, which are amongst the most graceful of plants for a basket. The chief stock of Ferns and those growing on walls or on rock-work should be frequently examined, and decayed fronds removed by cutting them out carefully at the bottom of the stipes, one decayed frond left on a plant often communicating decay to others. Small fronds which have scale on them may be cleared of many of these injurious parasites by means of a pointed stick and an insecticide used in a weak state. The propagation of Ferns may begin forthwith by placing rooted portions of the root-stock under hand-lights in a warm house or hot-water pit. Care should be taken that specimen tree Ferns do not get too dry at the roots; also syringing or watering their stems every day.

COMPOSTS.—This is the season for getting in the required quantity of soil. Those who, like myself, have old pasture to go to will have little difficulty in obtaining fibry loam of rich quality; and this forms the basis of most of the composts the gardener uses. Residents in big towns are rarely so well situated, and must often find it difficult to get turf of the desired quality; and in this case it is a good plan to make a heap of turf, placing a layer of fresh horse-droppings between every second layer of turves during the progress of stacking it. Turf for potting should be cut from 2½ to 3 inches thick, 15 inches in length by 10 in width, and in fine weather stacked neatly, and with the top ridged to throw off the rain. Sufficient leaf-soil for the season should be got in, or be prepared by sifting old partially-decayed leaf-heaps, or got from a rookery, the quality of the latter is much superior to that which is obtained from leaves only which have been stored in heaps to rot. When storing leaf-mould, some of it should be placed in a dry shed for immediate use. Peat for various purposes should be purchased or dug, and stored like the loam, and that which is sufficiently decayed for present use brought under cover, or in some way protected from the weather. Orchid peat is rarely found on many estates, and the country gardener, like the dweller in town, must buy it of the soil dealer. He should see that it is very full of the roots of *Pteris aquilina*, and contains but little real soil or sand; and if for use at once, it should not be less than one-year cut, two is better. Peat for hard-wooded plants needs to be two-years cut and stacked, as the living fibres in it can afford no support to plants.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

RASPBERRY PLANTATIONS.—The Raspberry, although a surface-rooter, should be planted on deeply-dug land, and a new plantation should always be made at intervals of a few years, the fruit being much finer from young than old stools. On digging or trenching the land, break up, but do not raise the subsoil to the top. Heavy soils are the better for having incorporated with them, as the work of trenching proceeds, some lightening materials, as rough dung from the stables, rubbish heap-collectings, wood-ashes, road-scrappings, and spent Mushroom-beds. Planting may be done at any time during the winter, when the soil is moderately dry, and there is no frost to hurt the roots of the plants. Place the canes in groups of three, to form a clump, and at a distance of 5 feet apart; or, if the plants are to be trained to trellises, singly, at 9 to 15 inches apart. The canes should be left at full length till the buds begin to move in the spring, when they

should be cut down to within a few inches of the ground-level. Of fine varieties to grow, are—*Baumforth's Seedling*, a great bearer, of good quality, with large berries; *Carter's Prolific* [*Carter's Semper Fidelis*, for vinegar, or a sharp acid preserve. Ed.]; *Red Antwerp*, and *Superlative*, this latter being a robust grower, with fine, good-flavoured fruits. *Belle de Fontenay* for autumn, is a nice-bearing autumn variety, with large fruits; it fruits heavily, also, at the same time as the other varieties, if not cut down.

GOOSEBERRIES.—In mild weather when the pruning is finished, the soil should be raked from beneath the bushes and charred if the Gooseberry sawfly caterpillar was troublesome last summer, and the bushes afforded a thorough dusting over with soot and lime, which will tend to preserve the buds from sparrows and finches, and the branches from being covered with moss. Topdress the land with fresh soil, and mulch it with rotted manure, but do not dig deep in the alleys, but merely prick up the surface with a fork deep enough to bury the weeds and manure. Cuttings should be made firm in the soil, and others which may have been heeled in may be planted. Any pruning remaining to be done should be finished.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

ASPARAGUS BEDS.—These beds should be given a portion of thoroughly decayed manure, placing about 3 inches on the surface, and cover the manure over with some of the soil out of the alleys, after which these also should be well manured, and roughly dug, leaving it in a rough state until early spring, when the beds may be lightly forked, and raked into the alleys, which should also be lightly forked, and made as neat as possible. Such culture for Asparagus at this season, however, should only be followed in well-drained or light soils, as on wet clayey soils the surface-dressing of manure keeps the bed in a wet cold state all the winter, and delays the crop. In such cases I would recommend a good dressing of manure as soon as the crop is cut in the early summer, and in dry seasons give ample supplies of liquid manure. Now is a good time to trench the ground for new beds, and I have found much can be done to promote the growth of this vegetable by incorporating various other soils with that of the staple in places where that is not suitable. In clayey soils there is no better material than road scrapings and the burnt refuse of the rubbish yard. Lime rubbish is excellent if mixed with such soils. Raised beds are most suitable in these cases, as they allow the excessive moisture to drain away. On light soils the addition of manure and heavier soils is an easy matter, so that I need not enter into details, but in all cases the preparation of the beds in the winter months is of great value, as it allows the materials to amalgamate, thus getting into good condition by planting or sowing time. In making new beds, cow manure is excellent on light soils, also a liberal dressing of sea-weed or fish manure.

ROOT-CROPS.—The ground for these should also be selected and prepared for sowing and planting. Deep cultivation and ample supplies of manures are the chief requirements. Those roots which grow coarse or which fork badly should be sown on ground that has been heavily manured for the preceding crop. Such roots as Beet, Parsnips, Carrots, and Salsify require this ground; but, on the other hand, Cauliflowers, Cabbage, Brussels Sprouts, Seakale, Beans, and salads require abundant supplies of manure. For late Peas or Beans I prefer to place the manure in the trenches as advised for Celery. This is best done just before sowing the seed. Heavy land should be reserved for Broad Beans; and that which is light for Parsnips, Globe Artichokes, Marrows, and salads. Onions require more than ordinary care, so that good soil is necessary and an open sunny position for them—in many places the ground previously occupied by Celery is suitable. No time should be lost in clearing the surface, levelling and digging the soil and leaving it as rough as possible; this will then get in condition for early sowing. In soils badly infested with grub, I would advise a light dressing of gas-lime with a liberal quantity of soot spread over the surface before digging the ground. Wood-ashes are valuable, and should be forked into the soil just before the seed is sown.

GENERAL WORK.—All spare plots should be got in order by digging and manuring if re-

quired, and though I do not advise wheeling on or treading the ground in a wet state, every opportunity should be taken to get the work advanced. Get in the stock of Bean and Pea sticks required for the ensuing season, and prepare the same by sharpening and placing them in bundles according to their length, that they may be ready for use when required. Gravel for the walks may be procured, and placed in a convenient place ready for use as soon as the winter work is completed, as a slight covering of fresh gravel adds greatly to the neatness and effect of a well-kept garden. Large labels and stakes for vegetable quarters may be prepared in wet weather. Any draining required is better undertaken at this season, and any new walks made that are required.

THE APIARY.

By EXPERT.

DAMP QUILTS.—One of the greatest difficulties that beekeepers have to contend with at this time of year is damp quilts, with the attendant danger to the welfare of the inmates within the hives. Leaky roofs are frequently responsible for the mischief, but more often it is owing to some defect in the make of the upper part of the hive. If the air in the space above the quilts is allowed to be confined, condensation of moisture takes place, and they soon become damp, mouldy, and rotten. A current of air should always be ensured, for which purpose an opening at each end, at or near the apex of the roof, should be made about 2 inches in diameter. A piece of small-holed perforated zinc should be tacked over to keep out robber bees, spiders, mice, and other objectionable company; or, better still, perforated cones can be permanently fixed, so that the roof will then always be ready for use as a super clearer. It is a good plan to have the projecting eaves of hive roofs grooved about ¾ inch from the edge, as this prevents the drip from drawing under, and so into the hive. It is not of much use patching up cracks in roofs that let in the wet now, as this should have been done earlier in the year when the weather was favourable; so the better way perhaps will be to make use of some temporary covering until the spring comes round. Zinc, however, tacked on would effectively remedy such a defect, or Willesden card could be used for the same purpose. A little extra trouble in providing plenty of warm material above the frames and keeping it dry, will be well repaid in spring, when stocks so treated will come out stronger and better than those on which such attention has not been bestowed.

ON THE WEST AUSTRALIAN FAN PALM.

Baron von MUELLER, in the *Victorian Naturalist*, November, 1892, says:—"It has been known since the discovery of the Hamersley Ranges, fully thirty years ago, that a *Livistona Palm* occurs on the Mill Stream there, isolated from any other species of that genus; but incomplete specimens led to the surmise that this Palm might be identical with *Livistona Mariae*, a species restricted to the Palm Glen and several valleys of the Macdonnell Ranges in Central Australia. The last-mentioned Palm we know now through Mr. J. EDGAR, of the Rockhampton Botanic Garden, to be, while in a young state of cultivation, much more robust and upright in foliage than *L. australis*, besides the leaves at the early age of the plant being of a 'rich bronzy colour.' I have always found transmitted fruitlets considerably larger than those of the genuine *L. Mariae*, and further some minor differences exist also in the flowers of the two species, as recently ascertained. The West Australian Fan Palm has, therefore, now been named *L. Alfredi*, in honour of H.R.H. the Duke of EDINBURGH, at whose nuptial festival the Central Australian Palm was dedicated to the Princess MARIE of Russia. What applies to many other Palms holds good also for *L. Alfredi*, namely, that the leaves are more strongly spinous in the young than in the aged plant. Mr. BERESFORD records this Palm now also from the Fortescue River and its tributaries, from the sources of the Robe River, and from Cave's Creek."

SCOTTISH HORTICULTURAL SOCIETY.—In our report of the above, given on p. 712 in our last issue, the name of the lecturer on the "Dukeries," Mr. JOHN METHVEN, was omitted. The same gentleman has promised to give a lecture on "Notable Scottish Scots."

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, DEC. 20 { Gardeners' Royal Benevolent Institution.

SALES.

MONDAY, DEC. 19 { Important Sale of the Blenheim Collection of Orchids, at Blenheim Palace Gardens, near Woodstock, by Protheroe & Morris (five days). Plants, Bulbs, and Chinese and Japanese Curios, at Protheroe & Morris' Rooms.
Dutch Bulbs, at Stevens' Rooms.

TUESDAY, DEC. 20 { Orchids from Mr. F. Horsman, at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 21 { Lilium auratum, Dutch Bulbs, &c., at Protheroe and Morris' Rooms.
Liliums from Japan, at Stevens' Rooms.

THURSDAY, DEC. 22 { Plants, Lily of the Valley, Dutch Bulbs, &c., at Protheroe & Morris' Rooms.
Shrubs, Roses, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—39°.4.

Plant pests and Insecticides.

ONE of the most costly and unprofitable of all the operations in a garden up to less than a score of years ago, and one still too frequent, was the never-ending round of washing, scrubbing, and cleaning insect-infested plants. The costliness mainly arose from the high price of the "insecticides," or the inefficiency of those commonly employed, and the great amount of labour expended in applying them; and the unprofitableness, chiefly because of the severe treatment the plants received under the frequent scrubbing and rubbing to which they were subjected, and the general want of care and thoroughness in carrying out the cleaning process. More money was often spent in futile attempts to free plants from insect pests than would have bought clean, healthy stock of the same size in the open market. Unless the rarity or value of a plant will justify the cost of carefully cleaning it, when plants from any cause get into such a disreputable state of filth and insects, they should be promptly placed in the nearest furnace, and burned along with their dirt and vermin.

At the present time, when the depression in trade and rural affairs makes it a necessity in most gardens to keep down expenditure to the lowest limits consistent with efficiency, the strictest economy has to be practised in all departments. In few garden operations can more economy be generally carried out than in the timely prevention or arrest of insect and fungoid attacks. From want of forethought in applying simple and effective remedies, these pests are too often allowed to get a firm hold upon plants, and even permitted to overrun a house and sometimes a whole range of houses, before a serious thought is given to them, or a

finger lifted to repel their attack. By promptly applying a remedy, the outbreak might nevertheless have been stamped out in its infancy in a few minutes. Effective means and prompt action comprise the whole secret of success and economy in dealing with insect as well as fungoid pests.

It is now well-known to many gardeners, and should be known by all horticulturists, that petroleum is one of the best and cheapest of all insecticides; but its liability to abuse by the ignorant or careless makes the general use of it rather risky in unskilled hands, in which it is always dangerous, and sometimes deadly in its effect upon plants. To avoid this, the strength of the petroleum must be carefully reduced to the point at which it will kill the insects without injuring the plant on which they live. It is a curious but most important fact in Nature, that petroleum may be so graduated in strength that it will kill every insect it reaches which infests or preys upon plant life, without injury to the plant, or part of a plant, on which the insect lives. Thus, a very weak admixture of the oil applied to aphids—say green-fly on a Rose shoot, or any other tender young growth which aphides affect, will kill the fly, and not injure the growth. About $\frac{1}{4}$ gill of paraffin oil thoroughly blended with 1 gallon of soft water will destroy all aphides; but even half that quantity of paraffin in a gallon of liquid will do the same, if it is perfectly amalgamated with the water and properly applied in the form of spray. As a rule, red-spider and thrips do not appear on younger growth, although, if not prevented, they quickly overrun it. Older growth, such as fresh full-grown foliage of Vines, Peaches, and the like, are apt to be infested with them, and may be treated with $\frac{1}{2}$ gill of paraffin in the gallon of liquid without fear of injury to the growth, but with deadly consequence to the spider and thrips. For eradicating mealy-bug, scale, and similar pests, which chiefly infest the tough, leathery foliage, and firm woody parts of a host of stove and greenhouse plants, 1 gill of paraffin in the gallon of liquid may be safely employed, and if regularly and judiciously applied it will effectually keep them clear of every insect pest.

Among the various methods, most of which are failures, in vogue for reducing the strength of paraffin to make it safe for use as an insecticide, one of the safest and handiest is the method, now pretty well known among horticulturists, of boiling black soap and water, in the proportion of one of soap to eight of water, till the soap is wholly dissolved; and then, while the liquid is as near the boiling point as possible, pouring it into bottles, and at the same time adding the paraffin. The nearer the liquid is to the boiling point at the moment the paraffin is poured into it, the better will the whole amalgamate. A fixed quantity of the oil is put into each bottle, so that the exact strength is known. Corked, and set aside in a safe place, it is ready when required to be reduced to a proper strength for use. In preparing for application, it is simply poured into a pail, watering-can, or garden-engine, as may be required, and with soft water it is reduced to the desired strength. If, say, a bottle contains two gills of paraffin, it is enough for making four gallons of water sufficiently strong for spraying plants to clear them of aphides; or two gallons for clearing off red-spider and thrips; and one gallon for eradicating mealy-bug and scale insects. With a little practice, this simple and effective method of reducing the strength of paraffin may be safely performed by any intelligent person,

although entirely ignorant of chemistry. In these days, however, of evening classes and technical education, every young gardener ought to acquire a sufficient knowledge of chemistry to enable him to clearly understand the nature of the process by which paraffin amalgamates with water, when combined with black soap at a high temperature.

All liquid insecticides of a caustic nature are best applied in the form of spray, either through a garden engine, syringe, sprayer, or other similar appliance. One of the most effective of all the appliances for this purpose is the Stott spraying-nozzle, which can be screwed on to any form of sprayer, syringe, or garden engine, and which distributes the liquid evenly, safely, and economically, wherever it is required. In particular, paraffin, of whatever strength, as an insecticide, should always be applied in a spray, and never, if it possibly can be avoided, in any other way, because all dipping or washing of plants with it, is extremely liable to injure them. A slight film of paraffin may be floating on the surface of the most perfectly blended liquid, or some crude sediment may fall to the bottom, and in either case dipping or washing with it is dangerous, especially so to downy or hairy-leaved plants. Numerous mishaps of this kind have occurred which it is safe to say would never have happened if the insecticide had been applied in fine spray, even by the ordinary method of using the forefinger as a "sprayer" on the jet-nozzle of a common syringe. Still, a careless person with a jet-nozzle may easily play mischief, but with a "Stott" nozzle for spraying the liquid paraffin mixture, the risk of a mistake is rendered as near as possible an impossibility. Many plants, when in a dormant state, absorb this oil like a sponge! While, when growing, and full of sap, it cannot penetrate to the living parts, because the sap or moisture repels it. Hence Vines, and all such open, porous-wooded plants, are easily injured by paraffin, even of a weak strength, when dormant, while a much stronger solution may be safely applied to them when they are growing and full of sap. By bearing these simple facts in mind, any intelligent person may keep plants of all kinds free from insect pests at a minimum cost.

Fruits under many names.

THE foreigner is not the sole delinquent in the matter of selling well-known varieties of Apples and other kinds of fruit under new or little known names. Thus, a correspondent in *Möller's Gärtnerzeitung* informs its readers, who may be not well versed in fruit synonymy, that the new Eve Apple supplied by a Scotch firm is their old friend Manks' Codlin, which, it may here be stated, is found in Hogg's *Fruit Manual*, under the following names: Eve, Frith Pitcher, Irish Pitcher, Irish Codlin; and in *BARRON'S English Apples*, besides these, are the names Belmont, English Pitcher, and Orme. It is known in Germany under the cognomen of Eve Apple of Scotland and Manks' Küchen Apfel. In France, M. LEROY says that it is known as Pomme d'Eve, Doux d'Argent (Süßes Nanzhäuser), Mirabelle (Thau Apfel), Manks' Codlin, and Marguerite, the double names adding to the confusion and deception. The Americans grow it under the following names: Old English Cooking Apple, Downing, and Frith Pitcher.

The writer of the article here quoted from, gives a few more examples of the manner in which his countrymen are induced to purchase well-known kinds of fruit: of Apples, Charlamovsky (Boravitzky) reaches them under the name of Duchess of Oldenburgh; of Pears,

Williams' Bon Chrétien comes from America as The Bartlett; Esperens Herren Birne comes from France as Beurré Lucrative; Marie Louise as Marie Louise Delcourt, and several more, including the Old Windsor, under the name of Beurré Montecat.

It would not be any wonder, he thinks, if the old Gelben Bellefleur were received from England under the name of Mrs. Barron—a name, by the way, under which it was described in the *Florist and Pomologist*,

of catalogues in these islands and in America, France, and Germany would attach to the best known name in their country, of the varieties, the names under which they are commonly known in each of the other countries, much of the probably unintentional deception of customers would terminate, and the cost of the extra printing involved by this improvement would be very well covered by discarding the many worthless varieties that now find a place in most lists of fruits,

"The gardeners of Kew, past and present, are desirous of forming themselves into a guild, and propose to publish annually a journal, in which will be recorded (1) the present Kew staff, from the Director to the gardeners; (2) a list of all old Kewites, with the date of their leaving Kew, and their positions and addresses; (3) brief notices of distinguished past Kewites; (4) Kew notes; (5) interesting correspondence from old Kewites; (6) the proceedings of the Mutual Improvement Society, and the prize essays of the year; (7) the proceedings of the British Botany Club; (8) the report of



FIG. 112.—VIEW OF CREWE HALL. (SEE P. 740.)

The evils of the plurality of names are greater and much further-reaching in their effects commercially when applied to fruits than is the case when decorative garden plants, or plants of merely botanical interest, are concerned. Imagine, for example, the chagrin of a fruit cultivator on a large scale who already had numerous trees of those few sorts that are mentioned above, on fruiting his trees after years of waiting to find that he already possessed them under another name. Would he not be justified in applying hard names to the sellers? If makers

OUR ALMANAC.—Secretaries of societies and others are earnestly requested to forward immediately, the dates of show-fixtures, and meetings of horticultural societies of any kind for 1893, for insertion in the Almanack to be published in our issue for January 7.

GUILD OF KEW GARDENERS.—Recognising, the imperative necessity of some organisation for gardeners, in order that they may obtain the social position and emoluments to which their qualifications entitle them, we welcome the formation of an association which goes some way towards the realising of what has long been an ideal of ours.

the Cricket Club. Frontispiece: portrait of a distinguished Kewite. The journal will consist of about fifty pages, royal 8vo, to cover the cost of which, with postage, an annual subscription of one shilling will be necessary. It will be published on May 1. Will all old Kewites, i.e., men who have at any time worked as gardeners at Kew, kindly send their names, date of leaving Kew, with present position and address, to the Secretary, for publication in the journal? It is anticipated that every Kewite will gladly become a subscribing member of the guild, and also communicate any interesting professional information for publication in the journal. It will be seen that the aim and object of

the guild is the very laudable one of uniting all Kew men in a bond of fellowship by means of a journal which will convey to them news of interest, and enable them to communicate with each other. There are probably 500 Kewites distributed all over the world, but of the whereabouts of all except a small proportion, there is at present no record. The committee to carry out this scheme is composed of Messrs. W. WATSON, W. J. BEAN, G. H. KRUMBIEGEL, J. BROWNE, H. PETTIGREW, and J. AIKMAN. All communications should be addressed to the Secretary, J. AIKMAN, Whitestile Road, Brentford. It would save correspondence if members would enclose their subscriptions when they write to the Secretary."

"THE ORCHID REVIEW."—On January 1, 1893, will be published the first number of an illustrated monthly journal, devoted exclusively to orchidology in all its branches, edited by R. A. ROLFE and FRANK LESLIE. Price 1s., monthly; post free, 12s. per annum, payable in advance. The work will be specially devoted to the interests of cultivators of Orchids, and will be conducted on broad and independent lines, as a general repertorium of information on every branch of Orchid lore. It will be printed in clear type and on good paper, and of 8vo size. Among the subjects treated of will be found:—Descriptions of new species and hybrids, with their origin and parentage; notices of interesting collections; portraits of interesting Orchids; cultural notes by experienced cultivators, with a comprehensive Calendar of Operations; geographical notes, and sketches of Orchids at home; biographical sketches; reports of meetings, and doings of the month generally; with any other matters likely to prove useful or interesting to lovers of Orchids. It is intended to make the illustrations a feature of the work. They will be executed and reproduced by photographic process, in order to ensure accuracy and highly-finished results.

BARON SCHRÖDER.—The QUEEN, it is officially announced, has directed Letters Patent to be passed under the Great Seal of the United Kingdom of Great Britain and Ireland, granting the dignity of a Baronet of the said United Kingdom unto JOHN HENRY WILLIAM SCHRÖDER, of The Dell, in the parish of Old Windsor, in the county of Berks, Esq., and the heirs male of his body lawfully begotten.

OPEN SPACES.—At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., Sir WILLIAM VINCENT, Bart., Vice-Chairman, presiding, it was announced that Her Royal Highness, the Princess LOUISE had been pleased to send a contribution of £10 towards the general expenses. It was stated that funds were needed for the acquisition of the Cross Bones disused burial-ground, Red Cross Street, S.E., which the owners now seemed willing to sell; and for the laying-out of Woolwich Churchyard, S.E., the estimate produced showing that the cost would be about £1100. It was agreed to offer seats for Maida Vale, N.W.; to lay out a portion of St. John's churchyard, Stratford, E., at a cost of £300, if money for the payment of wages, about half the estimated cost, was locally provided; and to make a grant for tree planting in thoroughfares in St. Luke's, E.C. A letter was read from a member generously offering a sum of £5000 for the laying-out and permanent maintenance of Soho Square, W., as a public garden if transferred to the local authority, which offer the Association had placed before the committee of management, who had it under consideration. It was reported that the Association had during the month taken part in a deputation to the City corporation, soliciting a grant of £3000, being the balance required to complete the £75,000 needed for the purchase of Hackney Marshes, E., 340 acres in extent, a scheme set on foot by the Association early in 1890. The secretary stated that the London County Council had to purchase 41 acres of the Hilly Fields, S.E., for £40,350, upon the joint-committee of the Open Space Societies and residents handing over the money they had collected, amounting, with the £7000 subscribed by the Greenwich District Board,

to over £17,000; and that £700 was urgently needed before the 21st inst., the last day for depositing the Bill, for the purchase of the Paddington recreation-ground, at a cost of £50,000. A donation was received from a member for tree-planting in Pancras Square, N.W.; and the Hackney District Board agreed to pay half the cost of similar work at Stamford Hill, N. Another member, Lord St. Germans, kindly expressed his willingness to transfer his rights over Kildrooke Green, S.E., to the London County Council, which would ensure its preservation as an open space.

STOCK-TAKING: NOVEMBER.—Whilst so much is being said and published respecting the unemployed—it is the season of the year—one takes up the Board of Trade Returns with a little trepidation, somewhat allayed on making the pleasing discovery that the exports for the past month show a deficit of less than a quarter of a million, as compared with the same month last year. True, the imports show a great falling off, but this is in value, and the largest reductions are in the values of food supplied, and in raw materials used in textile manufactures. As all the world knows—more especially that section of it producing the food and the raw materials—prices have gone down very considerably; our own agriculturists know this fact, and are to-day carefully scanning the position with a view to legislation. It is useless to deny that there is a slackness in general trades, but not to the enormous extent some folks would have us believe, in the face of the value of British and Irish manufactures exported. The following figures are from the "summary" table of the returns for November:—

IMPORTS.	1891.	1892.	Difference.
	£.	£.	£.
Total value for month	£13,861,389	£38,898,373	—4,963,016
§II.—(A.) Articles of food and drink — duty free ...	15,392,756	13,058,620	—2,244,136
(B.) — do., dutiable	2,619,209	2,818,758	+199,549
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	10,968,564	8,913,754	—2,054,810
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,484,450	3,505,244	+20,794
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,944,693	1,621,563	—323,130
(B.)—Parcel Post ...	39,214	28,983	—10,231

In the following little table some of the figures are well worth consideration, especially those showing increase. Oranges and Lemons are given this month, as the season of greatest consumption is close at hand. The figures relate to the past month and the same period in 1891:—

IMPORTS.	1891.	1892.	Difference.
Fruits, raw:—			
Apples ... bush.	950,011	901,959	—48,052
Cherries ... ..	...	...	...
Oranges and Lemons ..	179,636	675,974	+496,338
Pears ... ..	...	19,268	+19,268
Grapes ... ..	...	99,012	+99,012
Unenumerated, ..	134,762	29,584	—105,178
Onions	581,003	446,711	—134,292
Potatoes ... cwt.	79,032	403,103	+324,071
Vegetables, unenumerated, raw, ... value	£55,896	£62,912	+£7,016

It may be interesting to note here, that the various fruits imported from California last season footed up the respectable total of 240 tons, two-thirds of which (160 tons) consisted solely of Pears. The capacity of this country for fruit grows day by day. "Good Tomatoes," said a dealer the other day, "will sell here to any extent," and so we are glad to note a promise, held out by growers at the Cape, of a

supply during the coming season. What the amount to be put on the market may be we know not; if the quality be good, certainly there will be few left unsold. Some months since we referred to the high price of vegetables in the Transvaal; there are some difficulties in growing these in that locality. Mr. FORD, formerly H.M.'s Attorney-General at the Cape, who figured in the Boer War, and has done much for the development of mining at Kimberley and Johannesburg, informed the writer a short time since of his experiences in vegetable growing. He desired to have some out-door employment and succulent green stuff, so made himself a nice little garden. But one fine day a cloud appeared in the sky, travelling rapidly in the direction of his home-stand. Down came the hail, of Hazel-nut size; and when it had vanished, it was discovered that the garden had kept it company. Whilst noting things in that part of the globe, it may be interesting to some to learn that tobacco in Natal promises to be a success. Some Havana seed was sent from home, and present appearances of the plant promise well for coming harvests. Still further to the East, and we learn from Simla of recent date that the Indian Government have determined to encourage the growth in that neighbourhood of English fruits, and have agreed to expend Rs. 2000 annually for seven years for that purpose. Carefully expended, we have no doubt conclusive results will be obtained. In the matter of—

EXPORTS.

there is little to add to what has been noted above. The figures for the month are £18,549,340, against £18,790,949 for November, 1891, or a decrease of £241,609. The exports of British and colonial merchandise show an increase for the month past of £410,796. If the iron industry in this country leaves much to be desired, it is but a poor satisfaction to know that we are very far from being in an isolated position; but we are looking forward to better times, after the rest of Christmas and New Year's holidays.

ROYAL BOTANICAL SOCIETY OF BELGIUM.

M. EM. RODIGAS, the Director of the National School of Horticulture of Ghent, has been elected President of the Society. In view of the forthcoming Quinquennial at Ghent, this appointment is specially significant.

THE LORD LIEUTENANT OF IRELAND.

The Lord Lieutenant of Ireland (*vide Daily Graphic*) was on Friday, December 9, presented with an address by the members of the Royal Horticultural Society of Ireland. In reply, his Excellency said the study and practice of horticulture would lead to the promotion of an industry which would be of great importance to the country.

THE NATIONAL ROSE SOCIETY.

The annual meeting of this Society was held in the rooms of the Horticultural Club on Tuesday last, under the Presidency of the Rev. W. WILES. The Treasurer announced his intention to resign, one reason for the step being the backwardness of the members in forwarding their subscriptions, and the great and quite unnecessary trouble and expense thus given to the executive. Ultimately, Mr. HAYWOOD was induced to withdraw his resignation, and to continue for another year, his further retention of office being made conditional on the better behaviour of the rosarians, or at least of a section of them. An animated discussion arose as to the date on which the metropolitan show should be held, Rev. J. H. PEMBERTON arguing at great length in favour of a later date being fixed. He was supported by other speakers, and the ultimate result was that Mr. PEMBERTON's proposal was lost by a small number, and the metropolitan show will be held at the Crystal Palace on Saturday, July 1. Mr. PEMBERTON then proposed that the affairs of the society be managed by a committee of forty, to be annually elected by ballot. This was carried. A proposal to allow voting by proxy was lost. The new rule requiring amateurs to show according to the number of exhi-

bition varieties grown by them was stated to have worked very well. The provincial show of the society will be held at Worksop on July 13. The financial condition of the society is so far satisfactory, the balance at the bankers over disbursement (£687 11s. 4d.), amounting to £31 16s. 7d.

THE NURSERY AND SEED TRADE ASSOCIATION, LIMITED.—On Friday, the 9th inst., the annual dinner of this Association was held at the Guildhall Tavern, Gresham Street. The President (N. N. SHERWOOD, Esq.), presided, and was supported on the right by Mr. H. J. VEITCH and Mr. H. TURNER, and on the left by Mr. R. CATHERALL, of Kirkham, Lancashire. The vice-chair was taken by the Treasurer, Mr. W. J. NUTTING. The Chairman in proposing the toast of the Association, said

might be expected to be in town. Mr. H. J. VEITCH, whose name had been coupled with the above toast, said that he was sorry to have taken the place that ought to have been given to Mr. W. PAUL, to whose efforts the success in starting the association was very largely due. Mr. VEITCH, however, would not yield to any person in the desire he had for the welfare of the society, and spoke as to the good which it had already done. Since 1885 the society had succeeded in collecting £22,516, which it had undertaken after the various nurserymen and others had failed to get in. The general meeting, which had usually been held previous to the dinner, had been postponed until January 11, 1893, at 6 o'clock, when the report (which, through unavoidable reasons, was not fully prepared for the afternoon meeting), would be presented. Mr. W. PAUL, in proposing the

EARLY FLOWERS.—A correspondent, writing from Herne Hill, says that spring flowers blooming in his garden on December 10, were Primroses, Daisies, and Pansies.

DECEMBER HORTICULTURAL MEETING AT GHENT.—Certificates of Merit were awarded to the following plants:—1st, *Odontoglossum crispum guttatum* to M. J. Hye—a fine example, bearing thirty fine flowers evenly marked with dark, nearly black spots. 2nd (à l'unanimité), *Kentia Forsteriana aurea*, to M. Petrick; this plant has leaves and petioles of a bright orange-yellow, distinguishing it from all other Palms. 3rd, *Cypripedium Charles Canham*, to M. J. Hye; with flowers of unusual size, the lip claret-coloured, over 4 inches long, as is the dorsal sepal, thus the complete flower is about 8 inches across. Besides the expanded blossom, the specimen bore eight buds, being a very strong plant. 4th, *Odontoglossum crispum* var. to the same; noticeable for the numerous and irregular red markings with which the pure white flower is variegated. 5th, *Dendrobium Phalaenopsis* var. *Schroderianum*, to M. Desmet-Duviver, shown for the first time; the dark red flowers render it superior to the type. 6th, A lot of six *Cypripedium Alberti*, to M. Jules Hye; this fine hybrid was described in the *Gardeners' Chronicle* for December 2. 7th, *Cypripedium radiosum*, a new hybrid, from the same, raised from *Spicerianum*, the dorsal sepal is very large and freely flushed with rosy-lilac. Certificates of merit were allotted for:—1st, *Vriesia aurora major*, to M. Robert Grenier, a fine spike of very bright orange-red, with remarkable habit and foliage, the leaves of glossy green are arranged in a rosette—the plant is a hybrid between *V. Warmingi* and *V. pittacina*. 2nd, *V. multicaulis*, still more bright in colour than the former, but of inferior habit and foliage; also from M. R. Grenier. 3rd, *Cineraria maritima aurea* var., from M. Fr. Desbois, leaves evenly edged with golden yellow—a promising plant for massing; 4th, *Zygopetalum Burkei*, to M. A. Van Imshoot, a rare but not very showy variety; 5th, *Oncidium Phalaenopsis* var., to the same (par rappel); 6th, *Dendrobium Cassiope*, also to the same—a very interesting hybrid from *D. japonicum* and *D. nobile*; 7th, *Cypripedium Gabrielle Moens*, to M. J. Moens—a very distinct hybrid from *C. Spicerianum*; 7th, *C. Chamberlainianum*; 8th, *Odontoglossum crispum* var. *myriostigmum*, the white flower covered with many small brown specks. Honourable mentions to:—*Lastræa lepida* (for culture), to MM. Duriez Frères; *Aralia gracillima* (for its flowers), to M. B. Spæ; *Cypripedium Arthurianum*, to M. J. Hye; *Dendrobium formosum giganteum* and *Odontoglossum* spec., with a fine truss of sulphur-coloured flowers spotted with black. A Botanical Certificate to *Amblostoma tridactylon*, from M. A. Van Imshoot, a very curious Orchid in appearance, rather suggestive of *Pilea calitrichioides*. Ch. De B.



FIG. 113.—AZALEA INDICA IMBRICATA: DOUBLE-FLOWERED. (SEE P. 741.)

that during the year they had lost many members through death and other causes, but that the additions they had made were just a little in excess of that number. Still, the Association was not progressing at the rate it might be expected to do, and he urged all who believed the objects of the Society were good to do their utmost by personal persuasion to enlarge the circle of members, and thus increase the influence of the Society. The Society was the means of establishing unity among the members of the trade, of disseminating information connected thereto to the members, and of collecting debts, &c., that individuals members were unable to obtain in the usual way. The Chairman laid great stress on the benefits that ought to result to the trade through the members meeting together and exchanging views and ideas, suggesting that to this end it might be desirable to fix the date of their annual dinner upon some day, when, through sales, or other business, many provincial nurserymen

toast of the trustees, said that a very satisfactory point was, that when the balance-sheet for the year was completed, the Society would have £100 in the bank. Mr. PAUL thought that the commercial aspect of horticulture had not been looked after quite so much as that of the artistic and scientific aspect, and such attention as it required could only be obtained from such an Association as this. Mr. CATHERALL, of Lancashire, in replying for the visitors, was able to say that Lancashire had not shared fully in the depression other counties had experienced in agriculture; and horticulture, he was glad to say, was progressing in that district. Referring to the depression that existed in agriculture, he advised friends of agriculture and of horticulture not to waste their energy in seeking to benefit these trades by means which it was apparent to all, are impossible to be obtained. He heartily accepted an invitation to become a member of the association.

"THE HORTICULTURAL DIRECTORY."—This indispensable little book appears upon our table in its 34th annual issue. It is full of information likely to be required by gardeners, and may be had for a shilling at 171, Fleet Street. It is not usual to comment on advertisements, but knowing how difficult it was at one time to procure London Purple or Paris Green for spraying purposes, we are glad to see at last an advertisement showing where it may be procured. It is of no use for the press to recommend articles for trial or general use, unless they are in a position also to say where the articles may be obtained. When we were recording the spraying experiments made with so much success in America, and advocating their repetition here we had to send to America for the article, which, as it turned out, was manufactured here! Many correspondents applied for information which we could not give.

COUNTY COUNCILS AND EXPERIMENT STATIONS.—Mr. ROBERT WARINGTON contributes to the Record of technical and secondary education, a paper descriptive of the agricultural experiment stations in the United States. There are fifty-four of them

[to our one or two!] each under the direction of a staff comprising some or all of the following officials: an agriculturist, a chemist, a botanist, a horticulturist, an entomologist, a bacteriologist, a veterinarian, and a meteorologist. Mr. WARINGTON, who writes from personal experience of some of these institutions, describes the kind of work done, the lectures given, the experiments carried out. We need not enter into detail on these matters, as our columns contain frequent extracts from the *Bulletins* of the several stations, so that we can cordially agree with Mr. WARINGTON's concluding sentence—"May we not hope that our own county councils will realise the immense importance to the country of an improvement in agricultural practice, and by carrying out schemes of agricultural [and horticultural] instruction and investigation, fulfil in England the duties so energetically undertaken by the various States in America?"

DISAPPEARANCE OF DESERT PLANTS FROM EGYPT.—This is attributed by Mr. FLOYER, in the *Kew Bulletin*, to the camel, whose necessities entail the destruction of a large amount of herbage. Some system of conservancy, therefore, is indicated.

THE TAJ GARDENS, AGRA.—These were described lately by Mr. J. H. VEITCH in our columns. The last number of the *Kew Bulletin* contains a note on the subject of the future management of the gardens, by Mr. WESTLAND, an old Kew man, who has rendered good service in Hong Kong.

THE GOLD COAST BOTANICAL STATION.—The last number of the *Kew Bulletin* contains a report by Mr. CROWTHER on the prospects and condition of the botanical station. Sixteen acres of "bush" were cleared, Potatoes planted, as well as Cocoa-nut Palms, Cacao, Bananas, Liberian Coffee, Oranges, and other useful plants. The record affords testimony to the energy and activity of Mr. CROWTHER.

MAROGOGEPIC (COFFEA SP.)—This superior Brazilian Coffee, a plant of which was introduced by the Acclimatisation Society of Queensland four years ago, continues to thrive admirably, and is at present showing signs of an excellent crop. The plant is now 9 feet high, with a spread of 6 feet 6 inches of the lower branches; in habit it much resembles the Liberian Coffee, the foliage being much larger than the Arabian sort. Last year's crop of berries was all sown, and about a dozen and a half of plants will be available for distribution in the spring. About 300 berries are already set on the plant, and about a similar number are in younger stages of development. Six grafted plants were sent out last year, but up to the present no returns have come to hand as to the success attending their growth. In good soil this Coffee should produce good results. The ground at Bowen Park, although rich, is not of sufficient depth to fairly test the plant's capabilities; but it is hoped that with some of the young plants being at present raised, experiments in more favoured soils and situations will prove this new Coffee to be a most profitable cropper.

"INSECT LIFE."—The last issued part (November) is chiefly devoted to the proceedings at the fourth annual meeting of the Association of Economic Entomologists at Rochester (N.Y.), in August last. The contents are very varied, and form an interesting testimony to the amount of useful work done by the State entomologists and others. It is not pleasant reading, however, to see how much more energetic our American cousins are than we in all matters relating to the application of science to practical art.

A DOUBLE CALOCHORTUS.—We do not admire double flowers for their beauty, but for their interest and durability. Others prefer double to single flowers, and these will be interested in learning that a double form has been found in California. *Triteleia*

laxa is also noted as having been found with double flowers in San Francisco, according to a writer in Professor L. GREENE's journal, *Pittonia*.

L'ILLUSTRATION HORTICOLE for November 15 gives the following particulars concerning the consumption of Oranges in England; the figures quoted are astonishingly large:—"In Italy, there are 5,400,000 Orange trees, which yield an annual harvest of 1,600,000,000 Oranges, that is to say, an average of 300 Oranges per tree. In Seville, the province which furnishes the most in Spain, each tree bears on an average 6000 Oranges. From St. Michael, in the Azores, from an area of 210,000 acres only, there are sent annually to England 250,000,000 Oranges, valued at £300,000. Spain sends to all countries about 1,000,000,000; Italy rivals Spain with a like number; Greece exports only 100,000,000, and the Azores about 400,000,000. It is calculated that in England, after their importation, each inhabitant spends 1s. a year on Oranges; or, remembering that the fruit is resold at retail prices, it would be more accurate to reckon the cost at nearly 2s. per person."

KENT COUNTY COUNCIL EXPERIMENTS COMMITTEE.—The committee held their fourteenth meeting last Thursday, at the Horticultural College, Swanley. After the minutes had been read and confirmed, Professor CHESHIRE gave an address showing how a grower not possessing a knowledge of chemistry could ascertain what manure a soil requires. The substance of the Professor's remarks were identical with those which he made at Beckenham on November 22, which we published last week, p. 706. A discussion followed on soot, kainit, and basic phosphate. It was decided that the committee should not meet again until after Christmas.

WILD FLOWERS AT AN AUSTRALIAN FLOWER SHOW.—A show of wild flowers, says the *Daily News* of December 5, was held in Perth Town-hall, Australia, last month, when the summer blossoms were in full variety. It was the first exhibition of the kind ever held in Western Australia, and the display is described as "dazzlingly beautiful," the number and variety of bouquets and table decorations being very great. The show was opened by the Governor, Sir WM. ROBINSON. This is a step which we have frequently urged on our colonial friends. Why should they go out of their way to grow *Chrysanthemums* when they have such riches at their doors.

THE BLENHEIM ORCHIDS.—More than 1900 lots, including many specimen plants, will be offered for sale by Messrs. PROTHEROE & MORRIS, on Monday next, and four following days, at noon. The sale will take place in Blenheim Palace Gardens, near Woodstock. A special train to Woodstock will be run in connection with the train from Paddington at 9.50 A.M., and from Birmingham, G.W., at 9.25 A.M. A train leaving Worcester at 9.10 will be stopped at Handboro' on the first three mornings of the sale. All the stations are within 2 miles of the gardens.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—Mr. B. STRETTON, of Wisboro' Tower, Billingshurst, Sussex, has forwarded to the Secretary of the above Institution, 26, Charles Street, St. James's, the handsome donation of £1000. In accordance with the wish of the donor, the Council have resolved not to invest this sum, but to spend it in providing additional pensions for ruined farmers and their wives and widows.

GOVERNMENT PLANTING IN IRELAND.—We learn that large orders for trees have been sent to Messrs. DICKSONS (Chester) by the Irish Land Commissioners, for planting on the west coast of Ireland.

THE SURVEYORS' INSTITUTION.—At the ordinary general meeting, held at 12, Great George Street, Westminster, the President, Mr. C. J.

SHOPPIE in the chair, a paper was read by Mr. J. DOUGLAS WALKER, Q.C. (Associate), entitled "Rights of Way." A discussion followed and was concluded, and a vote of thanks was unanimously passed to Mr. WALKER for his paper. The next ordinary general meeting will be held on Monday, December 19, when a paper will be read by Mr. E. TIDMAN (Fellow), entitled "Sanitary Ventilation." The chair to be taken at 8 o'clock.

CREWE HALL.

CREWE HALL, Fig. 112, p. 737, in one sense, suggests Enville. Both places are very close to unlovely towns, and yet show beautiful sylvan scenery. Crewe Town, which has become thickly populated in almost an American short time, consists of long narrow streets of ugly red-brick houses, all of the same pattern, and over it ever hangs the smoke from the railway factories, making the air murky and muggy. It is an agreeable surprise, therefore, to enter into the country, as it were, at the park gates, which are on the outskirts of the town. A drive of nearly two miles leads up to the mansion, which is Tudor in architecture. The family name, appropriately enough, is also Crewe, and several of the name have played an important part in history. In the time of the Stuarts two of the Crewes seem to have been of quite different temperament. Lord Chief Justice Crewe succeeded Sir Edward Coke, and, like his great predecessor, was dismissed from office for denying the legality of Charles I.'s forced loans. Nathaniel Crewe, Bishop of Durham, however, said "that he could not live outside the King's smile," and was the only important bishop who supported James II. in his measures for the advancement of Roman Catholicism. Macaulay pours out the vials of his wrath on him. In later history they have always been known as staunch Whigs. The original Hall was built in 1636; it was burnt down in 1866, and was restored under the direction of E. H. Barry.

The north front, Fig. 112, p. 737, rather curiously, is the most elaborately laid out, and it is in Nesfield's best style. Under the windows is a terrace-walk with a balustraded wall. From this a broad flight of steps, with two stone lions on either hand, leads down to a rectangular lawn, with flower-beds in the centre, and clipped trees round the edge. Another flight of steps descends to a broad walk, extending downwards for a considerable distance, with flower-beds on both sides. The beds here are mostly circular, and were very bright and varied in colour, and some semi-tropical plants added much to the enlivening effect. But the flower-bedding, well done as it was, was only a minor factor in the landscape. For from the very start the beautiful natural curving of the outline of the lake, gleaming in the dip below, had been in full view. The opposite side of the lake is wooded with openings in places; to the right there is a pretty verdurous island, beyond which the park of 600 acres undulates away into the far distance. Thus in this flower garden one can stand amidst pretty surroundings, and gaze long and lovingly on a beautiful natural scene. The walk round the lake, too, is very well worth taking. In the twilight, often in the hush of Nature, there is an absolute stillness of the water very provocative of romantic dreams and fancies. That the Crewe family have felt this charm is proved by a temple in a grove of trees being called the "Temple of Peace."

The balustraded terrace-walk is continued round to the east side, and steps descend, as before, to another smaller flower garden, which serves as a base to a long *Araucaria* avenue. Between every two trees are circular beds, mostly filled with Dahlias, single and double. At the end of this avenue, turning to the right, one comes to what are called in Scotland "the policies," i.e., walks through a lawn, on which are growing Conifers and clumps of shrubs. The most notable Conifers are perhaps *Picea grandis* and *Picea concolor* violacea, both of which promise to make fine specimens. Some high Scotch Firs gave an air of dignity to all the other trees near them, and a young Oak avenue will be in time

a great feature. A large old-fashioned rosery, which one traverses on returning to the house, is suggestive of the place before Nesfield transformed it.

On the south front is the main approach, the carriage-drive circling round a lawn, on which there is another flower garden. On the west side, high trees come up to the house, through which a road leads to the kitchen garden; and here I cannot refrain from writing in the first person, in order to say that I have seldom, if ever, enjoyed a stroll through glass-houses as I did under Mr. Whitaker's guidance. His wide knowledge of plants, and his evident fondness for everything under his charge, made me realise how he had grown to a Gladstonian old age in his master's service. As he said himself, "Lord Crewe and I have grown old together."

The houses for fruit growing are very numerous, and well-managed. One house for Peaches might be copied with advantage elsewhere. The front lights are at a far greater distance from the back-

leaved Ouvirandra; and a frame behind a north wall was filled with choice Ferns, such as Todeas and the Killarney Fern.

The surroundings of the kitchen garden are quite unique. What used to be an old drying ground has been turned into one of the prettiest parts of the ground. Between two high Yew hedges, planted by Mr. Whitaker himself twenty-five years ago, is a well-kept lawn and three conservatories in a line with flower-beds in front of them. These conservatories are very artistically designed, the middle one being dome-shaped, and each one of them is kept at a different temperature. The first we entered was the highest in temperature—as high as a stove. A good many Orchids were cultivated in this house, including good specimens of *Vanda teres*, *Dendrobium Dearei*, the sensational *D. Phalænopsis*, and *Cattleya citrina violacea*. The conservatory in the middle was intermediate in temperature, and a very fine effect was made by a different creeper

with pyramidal fruit trees, and in the other with Irish Yews, *Cupressus Lawsoniana*, *Thuia Lobbi*, *Thuopsis dolabrata*, &c. No visitor should omit to follow this walk round, for at the turn it is lined with Cedars of Lebanon, and then passes for a long distance into the shade of "immortal Elms." *Vagabond.*

RHODODENDRONS.*

(Continued from p. 698.)

CHINESE SPECIES.

The two best known Rhododendrons from China are the hardy deciduous-leaved *R. sinense*, commonly called *Azalea mollis*, and the Indian *Azalea*, which, notwithstanding its name, is not known to be wild in India. Besides these two, there are over sixty other species known in China and Japan, many of them in the Province of Yunnan. A few of these have been introduced through the Jardin des Plantes, Paris, whither seeds were sent a few years ago by the missionary-collector Delavay. I have seen the dried specimens of these new kinds, and like the look of them. Mr. Hemsley says of them that, taken as a whole, they are by no means so gorgeously beautiful as the Himalayan Rhododendrons, though many of them are highly ornamental.

R. Fortunei is a plant of special interest, as it bears a close resemblance to the grand *R. Aucklandii*, although not quite so large in flower; it is quite hardy in the south of England. It was introduced by Fortune, and sold by auction in Stevens' rooms in 1859. A peculiarity of this species is in the flowers often having six or seven segments, the usual number being five.

R. rhombicum, from Japan, is an interesting plant, with deciduous leaves and rosy-purple flowers. It came to England through the St. Petersburg Botanical Gardens in 1872.

R. linearifolium is a remarkable plant from the same country, which was introduced by Standish in 1869. It has narrow soft hairy leaves and loose clusters of pale rose-purple flowers, which have long corolla lobes, free to the base. It is said to be quite hardy.

"*Azalea mollis*" is a garden plant in China and Japan. It was in cultivation here in 1824, and known then as *A. sinensis*. Fortune reintroduced it in 1845, since which time it has attained great popularity as a garden plant. This and several other species are referred to again under *HYBRIDS*.

"*A. indica*" has a history very nearly analogous to that of the Chrysanthemum in regard to its introduction, cultivation, and improvement in Europe. In the *Botanical Magazine*, t. 1480 (1812), it is figured, and described as, "A very rare plant, which has been long anxiously sought for by cultivators of curious and scarce exotics. We believe there are not above three or four individuals of it in the country, and of these only the one in the collection of James Vere, Esq., from which our drawing was taken, has as yet produced any flowers." In the same place it is stated that Kämpfer enumerated twenty-one varieties cultivated in Japan, including white, red, yellow, purple, and scarlet, with spots of the most contrary hues. Fortune says of this species, "Every mountain and hill in the central and southern provinces of China is covered with these beautiful plants. They are like our own Heaths, and quite as abundant. By far the finest are cultivated in gardens, indeed it was only in gardens that I could find any worthy of introduction into England." The Dutch cultivated *A. indica* in 1680, but soon lost it, and it was not reintroduced until the beginning of the present century. Mr. Knight, of King's Road, Chelsea, purchased in 1833 five varieties, one double-flowered, two reds, and two large-flowered, from a sailor who had brought them from China. Messrs. Low & Co. advertised twenty-one named varieties in 1841. Since then the French, the Belgians, and others, have crossed and bred from this plant with really wonderful results. I question if there is anything in the

* A paper read before the Kew Gardeners' Society, by W. Watson, Assistant Curator.



FIG. 114.—AZALEA OBTUSA. (SEE P. 741.)

wall than they are usually placed. This enables the quadrant-shaped front trellis to be put nearer the glass, without in the least shading the trees behind. Camellias are grown on the back walls, and thrive in a wonderful way in that position; they begin flowering at the end of September. Melons are grown in quantity, the favourite variety being McIndoe's Scarlet Premier. Splendid luscious Figs are grown from plants in pots plunged up to the top in pits. Two new houses for growing Pines were being erected by Allen of Holmeschapel. This enterprising firm have put into the work all their latest improvements. They are 8½ yards wide, an unusual breadth, and are glazed with a patented system of Mr. Allen's, which seems an improvement on other systems. A groove is cut in the upper surface of the rafters, by which the condensed vapour can run down into the pipes, which are made of wood painted with an anti-corrosive paint, no lead covering being put on because it makes the wood decay quicker. The ventilation system, a combination of the screw and lever, could be worked without any trouble. The stoves were very well furnished, interesting plants being the Vanilla and the lattice-

clambering up each iron pillar. As they were nearly all in flower at the time of my visit, I will give a list of them:—*Solanum jasminoides alba*, *Clematis indivisa lobata*, *Begonia fuchsioides*, *Tacsonia*, *Luculia gratissima*, and a *Passiflora*, an *Abutilon Volkemi*, and a *Fuchsia*. Growing as these climbers were, in a state of abandon, it is no wonder his lordship often makes this house a retreat. The third house is a little cooler, and the centre is taken up with tall-growing Palms, Tree Ferns, and Cycads. There are iron pillars in this house, too, each devoted to a separate climber. Without giving a full list, I will notice those that were most effective; they were *Clerodendron Balfourianum*, *Hibiscus*, *Bougainvillea*, and *Justicia carnea*. The biggest Cycas in the house was raised from seed by Mr. Whitaker, soon after he came in charge. It was a very good idea erecting these three conservatories in connection, and no one can go through them, so well stocked are they, without being intensely interested. But this is not the only reason why I claimed that the surroundings of the kitchen garden were unique. All the way round is a gravel walk; at the entrance it is lined in one direction

way of flower improvement more creditable to horticultural art, except, perhaps, the Rose and *Chrysanthemum*.

"*A. amana*," "*A. obtusa*" (fig. 114), "*A. calyciflora*," well-known garden plants, are merely geographical varieties of *A. indica*. They are all hardy in the south of England. Two other hardy forms have lately been distributed by Messrs. J. Veitch & Sons, named Daimio and Mikado. In some parts of England the old white *Azalea* is hardy. Beds of it are being planted in the open air at Kew.

NORTH AMERICAN SPECIES.

Everyone of the *Rhododendrons* known to be wild in North America has been, or is, in cultivation in England. The evergreen species, viz., *californicum*, *macrophyllum*, *maximum*, *punctatum*, and *catawbiense*, are perfectly hardy here. The last-named shares with the European *R. ponticum*, and several of the Himalayan species, the distinction of being the parents of the splendid race of hardy *Rhododendrons* we now possess. *R. catawbiense* grows from 3 to 20 feet high, has broad leaves, and lilac-purple campanulate flowers. It is a native of the mountains of Virginia to Georgia. According to Loudon it was introduced in 1809, and soon became common in gardens. *R. californicum* is very similar to it. *R. maximum*, the Rose Bay of the Americans, is a beautiful plant, equal to many of the hybrids, but it does not always thrive in English gardens. It blooms late, usually in July. *R. punctatum*, from Carolina, is also a late-flowering kind.

The deciduous species, commonly called Swamp Honeysuckles, rank with the very best of the garden plants from North America. The deliciously-fragrant *R. calendulaceum*, or, as it has been called, *R. coccineum*, is said to colour wide stretches of country in Virginia with its gorgeous flowers in June. They are of every shade, from lemon-yellow to the most brilliant fire-red, even when wild. This species was introduced by Lobb in 1837, when it was at once called into requisition by the hybridist; Mr. A. Waterer, amongst others, having used it largely as a breeder. *R. arborescens*, *R. viscosum*, introduced in 1734, and much used for hybridising; *R. canadense* (*Rhodora*), and *R. vaseyi*, are the other wild *Azaleas* or Swamp Honeysuckles of North America. They are all as fragrant as the plant from which they take their name, and they are as happy in the ordinary border of the English garden as *Laurustinus*. The collection of them in the arboretum at Kew is a gorgeous picture when in flower, in June. *W. W.*

(To be continued.)

PLANTS IN FLOWER AT LA MORTOLA IN DECEMBER.

HAVING just returned to my garden here on the Riviera, after a more prolonged absence than usual in England, it may be of interest to some of your readers, especially those who reside on this coast, or visit it during the winter, to know what plants I have in flower in the open border at present.

The usual summer drought which regularly afflicts these parts broke up at the end of September; a copious rainfall has started the winter vegetation most satisfactorily, and although the nights are already very cold, and ice is to be seen in the valleys, the flowering of *Roses* is abundant, and vast quantities are daily despatched by those who make a business of supplying cities in less favoured climes.

After the *Roses*, perhaps *Salvias* make the greatest show at this time. I have nineteen species in blossom, of which *S. frutescens*, with its large scarlet flowers in panicles, and *S. leucantha*, with a white and lavender woolly texture, are the most striking.

Of the *Bignoniaceæ* there are five species in flower, the most splendid of which is *Pithecoctenium buccinatorium*, climbing on my house with gorgeous deep scarlet trumpet-flowers. *Tecoma capensis* blossoms very freely here through the winter, and *T. stans* is remarkably pretty with its bright yellow flowers.

Aloe ciliaris, of which I have a very large plant growing on the south side of my house, is covered

with hundreds of red flowers, and climbs most luxuriantly in a tangled mass near a giant *Euphorbia abyssinica*, 20 feet high; *Senecio præcox*, *Opuntia cylindrica*, and *O. subulata* being all more or less covered by its rampant growths.

In the pergola or trellised walk are the following in blossom, *Cypripedium insigne*, *Æschynanthus grandiflorus*, *Daphne indica*, *Linum trigynum*, and *Reinwardtia tetragyna*. Lower down, prominent shrubs in flower are *Cestrum aurantiacum*, *Chænesthes fuchsoides*, and *Ichroma grandiflorum*, the two latter will probably be cut back by the night frosts in January. Of the *Proteaceæ*, *Banksia marcescens*, with its huge bottle-brush flowers, and *Hakea eucalyptoides* resembling a scarlet pincushion, arrest the attention of the most superficial observers. An old wall covered with the intensely scarlet flowers of *Tacsonia manicata* is a grand sight. Of rare plants in blossom I may mention *Melianthus Trimenianus*, *Pilocarpus pinnatifolius*, *Grevillea Preissii*, *G. glabrata*, *G. rosmarinifolia*, and *G. Thelemanniana*. *Dahlia Maximiliana*, a small tree, will keep in flower all the winter, should it not prove too severe.

Datura arborea and *D. sanguinea* are full of flower, as are two species of *Bouvardia*, but will hardly resist the cold of January; not so *Buddleia auriculata*, and *B. madagascariensis*, which are hardy enough, as are the *Fuchsia*-like *Correa cardinalis* and *C. Colvillii*. *Clematis cirrosa* loves the sun and drought, and is very pretty with its dense foliage and pretty hanging bell-shaped greenish flowers. *Eriocephalus africanus* flowers profusely through the winter, its leaves have an agreeable Thyme-like scent. The Olive crop is nearly a failure this year, but Oranges and Lemons are abundant and cheap.

Of rare fruits in this garden, I may mention *Carica cundinamaricensis*, *Diospyros kaki*, *Solanum betaceum*, *Cydonia sinensis*, and *Psidium Cattleianum*, all eatable except perhaps the first-named, which I can only recommend for its delicious scent. The fruit of *Pyrus sorbus* is most excellent when eaten at the right time, but it is not seen at the hotel tables. The fruit of *Aberia caffra* is now past, while of the *Citrus* family the Buddha-fingered *Citron* and *Pommalo* from China, the historically interesting *Santa Sabina Orange*, and the *Bergamot Orange* are hardly ripe yet.

To those who love plants, who can take at least ten days' holiday, and are proof against the seductions of the gaming-tables at Monte Carlo, I suggest a Christmas spent in the brilliant sunshine and clear air of this coast. The total number of species in blossom I find to be 228. *Thomas Hanbury, La Mortola, December 12.*

HOME CORRESPONDENCE.

THE CONIFER REPORT.—I am disappointed at not finding any report on the growth of these plants on bad land in bad condition, such as that which obtains in nearly all the Conifer districts from the Dutch frontier to Hamburg, and such as exists in many parts of Surrey, Berks, and Hants. In my own case, I have peaty-sand covered with an iron "pan" beneath. Underneath the pan is clay, and if the pan be broken up, the iron gets into the top soil whilst the pan reforms. We have also an insufficient rainfall, so that the results as chronicled from Scotland, Ireland, and the West of England are little guide to us. It is a pity the influence of iron was not discussed at the Conference; it is far more important than the presence of chalk, because a great many people plant Conifers on iron, whilst comparatively few plant them on chalk. Seeing how well the Scotch Pine does on iron-sand, the planter naturally thinks other Conifers will thrive there too. But which? This is just what we wanted to know from the Conifer Report, and just what we do not find in it. *Surrey*. [The Reports from the English countries are indeed meagre, as compared with those from Scotland, and many remarkable specimens in various parts of the country unfortunately are not recorded. A large number of circulars were, we are told, sent to English growers

but comparatively few were returned. This points, to the desirability of a second Conference in a year or two's time, to remedy the defects of the present Report. In the meantime, we shall be pleased to publish details such as those alluded to by our correspondent, measurements of particular specimens, &c. Ed.]

LILIES IN MR. WILSON'S GARDEN AT OAKWOOD.—It may save repetition in my note on our Lilies of the past season to confine it as much as possible to facts which seemed to be at all remarkable. *Lilium auratum rubro-vittatum* and *L. Krameri*, of very many shades of colour, growing among *Rhododendrons* in a mixture of vegetable soil and light loam, continued to flower well, as did *L. Leichtlinii* in light loam on the "mountain" side. Having a large bed of *L. auratum*, planted in 1887, where the plants were too crowded, we took up a number of bulbs, and came upon eight stems very near together. These all came from one bulb, which could be separated into seven good bulbs; and afterwards, when moving a quantity of Lilies to new beds, where they would be more in view, we found a bulb of *L. speciosum rubrum* with eleven stems, which divided into nine flowering bulbs. These had been undisturbed since 1885. From the same place we took two bulbs of *L. Szowitzianum*, each weighing 1 lb. 10 oz., one of them being solid, the other nearly divided into two. Our tallest stem of *L. giganteum* was 8 feet 9 inches, and had thirteen flowers. This is only a moderate growth, but *L. cordifolium* with eight flowers, and stem 5 feet 8 inches, was, I think, exceptionally fine. Our tallest *L. superbum* was 10 feet, and *L. pardalinum* 9 feet 6 inches. Our pot Lilies in the conservatory here, both the different varieties of *L. auratum* and *L. speciosum*, were unusually fine, and on repotting were found to have increased their bulbs both in size and in number. Their soil was old top spit turf in lumps, and leaf soil. Our Lilies here in the open, in sunk casks with the bottoms out, proved more than ever the advantage of this mode of cultivation. In one cask we had twenty-one stems of *L. tigrinum Fortunei*, the tallest 8 feet 6 inches high. Grown as close as these, of course the top soil should be renewed every year, especially with soil-exhausting Lilies like *Tigers*. The tops of the casks should not be sunk much below the surface of the surrounding soil. Where this was so we found some shrub roots had come in over the top of the cask. *George F. Wilson.*

CULTURE versus NATURE.—In your issue of December 3, there are some interesting remarks under the heading "Culture versus Nature," regarding the "constitutional flexibility" of plants with respect to altitudinal range and resulting temperature. Some remarkable instances of this flexibility occur in southern India, both in wild and cultivated plants. One very notable example of a wild plant, with cosmopolitan habits as regards altitude, is found in a species of *Dodonæa*. This shrub, which yields a great portion of the firewood used in Madras city, grows luxuriantly on most of the uncultivated sun-scorched plains of the Carnatic, along with purely tropical species; and yet it abounds at various elevations on some of the hill ranges, the highest point being a little over 8000 feet on *Dodabetta Peak*. At this high elevation it is in winter exposed to sharp frosts, and has as its companions various representatives of a temperate flora. Another plant possessing wonderful flexibility is the Australian *Grevillea robusta*. This very handsome tree has been introduced with much success in India, and may be seen flourishing in Madras, and also at *Ootacamund*, the latter station having an elevation of about 7500 feet. It may be noticed in passing that at high elevations it is liable to suffer somewhat from the frosts. The *Araucaria Cunninghamii* may also be seen growing at very different altitudes; but on the plains, as might be expected, it is very tender, and requires nursing. *G. Bidie, Jersey.*

EUONYMUS EUROPÆUS.—I see attention directed to this shrub in your last issue. It is indigenous here, growing tolerably plentifully in the park upon heavy soil, along the foot of a hill, which is occupied by Oaks. Here the largest plants reach some 20 feet in height, and they are, as Mr. Divers observes, very pretty objects in the autumn months, attracting the notice of the most unobtrusive person. This shrub could be effectively employed in suitable positions by the sides of carriage-drives and similar places, but it would not be advisable to use it, unless protected, where rabbits are numerous, for they appear to be very partial to its bark. Its wood is

very brittle, and old plants make numerous short twiggy growths, which produce its bright fruits in great numbers. We have a plant of *E. latifolius* in the pleasure grounds, but it does not fruit so freely as the common kind does, owing probably to being placed in a somewhat shady corner. It is slow in growth, as eighteen years ago it was 5 feet in height, and at the present time about 11 feet, but, according to Nicholson, it does not attain great height. *Thos. Coombe, Hendre Gardens, Mon.*

DAPHNE GENKWA, &C.—This shrub has stood well here for the two last winters without any protection (p. 702). *Diospyros Kaki* (p. 712), I have had good fruit for several years from a tree against a south wall. I believe it would do as a standard. This year the spring frosts cut back the young shoots, and I have no fruit, but the tree is very strong and healthy. *H. Ellacombe, Bitton, Bristol, December 10.*

CION OR SCION?—The statement which appears on p. 706, that the difference between cion and scion is not generally known is perfectly true, because no English or French author ever tried to use them as different words. If Bacon spelt the word cion, his contemporary Shakespeare spelt it syen (see Henry V., Act iii., Sc. 5, old editions); and Philemon Holland, another contemporary, in his translation of Pliny, spells it sion. In those days phonetic spelling prevailed over etymological. All that is known of the history of scion, which is a French word, is given in Littré's large lexicon. French authors are quoted to show that it was written cion in the thirteenth century, syon in the fifteenth, and sion in the sixteenth. Its derivation is doubtful, but Skeat and Littré favour the opinion that it is a corrupted form of the Latin word section, a cutting (these words all pass from Latin into French with the final n, which they originally had). Littré supports this opinion by the analogy of the German word for scion, schnittling, derived from schneiden, to cut. We do not, however, find that any Latin writer—and some treat very fully on the subject of grafting—uses section for scion. Inscition, which in classical Latin means the operation of grafting, is said to be used in very late Latin for scion, and some philologists have supposed that scion may be a corruption of (in)scition, but the earlier Latin writers always use surculus or calamus for scion. *C. Wolley Dod, Edge Hall, Malpas.*

OPEN SPACES.—One by one the London market gardens are disappearing, to be swallowed up by the devouring builder. Part of Dancer's ground at Chiswick is now covered with houses in the Duke's Avenue, leading to historic Chiswick House. A good portion of the extension plot known as Bagley's in the High Road is also devoted to bricks and mortar. It is pleasant with this inevitable state of things in London's teeming population, to refer to another side of the picture. At Fulham, at one time famous for its Cabbages (have we not a variety designated "The Fulham"?); one of the old market gardens there has been transformed into a recreation ground for the inhabitants, the work of formation and planting being at the present time carried out by Messrs. W. Fromow & Sons, Chiswick. *J. B.*

ROOT-WORK.—The propriety of employing the grubbed-up stumps of timber trees as a means of adding a feature, presumably of some sort of embellishment, to a garden, has been often discussed in your own and other gardening papers, and very opposite views seem to be entertained. I should on many points condemn the practice without qualification as being false in taste, and attended with so many serious objections, were it not that the custom is persistently advocated by gentlemen of skill and varied knowledge of the needs of horticulture. It is well to keep in mind that circumstances alter cases; there may be something said on each side of the question. In a flat country, without the resource of masses of stone, it is often necessary to form a screen for giving shelter to Ferns or other shade-loving plants, and roots being at command, I can well understand as a matter of convenience their being employed; and if the district is naturally dry, and the soil light, and roots from resinous trees used, one of my great objections to their employment is modified. If creepers are abundantly planted and trained, so as to hide what is beneath them, so much the better; but here your correspondent "A. Y. E."s objections come in with great force, and one's toleration of even the best form of root-work is shaken by the idea of the intrusion of rats, mice, and rabbits, creatures of varied tastes, but ever

prone to take that which is most valuable. Looking at the practice in another aspect, and as one justified by taste and picturesque effect, there is nothing to give a natural charm to it; the most obvious idea connected with it is an upheaval caused by an earthquake, such a convulsion alone turning trees upside down. In the endeavour to state the case as fairly as possible for each side of the question, and as modifying one insanitary aspect of it, I have mentioned the use of resinous roots, and their elevation in a sandy district, above the mean level of the ground; but roots of Elm, Oak, or other deciduous trees, made use of especially in a wet district, in a heavy soil, speedily bring about a state of things which had much better be avoided, rottenness very soon ensues, the dead or decaying roots become speedily the home of the all-pervading fungi. These luxuriate and mature, and their spores fill the air. Mosses and lichens appear, and their minute germs do not add to the purity of the air. The roots become the resort of slugs, snails, and beetles, and no corrective influences to contract the general state of rottenness and decay can be brought effectually to bear upon a woodland thus rendered dangerous to health, and affording no satisfactory aspect of beauty to justify its introduction. *W. Ingram, Belvoir.*

— In my note on root-work on November 12, p. 593, I gave an experience of it under specified circumstances. A first-class amateur hardy-plant grower has informed me that rabbits and rats had made him give up a root-work. This agrees with "A. Y. E." p. 711. I only thought of gardens where rabbits are not admitted. We have no trouble with rats, probably owing to cats having the run of the root-work. *G. F. Wilson.*

HOW TO CATCH WOODLICE.—Sink saucers half-filled with beer level with the ground; in this way, I have caught thousands in the Mushroom-house, in the Cucumber and Violet frames. Knowing how destructive woodlice are if they abound, I am sure many readers of the *Gardeners' Chronicle* will be glad to know the above simple remedy. *J. Hinton, Pull Court Gardens, Tewkesbury.*

EDINBURGH BOTANIC GARDEN.—I think that more of your readers who have the good fortune to know the Edinburgh Botanic Garden, will agree with the note of "Vagabond," p. 651, rather than with that of "Voyager," p. 712. I knew the garden in Mr. McNab's time, when alpine and hardy plants were his especial hobby, and got good lessons there, and since under Mr. Lindsay's care, who I think most hardy-plant growers will agree with me in classing at A1 as a cultivator. I wish he lived a little nearer here to consult with in difficult questions. The deeply-sunk slabs are formal, and do not profess to be otherwise. Mr. McNab thought the isolation of different plants to be very important, and he knew what he was about. I have not had the chance of seeing the garden for several years; but a friend, a good judge, reported a visit paid this year, and spoke enthusiastically as to the plants. *G. F. Wilson.*

THE GARDENERS' BENEVOLENT INSTITUTION.

—I have attentively read the excellent letter of your correspondent, J. H. Goodacre, upon this subject, although I may not, in all respects, quite agree with him. In the first place, I may say, that I think there can be no objection to confining the name of the institution to that by which it has long been known, viz., "The Gardeners' Royal Benevolent Institution," for the purpose of registration, as suggested. Your correspondent says, "Unless some sound practical inducements are brought forward, the young men will not enlist any more freely than has hitherto been the case." It is certainly hardly creditable to the gardening fraternity to think that its members should have hung back as they have done in assisting an institution which has for its sole object their benefit and assistance, should they unfortunately ever require the same. Even a feeling of gratitude might go far to induce gardeners, as far as lies in their power, to assist an institution which exists for their sole benefit, and which is at the same time so kindly and so generously assisted by outsiders, or a portion of the public which can have no feeling or interest in the matter further than a love for horticulture and a kindly feeling towards those engaged in the pursuit as a means of earning their livelihood. It may possibly be found that, in some form, improvement may be effected in the management of the institution; and if so, all lovers and well-wishers of the same will be exceedingly pleased.

But what is most required, and what would be most appreciated, would be the increased support of those for whose benefit the institution continues to exist. If this continues to be persistently withheld, need we feel greatly surprised if, in time, the most generous and kind friends of the institution become somewhat lukewarm and weary in their efforts of trying to assist those who do not care to try to assist themselves, or, at least, their brethren whose lot in life may prove less fortunate than their own. I am quite well aware that guineas among gardeners are, generally speaking, far from being plentiful, but if an effort is made to subscribe to the institution, it will, in many instances, be found to be successful, and it may be considered as an act very unlikely to be repented. I fail to see any great difficulty or tiresomeness in soliciting votes, as alluded to by your correspondent. If this, or something of the kind, was not done, intending voters might fail to know the most deserving or urgent cases. Your correspondent does not admire the word "charity;" the word may very well be dispensed with as regards this institution, if, indeed, it has ever been used in connection with it. This institution, however, must continue to be a benevolent one, and no one need to feel ashamed to accept assistance from it, it being an institution to whose funds he may have subscribed, and even in cases where the applicant may, from no fault of his own, never have been in a position to subscribe to its funds, and it is to be feared that there are too many instances of this kind; still, it is satisfactory to the successful applicant to this institution to know that he is being assisted by an institution whose funds are being supplied by lovers of horticulture, and by his horticultural brethren, who may, in some respects, have been more fortunate than himself. *P. G.*

— I was much pleased to see Mr. J. H. Goodacre's letter in the *Gardeners' Chronicle* (p. 711), and also the Editor's remarks and advice, and I hope that all horticulturists will give due consideration to this matter, and offer their candid opinion to, and assist the committee by, expressing their views on any alterations that they think would best serve the object for which the institution exists. Those who cannot attend the meeting can still write and give their opinion to the committee. I for one, and many more who I have talked the matter over with, should much like to see abolished the present system of election by votes, or, if not quite done away with, restricted as much as possible, and preference given to old members of the institution. *Wm. Smythe, the Gardens, Basing Park, Alton, December 12.*

— Mr. Goodacre, on p. 711 of the *Gardeners' Chronicle*, draws attention to the circular which has doubtless been received by all gardeners who are members of this institution. I advocate a system of graduated subscriptions to encourage young men to join; also, a new rule, to allow head gardeners to pay their subscription of one guinea by half-yearly or quarterly payments, as it is not every gardener who can afford to pay the guinea all at one time, leave alone subscribe ten guineas to become a life member. With respect to abolishing the present system of soliciting votes, if gardeners could only be persuaded to join in sufficient numbers, the time would come when there would be numbers of men eligible who, having fulfilled all the requirements of the rules, &c., would naturally receive their benefit by right, without election, and so do away with the present system of voting. The present system of voting could not be done away with without the consent of the large number of life donors, &c., who will never require any assistance from the funds. I am not speaking of gardeners who are life donors. Either you must continue the present system with useful amendments, or make the institution a benefit society on the lines of the Manchester Unity, &c. I have no confidence in any Government scheme of insurance. The Manchester Unity and other societies will forestall and provide a far better scheme for insurance of an annuity in old age, and by much easier payments. If only cohesion could be for once effected amongst gardeners, the institution might become popular (but it never will in this or any other cause). A great many who receive the benefit of the funds have never subscribed to it at all, and a great many gardeners at the present day have no faith in it, and will tell you it will never do them any good. Let us put self on one side for the present, and join in providing help to those of our more unfortunate brothers, &c., who have nothing to help themselves with. There is an old problem that charity begins at home. Let every

gardener who has not done so join this institution, and so receive eventually the benefit of their own charity. *John Chinnery.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 13.—On Tuesday last (which was the last occasion on which the committees of the Royal Horticultural Society will meet until the New Year) the show was an unusually fine one. Interesting and bright displays of Orchids were contributed by nurserymen and amateurs, whilst the fine collection of Chrysanthemums, also contributed by both groups of exhibitors, was such as could hardly have been expected at so late a date. A good batch of Cyclamens, a few berried plants, and other seasonable plants very fittingly made the last meeting one of the pleasantest of the year. A large number of Fellows were elected at a meeting at 3 o'clock, but the lecture on "Berry-bearing Plants" had been unavoidably postponed.

Floral Committee.

Present: W. Marshall, Esq., chairman; and Messrs. R. Owen, R. Dean, H. Herbst, F. Bause, H. B. May, G. Nicholson, F. Ross, R. B. Lowe, G. Gordon, W. Furze, W. Bennett-Pöe, E. Mawley, C. J. Salter, T. Baines, H. Turner, H. H. D'Ombraim, J. Fraser, G. Paul, B. Wynne, George Phippen, and W. H. Williams.

Messrs. Paul & Son, Cheshunt, contributed an interesting group of seasonable berried plants in great variety, together with some home-grown plants of *Azalea mollis* in flower, to show the adaptability of these home-grown roots for very early forcing (Silver Flora Medal).

A very fine collection of well-flowered Cyclamens, in the various shades of colour, was contributed by Messrs. H. Cannell & Sons, Swanley, and was awarded a Silver Banksian Medal. Mr. H. B. May, Dyson's Lane Nursery, Upper Edmonton, sent a collection of Crotons in variety, of good colour, and of useful size for table decoration (Silver Flora Medal).

A First-class Certificate was awarded to Messrs. Jas. Veitch & Sons, Chelsea, for *Camellia Sasanqua*, which was shown in single red and double white varieties. This is said to be quite hardy. The same firm also exhibited some plants of *Begonia Winter Gem*, in full bloom. This is a very fine *Begonia* for winter work. Its habit is good, the inflorescence strong, and the flowers well above the dark green foliage. The blossoms are single and of bright crimson colour.

Mr. T. S. Ware, Tottenham, sent some plants of *Narcissus Bulbocodium* var. *monophyllus*, and also a few pots of *Iris Histro* in bloom. This beautiful *Iris* is extremely well adapted for pot-culture, and just at this season its worth as such must be very great. A figure of this plant will be found on p. 729. A *Carnation* (Whipper-in) and flowers described as *Seedling Primula obconica*, but which presented very little difference to the blooms usually produced by that plant, came from Mr. John Roberts, The Gardens, Tan-y-Bwlch, R.S.O., North Wales. Some plants of *Helleborus niger* in full bloom came from Mr. Geo. Wythes, Syon House Gardens.

Chrysanthemums.—Probably such a display of *Chrysanthemums* was never before seen so late in the year as on this occasion. The season favoured late production, but we have now such a number of *Chrysanthemums* that bloom early and late, that, given fair weather, fine blooms, such as those seen on Tuesday, will be had up to Christmas, and even later; and the blooms shown were more than enough to fill one side of the centre table, came from various parts—from Trentham, Staffordshire; from Chilwell, Notts; Swanley, in Kent; Earlswood, in Surrey; and Maidenhead, in Berks.

From Mr. Peter Blair, The Gardens, Trentham, came large stands each of incurved and Japanese, among the former six blooms of Mrs. Robinson King (Award of Merit), which gives a deep golden-yellow form of the Queen type; it originated as a sport from Golden Empress, but when exhibited in the same stand as the latter, it is very important to be sufficiently distinct in colour. Miss M. A. Haggas, John Doughty, Alfred Salter, Empress of India, and Golden Empress, all incurved, were shown in good character for so late a period. Of Japanese, Mr. Blair had G. Maclure, Gaspard Rozain, Mrs. E. W. Clark, fine deep amaranth; and Mons. M. Rivière.

Mr. R. Owen, Castle Hill Nursery, Maidenhead,

had a very interesting collection, because containing a number of highly promising seedlings raised by the exhibitor. Among them was *Anemone*-flowered Japanese Enterprise (Award of Merit), soft pink ray florets, with primrose cushion—very pleasing and distinct. Japanese Countess of Hambleton (Award of Merit), delicate blush-pink, bleaching to white, incurved, with massive broad petals—extra fine; Waban (Award of Merit), a remarkable and distinct American variety, with large broad blush petals, having slight wine-red margins, the petals at first reflexing, and then curling inwards, imparting to the flowers a very distinct and attractive appearance. Robert Owen (Award of Merit), a very fine rich golden Japanese incurved; H. M. Pollet, an incurved Japanese of the build of Madame C. Audiguier, but paler in colour; three blooms of this were shown, but there were no two alike; Lord Brooke, incurved Japanese, deep yellow, with slight margins of red to some of the petals, very promising; Peter Blair, a large reflexed, golden-buff, reflexed Japanese, very promising, that will no doubt be seen in better condition another season. Of the unnamed seedlings shown by Mr. Owen, was O. 170, a very fine broad-petalled, reflexed Japanese of great promise. Mr. Owen also sent the following incurved varieties: Robert Petfield, bright lilac with silvery reverse; Henry Perkins, pale bronzy-cerise and golden reverse, with long pointed florets, large and full; and Lady Dorothy, a sport from Hero of Stoke Newington, pale in colour on this occasion, being of a pale salmon with golden centre.

From Messrs. Pitcher & Manda, American Nursery, Hextable, Swanley, came a large collection, comprising several fine Japanese varieties, not shown in the best condition; such as Mrs. E. D. Adams, white tinted with rose; Mdle. Marie Recoura, large pure white, but scarcely full enough for exhibition purposes; Pearl Beauty, a delicate incurved Japanese; Mr. Libbie Allen, pale yellow incurved; Miss Ada McVicker, a very promising delicate incurved Japanese; Mrs. Lay, pale incurved, with lilac base; Oeta, incurved, bronze and gold, very promising; J. S. Matthews, an incurved pale lilac Japanese, with broad petals; Mr. E. W. Clark, Lord Brooke, Louis Boehmer, and the golden hairy W. A. Manda.

Messrs. Henry Cannell & Sons, nurserymen, Swanley, had Japanese Mdle. Marie Recoura (Award of Merit).

From Messrs. J. R. Pearson & Sons, The Nurseries, Chilwell, came Mrs. C. Libbra, a deep pink and purple sport from Princess Teck; Mrs. R. J. Baylis, like Lord Brooke, with the build of Japonais; Fred Dormer (Award of Merit), a pale yellow reflexed flower, one bloom being in good character, the other two indifferent; C. B. Whitnall, incurved, rich amaranth, with silvery reverse, having the build of Refulgens; H. E. Widner, a bright lemon-yellow Japanese; and Mr. Libbie Allen and Oeta.

Mr. W. Wells, Earlswood, had a collection of cut blooms of various types, among them some new single varieties, but having the defect of two or three circles of ray florets, though very useful for cutting from.

Mr. Geo. Wythes, The Gardens, Syon House, Brentford, sent a number of plants of a capital white-flowering sort named Duchess of Sutherland, very free, and, to all appearance, an excellent variety for late blooming.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and James O'Brien (Sec.), De B. Crawshaw, J. W. Bond, C. J. Lucas, Dr. M. T. Masters, W. H. White, F. Sander, S. Courtland, E. Hill, J. Jaques, A. H. Smea, H. M. Pollett, Jas. Douglas, Baron Schroder, and T. B. Haywood.

At this, the last meeting of the year, there was a fine display of Orchids, the brightest group being that shown by Sir Trevor Lawrence, Bart., Burford, Dorking (grower, Mr. W. H. White), made up principally of the fine Burford-raised Calanthes, of which about forty plants, with flowers ranging from pure white to crimson, were exhibited. Of them C. Veitchii splendens ×, C. bella ×, C. versicolor ×, C. Veitchii lactea ×, and the new C. × Oakwood seedling were remarkably fine. Also in the group were *Masdevallia Hincksiana* ×, *M. gargantua*, a massive and strange species; a pan of the pretty new hybrid *Dendrobium Burfordiense* × (*Linawianum* × *heterocarpum*), and a noble pan of *Sophranitis grandiflora*, with over forty rich scarlet flowers, and which was unanimously awarded a Silver Banksian Medal.

M. Wells, Esq., Broomfield, Sale, near Manchester

(gr., Mr. R. Hinde), exhibited the pure white *Cattleya labiata alba*, which flowered out of Messrs. F. Sander & Co.'s importation of autumn-flowering labiata, and is a great acquisition. The flower was wholly pure white, with the exception of a yellow tinge in the throat (First-class Certificate).

G. D. Owen, Esq., Selwood, Rotherham (gr., Mr. B. Watts), exhibited *Lælia anceps Oweniana*, a large and richly-coloured form, with the additional merit of having the segments conspicuously flaked with white (Award of Merit); *Cattleya amethystoglossa*, Selwood var., with large blush-white flowers, spotted with crimson (Award of Merit); and a dark form of *Odontoglossum maculatum*.

C. W. Lea, Esq., Parkfield, Hallow, Worcester, (gr., Mr. A. G. Catt), sent a spike of the white form of *Vanda teres*, which had been previously certificated to Lord Rothschild.

W. Thompson, Esq., Walton Grange, Stone (gr., Mr. Stevens), exhibited a hybrid *Masdevallia* (*Tovarensis* × *Veitchii*), with white flowers tinged with lilac. It was named M. McVitie × (Award of Merit).

C. W. Fincken, Esq., Hoyland Hall, Barneley (gr., Mr. Milburn), exhibited a supposed natural hybrid *Lælia* (*albida* × *anceps Sanderiana*?), with white sepals and petals, crimson front lobe to the lip, and fine chocolate lines to the side lobes. The growth of the plant favoured the supposition of its origin (Award of Merit).

Messrs. James Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, exhibited another of their fine hybrids out of *Sophranitis grandiflora*, viz., *Sophranitis-Cattleya Calypso* × (*Soph. grandiflora* ♀, Catt. Loddigii ♂), with indescribably beautiful warm rose-pink flowers with orange centre to the lip (First-class Certificate).

Messrs. Veitch also showed the rich dark scarlet *Epiphranthis Veitchii* ×, and five hybrid *Cypripediums*:—C. Arête × (*concolor* ♀ × *Spicerianum* ♂), a pretty thing of the C. *microchilum* × class (Award of Merit); C. Aeson × (*insigne* ♀ × *Druryi* ♂), C. Pheres × (*insigne* ♀ × *hirsutissimum* ♂), C. Cænone × (*Hookera* ♀ × *superbiens* ♂), and the pretty blush-white C. Cleola × (*Schlimii* album ♀ × *reticulatum* ♂).

C. E. Smith, Esq., Silvermere, Cobham (gr., Mr. J. Quarterman), showed a noble example of *Cypripedium insigne*, over 4 feet across, and profusely flowered (Silver Banksian Medal).

His Grace the Duke of Northumberland, Sion House (gr., Mr. G. Wythes), also showed an extensive bank of small plants of C. *insigne*, set up very effectively with *Calanthe Veitchii*.

Two large plants of *Cypripedium insigne*, and two of *Zygopetalum Mackayi*, were staged by G. H. Lutwyche, Esq., Oakfield, Beckenham, and were awarded a Bronze Banksian Medal.

Messrs. F. Sander & Co. had a select group, in which were many hybrid *Cypripediums*. One of the handsomest was C. *Johnsonianum* × (*nitens magnificum* × *Lawrenceanum*), a very fine bold flower (Award of Merit). Other noteworthy ones were C. *Alcides superbum* (*insigne* var. × *hirsutissimum*), similar to C. *Pheres* of Messrs. Veitch; C. *multicolor* × (*superbiens* × *Spicerianum*), C. *maculatum* × (*tonsum* × *Leeanum*), C. *Salierii superbum* ×, C. *Calypso* × *Oakwood* var., C. *Lathamianum* × *Clark's* var., C. *Lynchianum* × (*Spicerianum* × *selligerum majus*), and three very fine forms of C. *Leeanum* ×, that named Audenshaw var. being very fine. Messrs. Sander also showed *Cattleya O'Brieniana*, a distinct species, with pale pink flowers; *Lælia autumnalis*, white var., *Dendrobium Cassiope* ×, several *Oncidium Phalaenopsis*, the beautiful *Cypripedium Chamberlainianum*, *Masdevallia Courtlandiana* ×, and *Cypripedium insigne* Upper Burma var.

W. E. Brymer, Esq., Ilington House, Dorchester (gr., Mr. John Powell), sent a fine spike of the beautiful crimson *Dendrobium Treacherianum* (Botanical Certificate), a spray of *Oncidium insculptum*, *Lælia anceps* var., &c.

Alex. Fraser, Esq., Westerfield House, Ipswich (gr., Mr. Geo. James), sent a neat form of *Cattleya Leopoldii*, Pernambuco var.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr., Mr. Simpkins), exhibited the distinct *Pleurothallis punctulata*, with glaucous leaves, and flowers somewhat resembling those of *Restrepia guttata* (Botanical Certificate); also a small group of fine cut *Cypripediums*.

Messrs. Pitcher & Manda, The United States Nurseries, Hextable, Swanley, showed a dozen distinct forms of *Cypripedium insigne*, C. *Niobe* ×, and C. *N. Shortfills* var.

Philip Crowley, Esq., Waddon House, Croydon (gr., Mr. King), showed *Angræcum pellucidum*.

Messrs. Linden, L'Horticulture Internationale, Parc Leopold, Brussels, and B. D. Knox, Esq., Ardmillan, Caversham, exhibited *Cattleya Alexandræ*, which the committee desired to see again in the hope that better forms may be forthcoming.

Chas. Ingram, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), sent *Cypripedium marmorophyllum superbum* × (*marmorophyllum* × *Spicerianum*), C. Chas. Reiffold × (*Ceanothus superbum* × *Spicerianum*), and C. Lathamianum inversum ×.

Mr. Wm. Bolton, Wilderspool, Warrington, sent flowers of two forms of *Cypripedium insigne*, C. Chamberlainianum, and a well-coloured *Cattleya labiata*; flowers of a distinct form of the *Chantini* section of *Cypripedium insigne*, came from Thos. Statter, Esq., Stand Hall, near Manchester (gr., Mr. R. Johnson), and a bloom of the matchless clear yellow and white C. insigne *Sanderæ*, was sent by Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr., Mr. Murray).

Other good exhibits were a nice group of showy Orchids, including *Odontoglossum Rossii* albens, *Cypripedium Pitcherianum* × var. C. Hookeræ-*Veitchii* ×, *Lælia autumnalis alba*, *Cypripedium Adonis* ×, a new *Spicerianum* cross, and other good things from Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N.; and a nice group from Messrs. Hugh Low & Co., Clapton, E., among which were several *Angræcum sesquipedale*, *Cypripedium bellatulum*, a noble C. *Leeanum* with twenty flowers; a fine *Saccolabium giganteum*, *Vanda Amesiana*, &c.

Fruit Committee.

Present: P. Crowley, Esq., in the chair; and Messrs. John Lee, A. Sutton, W. Wilks, G. W. Cummings, G. Taber, T. J. Saltmarsh, G. Bunyard, W. Warren, A. H. Pearson, J. Wright, A. Dean, J. Willard, W. Bates, J. Smith, G. Wythes, J. Hudson, G. H. Sage, F. Q. Lane, H. Balderson, G. Norman, and Robt. Hogg.

Many seedling Apples were presented for Certificates, but none were fortunate enough to find favour with the committee.

Mr. G. W. Cummings, gr. to A. H. Smee, Esq., The Grange, Wallington, had Apple Rembrorough, which appeared to resemble Blenheim Orange to some degree, and a variety called Smee's Seedling.

Mr. Toogood, Alvalton Hall, Peterborough, recommended Toogood's Seedling as a very fine Apple for market, and as a very free bearer. Mr. H. C. Princep, Buxted Park, Uckfield, showed a large yellow seedling Apple, called The Spires. Seedling fruits also were exhibited by Mr. Ed. Corkey, Frome, Somerset; Mr. W. H. Barmister, gr. to H. St. Vincent Ames, Esq., Cote House, Westbury-on-Trym; and Mr. D. Keen. Two very fine dishes of Apples, one of Golden Noble, the other of Waltham Abbey Seedling, came from Mr. J. Hudson, gr. to Messrs. Rothschild, Gunnersbury House, Acton.

Mr. C. Turner, Slough, sent some fine samples of Knight's Monarch Pear, from pyramids (Vote of Thanks). Messrs. R. H. Vertegans & Co., Chad Valley, Birmingham, sent some fruits of *Diospyros kaki*, and the variety *Huyakune* (Vote of Thanks).

Mr. Jno. Brooke, Forde Abbey, Chard, showed Tomato *Fordiana* for Certificate, but was unsuccessful.

Potato Fidler's Colossal, which was presented at the last meeting, and was sent to Chiswick to be cooked, was again before the committee to-day, and received a First-class Certificate.

Messrs. Cooper, Taber & Co., Limited, Witham, Essex, showed a new Potato called Duke of York, which appeared to be a good solid variety, with small eyes, skin a little rough, and tubers of a fair even size.

From the gardens of the Royal Horticultural Society, at Chiswick, came dishes of the following Apples:—American Mother, Dutch Mignonne, Cogswell, Cox's Orange Pippin, Rosemary Russet, King of the Pippins, Beauty of Hants, and Baumann's Red Winter Reinette; also a very large fine collection of well-grown Beet, in upwards of sixty varieties.

EDINBURGH BOTANICAL.

NOVEMBER 10.—Dr. Christison, President in the chair, read an opening address on the size and rate of growth of some British trees.

Size of British Trees.—In describing the Oaks of Britain he mentioned that the largest was the Cowthorpe Oak in the forest of Dean. The height of

this tree was 85 feet, and it nowhere girthed less than 40 feet. Next to it in size came the Rosamund Oak, near Harrowfield, and then the Seldon Oak.

The Oak did not reach so large a size in Scotland as in England, and the largest Scottish Oak was at Lea, in Lanarkshire; this tree being 23 feet in girth at the narrowest part. The second largest Oak in Scotland was in the Cadyow Forest.

As regards Beeches, the largest in Britain was at Eccles, where a girth of 20 feet was reached at a height of 5½ feet above the ground. The largest tree of this kind in Scotland was the Newbattle Beech, which had a girth of 43 feet at the ground; and at 8½ feet up, where it was narrowest, it girthed 18 feet 2 inches. The circumference of its foliage was 400 feet. The second largest Beech in Scotland, with a height of 122 feet and a girth at its narrowest part of 13 feet 7 inches, was at Milngraden.

None of the Scottish Ashes reached a greater girth than 20 feet at a height of 5 feet above the ground. The largest tree of this kind is at Yair, and had a girth of 19 feet 9 inches at the narrowest part; while at Carnock there was an Ash which at a height of 5 feet girthed 19 feet 3 inches.

No Scottish Fir at present living reached a girth of more than 14 feet, though there were indications of trees which must have girthed at least 20 feet. The largest Yew in Scotland was that at Fortingal; the trunk of this tree was utterly shattered, but it had a circumference of 54 feet at the ground. The largest Yew at present in a thriving condition was to be found at Ormiston, where there was a tree which girthed 13 feet 10 inches at 1 foot above the ground. Of English Yews, the largest was at Darley Dale, where a girth of 32 feet at the ground was reached. The Fountains Abbey Yew had a girth of 22 feet, but the stem was hollow.

Dr. Christison then referred to the age of trees, and pointed out how inaccurate historical evidence is apt to be, on account of the general absence of any accurate determination of the height at which the measurements were made. The method of obtaining the age by counting the annual rings was shown to be inaccurate, though the information afforded by this means was sufficient for a rough estimate up to a very advanced age. Another mode of determining the age of a tree was by repeated measurements of the girth of the stem at the same height. On the motion of Professor Bayley Balfour, a vote of thanks was accorded to Dr. Christison for his paper.

Mr. Lindsay, Curator of the Royal Botanic Garden, read a report on the temperature and vegetation at the garden during September and October. Mr. Lindsay exhibited some capsules of the Opium Poppy which had been pierced by a titmouse in search of the seeds. Plants of *Pernetia carnea* and *bracteata* in fine fruit, were also shown to the society by Mr. Lindsay.

Professor Bayley Balfour exhibited a large pitcher of *Nepenthes bicalcarata* preserved in spirit.

Report of Temperature and Vegetation in the Garden for July, 1892.—The weather of July was for the most part cool and unsettled, with heavy falls of rain, and with one or two gales of much severity for the time of the year. The lowest night temperature was 40°, which occurred on the 10th of the month, and the highest 54°, on the 31st. The lowest day temperature was 55°, on the 12th; and the highest 79°, on the 31st. The growth of trees and shrubs during the month was fairly good; most herbaceous plants flowered very well, and Roses were very fine towards the end of the month. On the rock garden, 237 species and well-marked varieties came into flower, as against 252 for the corresponding month last year. A few of the more interesting were:—*Convolvulus lineatus*, *Cyananthus lobatus*, *Dianthus cinnabarinus*, *Epilobium Flietherii*, *E. obcordatum*, *Erythraea diffusa*, *Eriogonum aureum*, *Gentiana septemfida*, *cordifolia*, *Gillenia trifoliata*, *Kniphofia caulescens*, *Linaria organifolia*, *Mecopropis Wallichii*, *Primula Poissonii*, *Saxifraga diversifolia*, *S. fimbriata*, and *Silene Elizabethæ*.

August, 1892.—August was a most inclement month; no really warm days occurred, and altogether the month was a most unfavourable one. The lowest night temperature was 35°, which occurred on the 10th of the month; and the highest 58°, on the 14th. The lowest day temperature was 51°, on the 8th; and the highest 74°, on the 13th. On the rock garden 103 species and varieties came into flower, as against 84 during last August. Amongst the most conspicuous or interesting were:—*Campanula isophylla alba*, C. *Waldsteiniana*, *Castanea*

chrysophylla, *Coreopsis grandiflora*, *Chelone barbata*, *Dianthus Atkinsonii*, D. *glauca*, *Gentiana asclepiadea*, G. a. *alba*, G. *ornata*, G. *tibetica*, G. *arvensis*, *Lobelia cardinalis*, *Monarda Kalmiana*, *Olearia Haastii*, *Papaver pyrenaicum*, *Scabiosa fumariifolia*, *Senecio speciosus*, *Spiraea bumalda*, *Symphylandra Hoffmanni*, *Veronica longifolia subsessilis*, V. *lycopodioides*, and *Viola cornuta* × *tricolor*.

September, 1892.—The month of September was cool and unsettled throughout. No frost occurred, but the average temperature was very low. The greatest deficiency of heat occurred during the day; there was an entire absence of anything in the shape of warm weather. The lowest night temperature was 35°, which occurred on the 30th of the month; and the highest, 55°, on the 13th. The lowest day temperature was 52°, on the 28th; and the highest 69°, on the 6th. Most herbaceous plants flowered very well this month, particularly species of *Aster*, *Rudbeckia*, *Pyrethrum*, and other *Compositæ*; *Colchicum*, *Kniphofia* and *Crocus* were also fine. Roses flowered fairly well in September. Autumn tints were beginning to show on *Pavia flava* about the middle of the month; and towards the close, the golden-yellow leaves were most beautiful and effective. On the rock garden forty-five plants came into flower, as against forty-one for the corresponding month last year, amongst which were the following:—*Colchicum speciosum maximum*, C. *striatum*, *Carlina subcaulescens*, *Centaurea alpina*, *Coreopsis verticillata*, *Crocus annulatus*, C. *medius*, C. *nudiflorus*, *Delphinium nudicaule aurantiacum*, *Gentiana alba*, *Gladiolus Saundersii*, *Hypericum patulum*, *Kniphofia nobilis*, *Liatris elegans*, *Lilium auratum macranthum*, *Montbretia Star of Fire*, *Potentilla formosa*, *Senecio pulcher*, and *Teucrium flavum*.

October, 1892.—The month of October was very cold, with much frost and rain. The first frost this season took place on the 2nd of the month, when the glass registered 32°. The thermometer was at or below the freezing point on nine occasions, indicating collectively 44° of frost for the month. The lowest readings were on the 11th, 26°; 19th, 28°; 24th, 23°; 25th, 19°; 26th, 20°. The lowest day reading was 44° on the 25th, and the highest 62° on the 2nd. Leaves of deciduous trees and shrubs began to fall early in the month. Autumn tints were most conspicuous on species of Oak, Maple, Cornus, Azalea, Pyrus, and Berberis. The brown tint on varieties of *Biota* and other Conifers is also very distinct and interesting. Fruit is most abundant on trees of *Pyrus latifolia* and *Holly*; *Cotoneaster* and *Pernettya* are fairly well set with berries. Flowering herbaceous plants continued to blossom till the 25th of the month, when the severe frost, which then took place cut off the greater part of them. Large masses of *Polygonum vacciniifolium*, which was most attractive on the rock garden during the early part of the month, was completely destroyed at the same date. On the rock garden fifteen species came into flower during October, as against thirteen for October, 1891. Amongst those which flowered were *Aster longifolius*, *Crocus Asturicus*, *Crocus Salzmanni*, *Helleborus albanicus*, *Hypericum Nepalesense*, *Parochætus communis*, *Rudbeckia Newmanni*, *Scdum spectabile*, *Statice minuta*. The total number which have flowered since January 1 is 1208; during the same period last year 1210 had flowered.

Obituary.

WILLIAM PRATT.—A large number of our readers will regret to hear that William Pratt (until lately head gardener to the Marquis of Bath, Longleat, Warminster), died on Monday night last at the Southgate Hotel, Southgate Street, Bath, where he had been carrying on the business of a wine and spirit merchant during the past three or four months. During the nine or ten years that the deceased was at Longleat he acquired a name for himself in Grape-growing, especially in the cultivation of Muscat of Alexandria, the crops of which were the admiration of all who saw them. The deceased, who was forty-two years of age, was a first-rate Grape-grower, and a good all-round gardener, as the condition of Longleat gardens during the time that he had charge of them fully testified. He was genial and courteous, and very popular with all with whom he came in contact. Previous to taking charge of the gardens at Longleat, the deceased was for several years head gardener to Lord Hill, Hawkestone,

Shrewsbury, where he distinguished himself in the culture of plants, &c. Mr. Pratt has left a wife and young family.

F. BEDFORD.—Died on Saturday, December 10, at Straffan, co. Kildare, of consumption, WILLIE, eldest son of Mr. F. Bedford, age 20. He was a young gardener of great promise, and is deeply regretted by all who knew him.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					Inch.	Ins.	No. of Rainy Days since Jan. 3, 1892.	Percentage of possible Duration for the Week.
	Above (+) or below (—) the Mean for the week ending December 10.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.				
0	7	—	0	73	— 147 + 289	0	aver 242	48.1	5
1	7	—	0	81	— 366 + 359	1	— 193	27.6	28
2	6	—	0	62	— 237 + 253	0	aver 191	25.2	37
3	6	—	0	62	— 212 + 223	0	aver 176	26.9	40
4	6	—	0	63	— 190 + 307	0	aver 171	23.4	35
5	5	—	0	42	— 163 + 133	1	— 156	24.3	45
6	6	—	0	56	— 261 + 276	0	aver 196	45.4	27
7	5	—	0	19	— 191 + 200	3	— 197	35.1	27
8	5	—	4	38	— 157 + 132	2	— 185	30.3	43
9	4	—	0	40	— 205 + 150	3	— 220	37.3	21
10	5	—	2	39	— 138 + 162	3	— 191	38.5	28
*	3	—	20	9	— 18 + 41	2	— 187	28.9	40

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S.

Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending December 10, is furnished from the Meteorological Office:—

"The weather during this period was decidedly cold and changeable, with frequent falls of cold rain or snow, alternating with fine, bright intervals.

"The temperature was below the mean in all districts, the deficit ranging from 3° in the 'Channel Islands,' and 4° in 'Ireland, N.,' to as much as 6° or 7° over the northern and north-eastern parts of the kingdom. The highest of the maxima were recorded, as a rule, on the 10th, when they varied from 42° in 'England, N.E.' to 50° or 51° in the south-west and west. The lowest of the minima were registered on somewhat variable dates; they were as low as 8° in 'Scotland, E.' (at Braemar), 12° in 'Scotland, N.' (at Lairg), between 19° and 24° in most other districts, and 36° in the 'Channel Islands.'

"The rainfall exceeded the mean in England, N.W. and 'Ireland, N.,' but in the other districts it either just equalled or was a little below the normal.

"The bright sunshine was more prevalent (except in 'Scotland, N.,' than for many weeks past. The percentage of the possible duration ranged from 43 in 'England, S.W.,' 41 in 'England, S.,' and 40 in 'England, E.' and the 'Channel Islands,' to 21 in 'Ireland, N.' and to only 5 in 'Scotland, N.'

ROYAL BOTANIC SOCIETY.—A meeting of Fellows of this Society was held on Saturday, December 10, Major J. W. M. COTTON in the chair. Amongst the objects of interest exhibited at the meeting was a preparation of the Kola-nut. Plants of the tree producing the nuts were on the table from the Society's conservatory.

MARKETS.

COVENT GARDEN, December 15.

MARKET still very quiet, with heavy supplies. No alteration in prices. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, p. half-sieve	0-36	Melons, each	0-6-13
— Nova Scotia,		Pine-apples, St. Michael	4-0-60
per barrel	10-17 6	Oranges, Florida, per case	14-0-18 0
Cobs, per 100 lb.	120 0 125 0		
Grapes, per lb.	0-6-20		
Lemons, per case	15-0-35 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6-0-12 0	Ferns, various, doz.	4-0-9 0
Aspidistra, per doz.	15-0-30 0	— per 100	5-0-8 0
— specimen, each	7-6-21 0	Ficus elastica, each	1-6-7 6
Chrysanthemums, p.		Marguerite, per doz.	6-0-12 0
doz.	4-0-12 0	Mignonette, doz. pots	6-0-12 0
— large plants, ea.	1-6-2 6	Palms, various, each	2-0-10 0
Cyclamen, doz.	9-0-18 0	— specimens, each	10-6-84 0
Cyperus, per dozen	4-0-10 0	Pelargoniums, scar-	
Dracena, each	1-0-5 0	let, p. doz.	4-0-6 0
Erica, various, doz.	9-0-18 0	Solanums, per doz.	9-0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	4-0-8 0	Mignonette, 12 bun.	3-0-6 0
Bouvardia, per bun.	0-9 1 0	Narciss (Paper-white)	
Carnations, 12 blms.	1-0-3 0	French, doz. bun.	1-6-3 0
Chrysanthemums, p.		Pelargonium, scar-	
doz. blooms	1-6-6 0	let, per 12	
— p. doz. bunches	4-0-10 0	bunches	5-0-8 0
Cyclamen, doz. blms.	0-3-0 6	12 sprays	0-9-1 0
Eucharis, per dozen	4-0-7 0	Poinsettias, per doz.	
Gardenia, per dozen	4-0-6 0	blooms	4-0-9 0
Heliotrope, per doz.		Primula, double	0-8-0 9
sprays	0-6 0 9	Pyrethrum	2-0-4 0
Hyacinth, Roman,		Roses, Tea, per dozen	1-0-2 0
doz. sprays	0-6-1 0	— coloured, dozen	2-0-4 0
Lilac, white French,		— yellow (Mare-	
per bunch	5-0-6 0	chals), per doz.	3-0-6 0
Lilium Harrisoni, doz.	8-0-10 0	— red, per dozen	1-0-2 0
— various, doz.	2-0-4 0	— (French) p. doz.	1-6-4 0
Lily of the Valley,		Stephanotis, per 12	
doz. sprays	3-0-6 0	sprays	3-0-12 0
Maiden Hair Fern,		Tuberose, 12 blms.	0-3-0 9
12 bunches	4-0-6 0	Violets, Parme French	
Marguerite, per doz.		per bunch	4-0-5 0
bunches	4-0-8 0	— Czar, per bunch	2-0-3 0
Mimosa, French, bun.	1-0-2 0	— small French,	
Orchids:—		p. doz. bunches	1-6-2 0
Cattleya, 12 blms.	6-0-12 0	— small English,	
Odontoglossum		p. doz. bunches	1-6-2 0
crispum, 12 blms.	2-0-6 0		

ORCHID-BLOOM in variety.

HOLLY and MISTLETO very good in quality.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beans, French, lb.	1-0-1 6	Mustard and Cress,	
Beet, red, per dozen	2-0-3 0	punnet	0-4-...
Carrots, per bunch	0-4-0 6	Parsley per bunch	0-3-0 6
Cauliflowers, each	0-3-0 6	Seakale, per basket	2-6-...
Cucumbers, each	0-6-1 0	Shallots, per lb.	0-6-...
Endive, per dozen	2-0-3 0	Spinach, per bushel	3-6-...
Herbs, per bunch	0-9-1 0	Tomatoes, per lb.	0-6-1 0
Lettuces, per doz.	1-6-2 0	Turnips, per bunch	0-4-0 6
Mushrooms, punnet	2-0-...		

POTATOS.

The market for English Potatoes is almost at a standstill, owing to the large arrivals of foreign, which are very fine in quality, and in splendid condition, and selling at from 50s. to 60s. per ton. Best English selling at from 7s. to 90s. J. B. Thomas.

SEEDS.

LONDON: Dec. 14.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that, as is customary at this time of the year, the seed market to day was thinly attended, with but little business doing. Meantime, as regards red Clover seeds, the position appears extraordinarily strong. Two most unusual and significant features of the situation are the complete absence of offerings from France, and the substantial shipments which have been taking place of German seed to New York. To-day's American cable quotations come very firm. Canary seed hardens in value. There is no change in Hempseed. Peas and Haricots are just now in slow request. Rapeseed is dearer; Mustard keeps scarce; Linseed is steadier; Scarlet Runner and Canadian Wonder Beans offer on exceedingly low terms.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending December 10, and for the corresponding period last year:—1892: Wheat, 26s. 10d.; Barley, 25s. 1d.; Oats, 17s. 4d. 1891: Wheat, 37s. 10d.; Barley, 39s. 1d.; Oats, 21s. 7d.

NOTICES TO CORRESPONDENTS.

*** PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of readers.

BOOKS: Hamish, Shaw's Kitchen and Market Garden is published by Macmillan & Co., Bedford Street, London, W.C. Price about 2s. 6d.—A Subscriber, *Orchid Album*, published by Messrs. B. S. Williams & Son, Paradise Nursery, Holloway, N.; *Reichenbachia*, published by Messrs. F. Sander & Co., St. Albans; *Lindenia* (English edition), published by the Cie. Internationale Horticole, Brussels; *Select Ferns and Lycopods*, published by B. S. W. & Son as above.

CARNATION DISEASE: *Dianthus*. The well-known fungus—*Helminthosporium dianthi*—so often figured and described in our columns.

CINERARIAS: C. K. The plants seemed to have had a check through cold air from outside being admitted to them after being kept rather close for a time. You can do nothing now beyond being more careful in ventilating the house or pit. There was just the suspicion of mildew, but there was not enough to account for the curling of the edges of the leaves. See that the plants do not lack water at the roots, often the forerunner of mildew.

CHICAGO EXHIBITION: Hamish. The population of the U.S.A., including as it does a large number of Germans, and French being the mother tongue of many Canadians, the linguistic accomplishments which you possess will not avail you much. Try. Write to the horticultural superintendent, Mr. Thorpe, Chicago.

GERMAN AND FRENCH GARDENERS' CLUBS IN LONDON: Hamish. Mr. Krümbeugel, in the Royal Gardens, Kew, is the secretary of the former; and a letter addressed to the secretary of the French Horticultural Society, 27, Gerrard Street, London, W., would reach the latter.

GRAFTING MUSCAT VINES ON BLACK HAMBURGS: *Grafting Vines*. The proper time for doing this is the month of April. The scions, which should have a heel of two-year-old wood, should be about equal in size to the stock. And the method of grafting employed should be the side or slip graft, with or without tonguing. After securing the graft with bast or worsted, the slightly projecting base and the graft and stock about the parts united, should be clayed over in the usual way, and the lower end kept moist, which may easily be done by fastening some moss over it, and watering this every second or third day. Only a single bud need be left exposed at the top of the scion, which if the latter be cut 5 or 6 inches long, will leave a good long heel-piece below. If clay be



FIG. 115.—VINE GRAFTING.

not employed to cover the entire scion, the lower end may be stuck into a pot of mould, and kept moist or inserted in a bottle of water (fig. 115). This is a successful method of grafting the Vine. Cleft grafting is sometimes employed, choosing a time for the operation when the sap in the stock begins in spring to flow freely—the scions should have been cut off and laid in moist soil two or three weeks previously. The surest method of attaching a new variety to old canes is by inarching the growing green shoots of each. The union in this event is soon completed; but this method is not applicable generally, without possessing growing plants in pots. We may here appro-

privately say that out-of-doors Vines may be inarched—green shoots on green shoots—not later than just when the bunches of Grapes become visible, or the scion will not ripen its wood. Also grafts of last year's wood, with a heel of old wood, may be employed. These should be taken off in the late autumn, and the lower ends laid in soil in a cool damp cellar where there is no fluctuation of temperature. Before grafting them on the Vines in the spring, the butt-ends that have lain in the soil should be laid in water for twenty-four hours.

INSECTS: *J. K. H.* The soil contained the grubs of a species of weevil. Try what watering with lime-water will do for the soil. Before making use of the soil, hunt it over for the grubs. The perfect insects are very destructive to vegetation.

METEOROLOGICAL STATISTICS: *Hamish.* Enquire at the Meteorological Office, Victoria Street, Westminster.

NAMES OF FRUITS: *G. Southcott.* Your specimens are quite beyond recognition. All fruits sent for identification should be sound, and of fair sample. —*W. W. J. & Son.* Your Apple is probably Brabant Bellefleur.

NAMES OF PLANTS: *E. D. L.* 1, *Peristrophe speciosa* (Justicia); 2, *Cypripedium venustum*.—*E. C. L.* *Thuya dolabrata*.—*A. B.* *Ilex latifolia*.—*W. E. B.* *Anthericum lineare variegatum*.—*L. C.* *Rodriguezia* (Gomezia) planifolia.—*J. M.* 1, *Selaginella Willdenovii*; 2, *Selaginella Mertensii*; 3, *Polypodium aureum*; 4, *Cattleya Loddigesii*.

PARADISE STOCK FOR APPLES: *E. L. E. K.* This species of Crab or Apple is mentioned by Gerard about the middle of the sixteenth century; and according to a statement made by Pliny, it is supposed that it was introduced to Roman gardens in his time, but the place whence it came is not known.

PACKAGE.—A label has reached us from Rugby, with three halfpenny stamps upon same. The contents were lost during transit. Perhaps sender will see this, and kindly write us.

PEAR SHOOTS AND INSECTS: *C. Irvine.* The shoots are covered with the scale cases of the Mussel-scale (see fig. 116). Washing with one wine-glass of petroleum to 1 gal. of soft warm water, and to which $\frac{1}{2}$ lb. of soft-soap is added, is to be

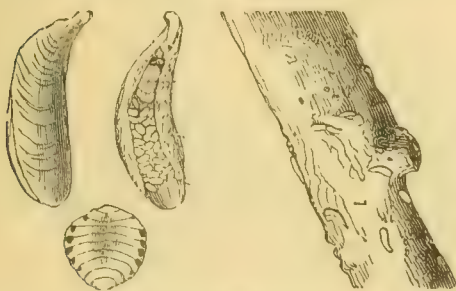


FIG. 116.—MUSSSEL SCALE.

recommended. See our leader on the subject of insecticides. The branches must be scrubbed. A smothering coat of clay, lime, cow-dung, and soot put on the tree at this time of year is also effectual. It may be followed with a second and a third to make sure.

ROMAN HYACINTHS: *J. R.* We must decline to publish anything from unknown correspondents who furnish us only with initials.

SPECIAL HORTICULTURAL PUBLISHERS: *Hamish.* There are none in London; Murray, Macmillan, Reye, Upcott Gill, and Cassell publish a good many works.

COMMUNICATIONS RECEIVED.—*C. J. S.*—*A. P.*—*I. R.*—*T. C.*—*C. P. W.*—*W. Ravenhill.*—*J. B.*, next week if possible.—*Prof. B.* four.—*F. Mawson.*—*F. O.*—*M. D.*—*Dulan & Co.*—*W. B. G.*—*T. C.*—*J. E. H.*—*W. C.*—*H. C. W.*, Singapore.—*C. T. D.*—*J. H. B.*—*A. T.*, Palermo.—*L. R.*—*Sir G. B.*—*R. J. G.*—*P.*—*H. H.*—*J. B.*—*M. F.*—*F. H.*—*J. P.*—*A* Constant Reader.—*W. E.*—*C. A. M. C.*—*A. Harding.*—*J. B.*—*J. T. N.*—*A. P.*—*Kingston Hill.*—*H. W. W.*—*W. Crump.*—*H. H. D.*—*W. D.*—*J. R.*—*B. W.*—*H. & W.*—*W. A.*—*D. Kemp.*—*W. A. W.*—*E. J. L.*—*J. G. B.*—*J. J. W.*—*C. A. M. C.*—*A. D.*

PHOTOGRAPHS, DRAWINGS, &c., RECEIVED WITH THANKS.—*M. T.*—*W. L.*—*R. P.*—*A. G.*—*M. S.*—*W. R.*

SPECIMENS RECEIVED.—*T. Christy & Co.*, next week.—*E. J. L.*, next week.

FRUITS RECEIVED.—*E. Pratten.*—*Wm. Fry.*—*J. G.*

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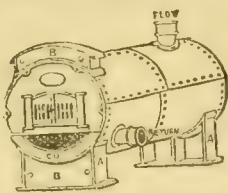
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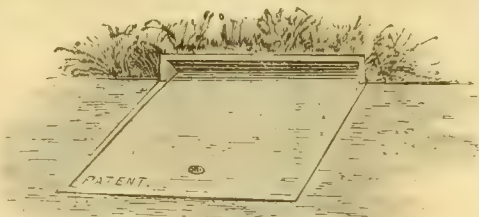
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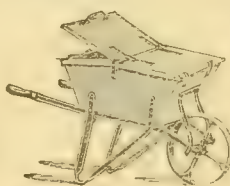
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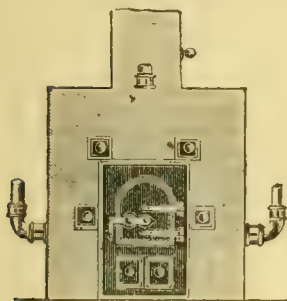
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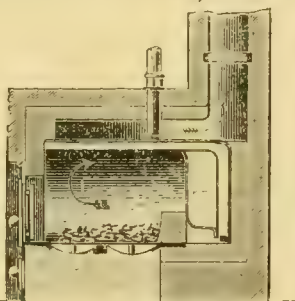
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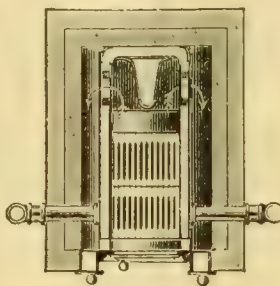
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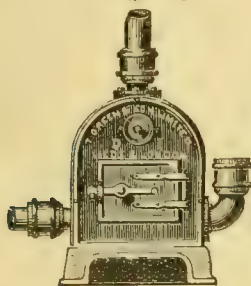


—SECTIONAL PLAN—

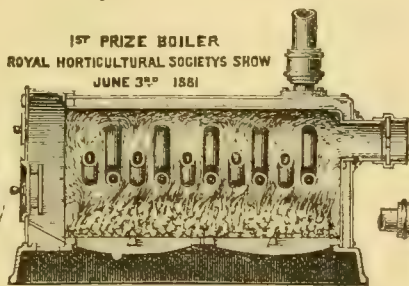
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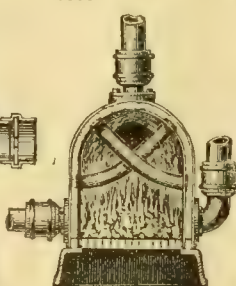
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M B 3	6 6	by 3 0	by 3 0	as follows:—	4000	" 32 0 0
M B 4	8 6	by 4 0	by 3 9		7000	" 60 0 0
M B 5						85 0 0



FRONT ELEVATION



LONGITUDINAL SECTION



CROSS SECTION

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C	1 9	by 3 6	by 2 0	800	22 0 0
D	1 9	by 4 0	by 2 2	1100	29 0 0
E	2 0	by 4 6	by 2 4	1400	36 0 0
F	2 3	by 5 0	by 2 6	1750	43 0 0
G	2 6	by 5 6	by 2 6	2000	50 0 0
H	2 9	by 6 0	by 2 6	2500	60 0 0
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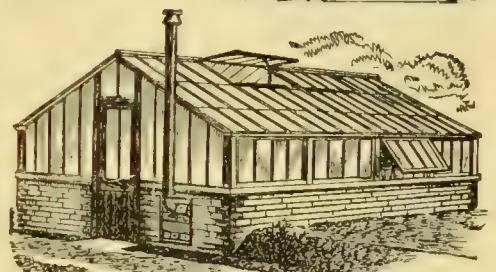
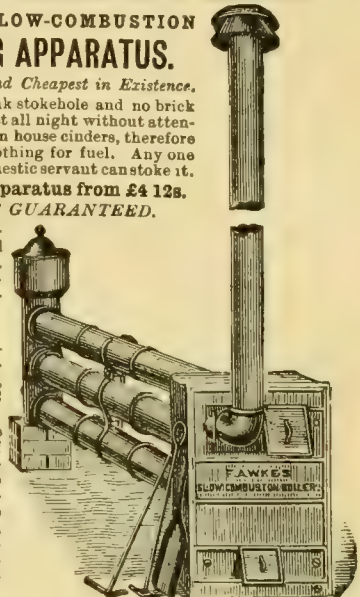
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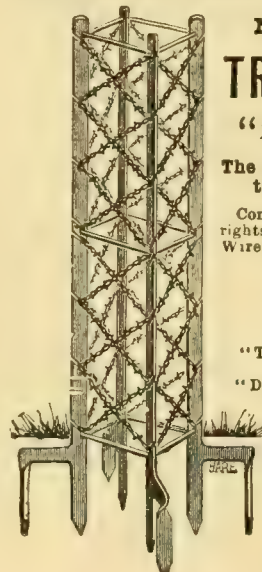
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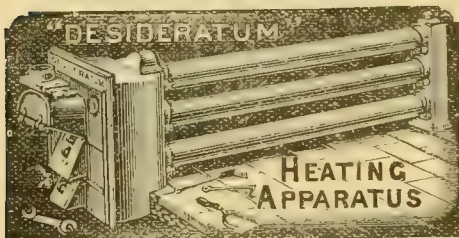
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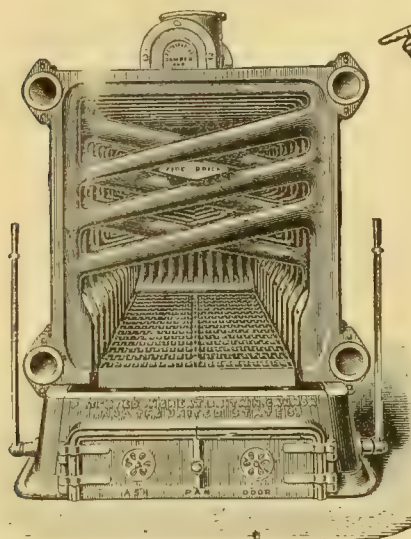
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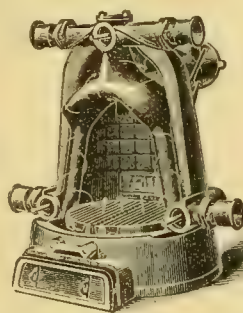
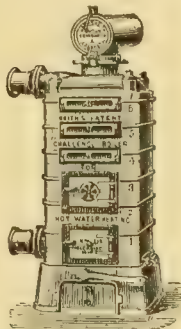
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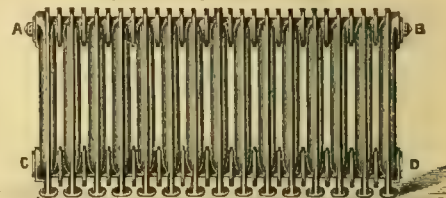
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The GARDENERS' CHRONICLE

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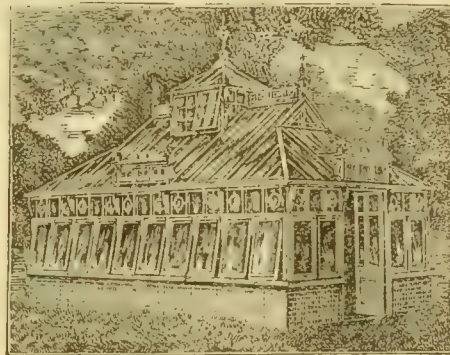
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FOR

SATURDAY, JAN. 7, 1893,


WILL CONTAIN AS A

SUPPLEMENT

A

Sheet Almanac.

As a large EXTRA circulation of this Number is guaranteed, it will be a very valuable medium for Advertisements.

 Advertisers desirous of securing Space in this Number are requested to communicate with the Publisher, not later than Wednesday, January 4, 1893.

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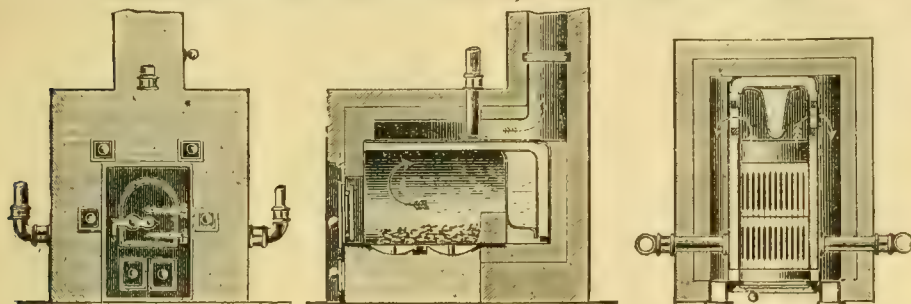
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— LONGITUDINAL SECTION —

— SECTIONAL PLAN —

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	3 ft. 2 in. long	by 2 ft. 0 in. wide	by 2 ft. 0 in. deep		1000 ft.	Price
M B 1	3 ft. 2 in.	by 2 ft. 0 in.	by 2 ft. 0 in.	Calculated to	1000 ft.	£15 0 0
M B 2	4 0	by 2 0	by 2 0	heat 4-in. piping	1280	" 21 0 0
M B 3	5 0	by 2 3	by 2 6	as follows:—	2200	" 32 0 0
M B 4	6 6	by 3 0	by 3 0		4000	" 60 0 0
M B 5	8 6	by 4 0	by 3 9		7000	" 85 0 0



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LONGITUDINAL SECTION

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Sizes & Prices, including Sole-Plate, Grate-Bars, Fire Door, Dampers, & one Flow and one Return, complete.

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B	1 6	by 3 0	by 2 0	600	16 0 0
C	1 9	by 3 6	by 2 0	800	22 0 0
D	1 9	by 4 0	by 2 2	1100	29 0 0
E	2 0	by 4 6	by 2 4	1400	36 0 0
F	2 3	by 5 0	by 2 6	1750	43 0 0
G	2 6	by 5 6	by 2 6	2000	50 0 0
H	2 9	by 6 0	by 2 6	2500	60 0 0
I	3 0	by 6 6	by 2 6	3000	70 0 0

TESTIMONIALS.

Re HEATING APPARATUS.

Borough Engineer's Office, Municipal Buildings, Leeds, January 9, 1886.

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Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

Morley House, Bagot, St. Saviour's, Jersey, November 10th, 1886.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5000 feet of 4-inch pipe in one of my nurseries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

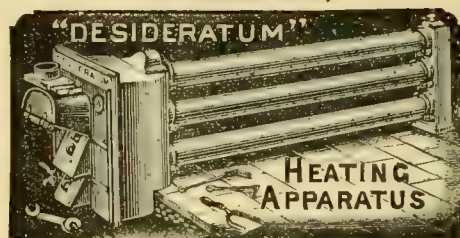
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Yours faithfully, (Signed) G. W. BASHFORD.

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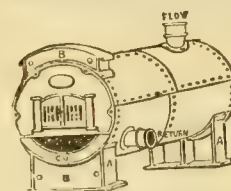
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With Special Provision for
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These Boilers, after long ex-
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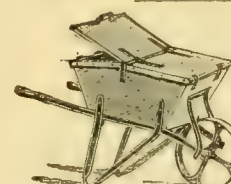
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The maximum of utility and
the minimum of cost.

Constructed of Strong Iron Up-
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Wire.

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TESTIMONIAL.

"The Whittern, Herefordshire,
" Dec. 28, 1887.

"DEAR SIR,—I have now had
an opportunity of trying
your PORCUPINE TREE
GUARDS, and they seem
quite to answer my pur-
pose, so you may send me
50 more as before. I en-
close cheque for your
account.

Yours truly,

RICHD. GREEN,
Messrs. Hill & Smith.

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NORMAN DAVIS

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WILLIAM SEWARD & J. SHRIMPTON,

the finest introductions of recent years, and which will be distributed by him during the coming spring. CATALOGUE ON APPLICATION.

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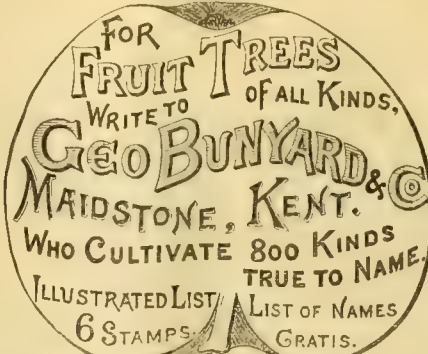
ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
" " WIERI LACINIATUM, 10 to 14 feet, girth 3 to 5 inches.
" " NEGIUNDO VARIEGATUM, Standards, 8 to 10 feet.
" " REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.
" " SCHWEDLERI, 12 to 18 feet, girth 4 to 8 inches.
" " WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.
CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
" " Double White, 14 to 16 feet, girth 6 to 8 inches.
" " Scarlet, 12 to 18 feet, girth 4 to 10 inches.
" " Spanish, 12 to 14 feet, girth 4 to 5 inches.
ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
" " Guernsey, 16 to 18 feet, girth 7 to 9 inches.
LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
" " EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.
" " Silver-leaved (Tilia argentea), 12 to 14 feet, girth 5 to 6 inches.
LIQUIDAMBAR, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 12 to 14 feet, girth 4 to 5 inches.
" " Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
PLANES (English-grown), 12 to 16 feet, girth 4 to 6 inches.
POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
" " Purple, 14 to 16 feet, girth 6 to 7 inches.
THORNS, Double Pink, 8 to 10 feet.
" " Scarlet, 8 to 10 feet.
" " White, 8 to 10 feet.
TULIP TREES, 8 to 10 feet.
WALNUT, Common, 10 to 12 feet.

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BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
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BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
" " Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 8 to 10 feet.
POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
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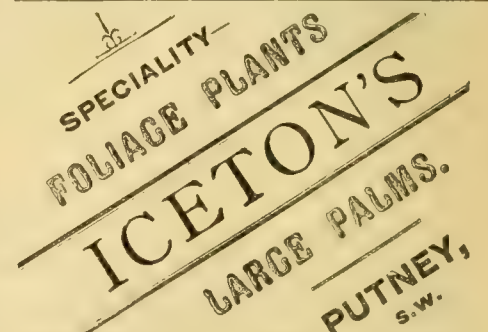
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 24, 1892.

PERFUMES.

THE principal mode by which cholera and other allied diseases are transmitted is, undoubtedly, drinking water. But at the same time infection is also carried amongst organic particles in dust and air to the mouth and respiratory organs of the body. It is, therefore, important to surround those organs with an antiseptic atmosphere. Now, it is not yet fully appreciated in England, although well known from experience in the east, that perfumes, vegetable scents, and sweet odoriferous plants, possess energetic antiseptic qualities. Many among us are wont to laugh at what we too often deem an effeminate taste for scented handkerchiefs and sachets, but from time immemorial the usefulness of pungent and sweet odours has been handed down by tradition, custom, and reputed knowledge. It may not, therefore, be out of place to quote some details regarding the curious action of odorous essences which have recently been published by M. Henri de Parville in the scientific column of *Les Annales Politiques et Littéraires*, of Oct. 23, 1892.

The ancients were wont to make great use of the antiseptic qualities of essences. The examination of mummies proves that the Egyptians well understood and recognised their efficacy. Czermack when examining two mummies, buried at least three thousand years ago, found the bodies so well preserved that he could recognise fragments of their intestines under the microscope. He found that the principal procedure employed for embalming consisted in the introduction into the interior of the body, of aromatic powders, of balm, of several resins and pure essences, and in the application of bandages soaked in gums and saturated with various essences. It was these essences which preserved the bodies. This is so well proved that Dr. Hunter has succeeded in embalming bodies and mummifying them by injecting into the arteries a solution of Venetian turpentine* (Térébenthine de Venise) in essences of Lavender, Rosemary,† and Camomile. The essences, moreover, formed the base of the principal dressings and ointments which were used by the medical physicians of antiquity, from the days of Hippocrates, Celsus, Galen, Aetius, down to Ambrose Paré and Fabricius d'Aquapendente. Two physiologists of Lyons, Mons. Cadéac and M. Albin Meunier, whilst searching amidst the chaos of the ancient pharmaceutical writings of the

* Pistacia terebinthus; called in Italy terebinto.

† Rosmarinus officinalis, of the Mediterranean, from which eau-de-Cologne, Hungary water, and Vinaigre-au-quatre-voleurs are manufactured.

ancient writers, have found in the composition of the theriacal mixture and recipes of Andromachus,* or ascribed to him, all the drugs whose virtues have been vaunted by the old doctors and extolled even by the poets. This celebrated electuary contained fifty-four substances known by the empirical methods, then in vogue, as being the most active and efficacious. This medicine has been used for centuries, and was even regarded by the savant, Borden, as the supreme remedy (*le remède par excellence*). It is, in fact, composed of sulphate of iron, opium-powder, some other doubtful substances, and forty-two active aromatic substances, in their essential form; the essences have, therefore, been the antiseptics of the Egyptians, the Greeks, and the Romans, whilst even at the present day aromatic plants form the basis of popular medicine.

MM. de Cadéac and Meunier have studied lately, in their turn, the physiological action of essences, and by their experiments have arrived at some interesting conclusions, which may be commended to the notice of our gardeners and all horticulturists.

The antiseptics and disinfectants most commonly used have been examined by these experts comparatively. The most powerful is corrosive sublimate, which destroys the microbes of typhoid fever in ten minutes. Ether saturated with iodine, kills the microbes in thirty-six hours. The solution of sulphate of copper takes nine days to kill the same microbe, so also the solution of phenic acid in the same time; boric acid in eleven days.

On the other hand, essence of Cingalese Cinnamon kills the microbe in twelve minutes; that of Cloves in twenty-five minutes, of Thyme in thirty-five minutes; of Vervain (*Verbena officinalis*) in forty-five minutes, of Geranium in fifty minutes, of Origan, or Cretan Dittany, in seventy-five minutes; of patchouly of Hindostan in eighty minutes; of absinth in four hours, of sandal-wood in twelve hours; thus, the essence of Cinnamon is microbicide to the extent of killing the typhoid fever microbe almost as quickly as the most potent of our modern antiseptics, in twelve minutes against ten. The comparison with the solutions of phenic acid, boric acid, &c., is all in favour of the essences. Several of them hasten the evolution of the microbe after several hours; whilst our modern antiseptics delay the action for several days.

The Cinnamon from Ceylon takes the first place, and it was extensively employed by the Egyptians in their embalming processes, and it enters into the composition of the theriacal compound. Thyme and Wild Thyme (*Serpolet*), *Thymus Serpyllum*, the Pell-a-mountain of Britain, were long been utilised in popular medicine by the doctors of old. Vervain is still used in the form of tea. The Origan had great renown in the heroic times of Greece as a wound salve. Virgil mentions it in his *Aeneid*, lib. xii.

Many other essences are antiseptic, but their action on the microbe of Eberth is more or less slow, and requires from one to several days. For instance, Juniper takes 27 hours, Balm (*Balsamodendron opobalsamum*) 30 hours, Valerian 32 hours, Orange 32 hours, Angelica 35 hours, Celery 36 hours, turpentine 45 hours, Opoponax 45 hours, Rose 46 hours, Camomile 48 hours; even ether and iodine solution only kills the microbe in 36 hours; and, therefore, it is less efficacious than the Juniper, which was employed by the ancient Egyptians for em-

balming. Turpentine, Orange, and Valerian all enter into the composition of the old-world theriacal medicine.

Incense (the fragrant gum of the *Boswellia serrata*, or *thurifera*) only kills microbe in fifty-two hours, yet it is more active than the solution of sulphate of copper. The Calamus aromaticus, which kills in four or five days, has a superior effect to that of the solution of phenic acid. MM. Cadéac and Meunier have thus passed in review all the most notable essences. At the same time, it will not do to forget that the antiseptic influence varies with the microbe. Nevertheless, the most active essences appear to have the same action generally in regard to most species of microbe. Thus, Cinnamon kills the microbe of glanders after fifteen minutes of contact, exactly in the same time that corrosive sublimate acts on the same microbe. But Cloves, Thyme, Serpolet, Vervain, &c., which follow, require rather more time than phenic acid. The nature of the microbe varies their comparison.

In their experiments, MM. Cadéac and Meunier operated by bringing the microbe in contact with the essence. (What would our anti-vivisectionists say to this?) It therefore becomes necessary to inquire whether the antiseptic power of the essences has like efficacy when administered in the form of vapour. It is plain that for practical use in medicine it is far easier to expose the respiratory channels to vapours than to actual contact with the essence. To respire vapours of essential oils is easy, and a microbicidal atmosphere is readily produced (as gardeners who smoke their greenhouses will be the first to perceive). The experiments carried out in this direction by M. Chamberland meet this inquiry. This savant has demonstrated that the vapours of an essence have actually the same antiseptic qualities as the essence itself in direct contact. This fact is one of singular importance.

M. Henri de Parville goes on to conceive the possibility of composing a modern theriac which will be endowed with a general or universal disinfecting and antiseptic power, against which all microbes would in vain try to exist. In this speculation, however, we cannot follow him. Enough has been said to show that we must not despise the use of the scent-bottle; and also that the cultivation of aromatic plants in the manner of our forefathers, which has fallen into desuetude, and become unfashionable in these so-called degenerate days, may well occupy the attention of our horticulturists at a time when the cholera bacillus and microbe is within a measurable distance of our coast line, and repeatedly entering into our seaports. *S. Pasfield Oliver, Captain, late Royal Artillery, Moray House, Stokes Bay, Gosport.*

NEW OR NOTEWORTHY PLANTS.

ASYSTASIA VARIA, N. E. Brown, n. sp.

This is a greenhouse herbaceous plant, belonging to the order Acanthaceæ, remarkable for its variable foliage, the leaves varying in form from ovate to long and broadly linear, and are usually more or less variegated; the flowers are of moderate size, pale mauve, with dark veins. It was discovered in 1888 in Zululand by Mr. J. M. Wood, the Curator of the Botanic Garden, Durban, Natal, who saw it only in one place; seeds were sent to Kew, from which plants were raised, and the following description made from them.

Plant 9 to 10 inches high, with numerous herbaceous, obtusely 4-angled, pubescent stems, arising from a woody rootstock. Leaves opposite; petioles $\frac{1}{2}$ to $\frac{3}{4}$ inch long, pubescent, connected at their bases

by a transverse line of hairs; the blade is 1 to 4 inches long, $\frac{1}{4}$ to $1\frac{1}{2}$ inch broad, varying on different plants from elliptic-ovate to linear or linear-lanceolate, obtusely pointed, cuneate or rounded at the base, bright green, with a pale variegation along the midrib; the upper surface has a few short hairs scattered between the veins, and the midrib on both sides, and the veins beneath, are more or less hairy; the margin is slightly sinuate. Racemes $\frac{3}{4}$ to $2\frac{1}{2}$ inches long, terminal, 4 to 8 flowered, the peduncle, pedicels, and sepals, all densely clothed with gland-tipped hairs. Bracts minute, subulate. Pedicels 2 to $2\frac{1}{2}$ lines long. Sepals $2\frac{1}{2}$ to 3 lines long, lanceolate-subulate, very acuminate. Corolla-tube $1\frac{1}{2}$ inch long, curved, pubescent, the lower half slender, the upper half rather abruptly and broadly dilated, convex above, flattish, with two broad and shallow grooves beneath; the limb of the corolla is about an inch in diameter, two-lipped, with five nearly equal, broadly ovate, obtuse lobes, 4 to 5 lines long, the middle one of the lower lip being broader than the others; the inside of the corolla is entirely glabrous, the colour is pale mauve, prettily veined with dark purple-brown. Stamens four; the anthers are two-celled, one cell placed higher than the other, acute at the apex, obtuse at the base. Ovary stipitate, minutely pubescent or glabrous, seated on a white swollen disk. Ovules two in each cell. Fruit 1 inch long, including the $\frac{1}{2}$ -inch-long stipes, the seed-bearing part compressed, pandurate from being constricted between the seeds, and there is a deep groove on each side running lengthwise between the seeds; the apex has a short, blunt beak. A native of Zululand. *N. E. Brown, Herbarium, Kew.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA LEOPOLDI, PERNAMBUCO VARIETY.

UNDER the above name, a plant which flowered out of an importation which the collector had advised Messrs. Sander & Co. as being entirely composed of the species now known as *C. Victoria Regia*, was exhibited at the last meeting of the Royal Horticultural Society. Since then I have seen several far finer examples, which seem to indicate that, as a variety, it will be distinguishable from the old type by their flowering in a smaller state, by the rich Indian yellow ground, to the dark reddish-brown sepals and petals. The side-lobes of the lip are white or blush-white, the front-lobe carmine-crimson more or less broadly margined with white. The flowers are very sweet. *J. O'B.*

LELIA ANCEPS ALBA.

It is gratifying to find this shy-flowering section of Orchids responding liberally in the matter of flower-spikes on being placed in full sunshine. Last year, the first season they were grown in their present position, our plants threw three spikes, and this season there are seven. Grown previously in partial shade they grew splendidly, but evidently more sunshine was needed to mature the pseudobulbs, and induce flowering. We are looking forward with interest to those now flowering for the first time. The common forms are very useful at this time of the year, and the white ones doubly so. *Jas. Brown, Arddarroch, Gareloch Head.*

VANDA AMESIANA.

Few, if any, of the recently-introduced species of Orchids are more useful than the above for producing cut flowers in winter. The plant is of dwarf compact habit, not growing more than a foot high, with semi-terete leaves, and so slow is their development, that not more than half-a-dozen of them are made in one season's growth. The flowers, which are very fragrant, are produced on racemes from 18 inches to 2 feet in length, are of a delicate rose colour, or sometimes deep purple in the centre, shaded off to a pale pink or white at the outer margin of the petals. When the plants are strong and in good health, the lower part of the flower-spike is paniculated for about half its length, and from three to

* Andromachus was physician to Nero, and author of a theriac or compound medicine long in repute.

four such racemes are produced from the axils of the leaves made the previous summer. When such is the case, the individual flowers, too, are larger—from 1 to 1½ inch across—and have more substance in them than when the plants are unhealthy. For cultivation as a plant to produce cut flowers, it has few equals, as they stand well after being cut if not subjected to a hot dry atmosphere. For decorative purposes, either in the conservatory or drawing-room, it would be hard to surpass. I have grown this species in several houses, and find that an intermediate temperature suits it best. The East-Indian house is too hot, for there the growth gets drawn, and in a cool-house the thick fleshy roots damp off. It delights in a sunny place in the intermediate-house, where a free circulation of air can be permitted. Potted in crocks and charcoal, with a little sphagnum on the surface, it seems at home. The winter temperature may range from 45° to 60° Fahr., so that for a warm conservatory mixed with Ferns it looks charming. *B. P.*

As it is, the commercial importance of Cola-nuts in the West African Colonies is very great, and will become more so as the continent is opened up. Hitherto, in this country, Cola has been looked on rather as a drug than as an article of dietary; but Mr. Christy deserves commendation for his efforts to introduce it as an alternative for Tea or Coffee.

It is claimed for it, that while lacking the injurious qualities of the former substances, it is as palatable as they are, and more nutritious. Cola is recommended as a beverage for all whose occupations subject them to long abstinences from food, as it is not merely satisfying, but sustaining. The sample that we have seen is a favourable one, the flavour is suggestive of that of Cocoa, but with a slight additional bitterness. For soldiers on the march, or for labourers especially in tropical countries, it would be most valuable. Cola is described by Dr. Masters in *Oliver's Flora of Tropical Africa*, vol. i., p. 220, from which we take what follows:—

"It varies very much in the size and form of the

to is of entirely different nature, being the seeds of a *Garcinia*, described and figured, so far as the imperfect material would allow, by the present writer, in the *Journal of Botany*, March, 1875, p. 66, t. 160. It is rather a curious coincidence that the embryo, both of the Cola and of the *Garcinia*, should be of anomalous character. Neither the one nor the other is referred to in the bibliography to Sir John Lubbock's *Seedlings*, although numerous figures exist.

TRAINED YEWS AT ABERGLASNEY, CARMARTHENSHIRE.

THE accompanying illustration represents a remarkable avenue or bower of trained Yews at Aberglasney, a quaint Jacobean mansion and garden belonging to Mr. Lloyd Phillips. The avenue is formed from a single row of Yews, the branches of which are carried over in an arch-fashion from the left, as seen in the illustration, and planted in the earth on the right, from which position numerous branchlets spring up from the ground obliquely. The effect of the bower as viewed on the spot is delightful, a peep of the old garden being seen at the end of the avenue. Similar work with trained Yews has on former occasions been illustrated in the *Gardeners' Chronicle*, as in the well-known and remarkable work at Hatfield called the Vinery, and the beautiful Lime bower at Rothamsted; in all instances the trained Yews are associated with Jacobean or Elizabethan mansions.

At Aberglasney, there is a small but remarkable old piece of gardening close to the house and Yew bower. There is a moderately large quadrangle in front of the windows; in the quadrangle, a large stone-bordered pool of water has been formed, with a fountain, aquatic plants, and gold fish in the centre. On three sides of the quadrangle there is a kind of covered walk, under a stone roof, supported by stone columns, with a stone balustrade above. Curiously enough, a second broad walk, with garden beds as borders, is carried over the walk below, so that persons from the trim garden above can look down on to the trim garden with its cool water and fountain below.

The whole effect of the place is delightful, beautiful, and curious. It requires but little effort on the part of a wanderer in this charming garden of old times to people the place once more with the gentlemen and pretty ladies of Jacobean times.

RHODODENDRONS.*

(Continued from p. 742.)

HYBRIDS.

The number of hybrid Rhododendrons that have been raised in England is exceptionally great. The species generally cross freely with each other, and ripen seeds abundantly under cultivation. There are limits, however, to the "blends," even among Rhododendrons. Thus, no one has yet crossed any of the forms of *Azalea indica* with any other species of the genus; some profess to have done it, but there are no positive proofs. Nor have the Malayan species been crossed with any other than their own kind. Many of the Sikkim species refuse to inter-cross. On the other hand, some very remarkable crosses have been made, quite as astonishing as anything that could be expected.

Dean Herbert raised various hybrid Rhododendrons at Spofforth, and his remarks upon them in his classical paper on "Crosses and Hybrid Intermixtures in Vegetables" are well worthy of perusal. According to him the first hybrid in this genus was the result of an accidental cross between *R. ponticum* and a hardy *Azalea* in the nursery of Mr. Thompson, at Mile End. This hybrid is still popular in gardens, and is known as *R. azaleoides*, *R. odoratum*, &c. There are two very large beds of it at Kew. It has a compact habit, is sub-evergreen, and bears loose heads of the most fragrant lavender

* A paper read before the Kew Gardeners' Society, by W. Watson, Assistant-Curator.



FIG. 117.—TRAINED YEWS AT ABERGLASNEY, CARMARTHENSHIRE.

COLA.

TEA, Coffee, Cacao, Guarana, Cola, Coca, are all known as restoratives, and are used in various parts of the world as refreshing beverages, or are used for the purpose of enabling the partaker to endure prolonged abstinence from food, or unusual physical exertion. No doubt all the substances we have named have that power.

Which is preferable is pretty much a matter of local convenience, custom, and prejudice. The essential ingredient in almost all, if not all, is the alkaloid thein, or caffeine. Certainly not the least efficient are the West African Cola-nuts, which contain a larger proportion of alkaloid than Cacao or Coffee. These are the seeds of a Sterculiaceae tree, *Cola acuminata*, not far removed, botanically speaking, from the Cacao. Many species of *Sterculia* would, no doubt, furnish seeds of equal value, and as they can be cultivated in most tropical regions, it is highly desirable that their culture should be extended. Towards the promotion of that object much has been done at Kew, so that from the West Indies alone a supply of Cola could now be derived.

leaves and flowers, the appearance of the pods, the colour of the seeds, and even in the presence of from two to five separate and distinct cotyledons. Whether these variations depend upon cultivation or not, it is not easy to decide; whether or no, numerous intermediate gradations between the different forms may be traced. The number of cotyledons varies even in seeds taken from the same pod. Barter says that the nuts with four cotyledons are not so much prized as those with two, in the native markets. Karsten gives an admirable figure of the plant, but not having the fruit, he mistook it, and constituted of it a new Terebinthaceous genus. The tree has been introduced into the West Indies, South America, &c., the form usually cultivated being the broad-leaved, large-flowered one. The name Cola or Kolah seems to be also applied to several other Sterculiaceae seeds, but those of *C. acuminata* and its varieties are those most prized in the native markets. The 'Bitter Cola' of Fernando Po is the produce of some other tree, some *Guttifera*."

The cotyledons of the true Cola when fresh, as in the case of some specimens received by us a short time since, are of a beautiful coral-pink colour, but this is lost in drying. The Bitter Cola above referred

and white flowers. Loddiges, Lee & Kennedy, Standish, the Waterers, and Veitch's, among the nurserymen, and the Earl of Liverpool, Earl of Carnarvon, and Herbert among amateurs, were among the first to interest themselves in the cross-breeding of *Rhododendrons*. In more recent times, we have had the late Mr. Mangles, Davies of Ormskirk, I. Anderson-Henry, Luscombe, Cunningham, Noble, and, of course, Messrs. Veitch and Anthony and John Waterer, all of them more or less specialists in the work of *Rhododendron* breeding. The following are some of the most interesting hybrids hitherto raised, with their parentage:—

R. arboreum	...with R. catawbiense	= R. Russellianum.
"	" " " R. caucasicum	= R. venustum.
"	" " " R. maximum	= R. Cunninghamii.
"	" " " R. ponticum	= R. altaculense, &c.
R. Aucklandii	... " R. arboreum	= not named, Kew.
"	" " " R. Hookeri	= R. kewense.
"	" " " R. John Waterer	= (not named).
"	" " " R. album elegans	= R. Manglesii (fig. 122, p. 767).
"	" " " R. ponticum	= R. Alice Mangles
R. Thomsoni	... " R. Fortunei	= R. Luscombei.
R. Edgeworthii	... " R. formosum	= (not named).
"	" " " R. multiflorum	= R. Countess of Derby.
R. Nuttallii	... " R. Dalhousiae	= (not named).
R. Dalhousiae	... " R. ciliatum	= R. Countess of Haddington.
"	" " " R. formosum	= R. Henryanum.
"	" " " R. Nuttallii	= R. Victorianum.
R. ciliatum	... " R. Edgeworthii	= R. Princess Alice
"	" " " R. virgatum	= R. multiflorum.
"	" " " R. dahuricum	= R. praeox (fig. 124, p. 771).
"	" " " R. glaucum	= R. Wilsoni.
R. Nuttallii	... " R. Henryanum	= R. edinense.
R. campylocarpum	... " R. John Waterer	= (not named).
R. Veitchianum	... " R. Edgeworthii	= R. Otto Forsteri.
R. argenteum	... " R. glaucum	= (not named).
R. ponticum	... " R. molle	= (not named).
"	" " " R. flavum	= R. azaleoides.
R. maximum	... " R. viscosum	= R. hybridum.
R. catawbiense	... " R. nudiflorum	= R. Govenanum.
"	" " " R. ponticum	= R. Etandard de Flandres, and other various kinds.
R. virgatum	... " R. Prince C. de Rohan.	= R. floribundum.
R. hirsutum	... " R. punctatum	= R. myrtifolium, Lodd.
R. linearifolium	... " R. indicum (Azalea)	= (not named).

Messrs. J. Veitch & Sons have raised about one hundred and fifty distinct kinds from the several Malayan and Javan species named above.

The double-flowered forms, called *balsaminæ-florum* (fig. 123, p. 769), were obtained by self-fertilising a flower which showed a slight tendency to doubling. Of the fifteen plants raised from the seeds, some were single-flowered, some semi-double, and some perfectly double. The name *balsaminæ-florum* has also been given to a form of *Azalea indica*. W. W.

(To be continued.)

TRANSPLANTING TREES, B.C. 1600.

WE are indebted to Mr. W. Lee, of the firm of Charles Lee & Son, the Royal Vineyard Nurseries, for the following interesting communication:—

Miss Amelia B. Edwards, in her valuable book, *Pharaohs, Fellahs, and Explorers*, furnishes an account of the transport of trees 3500 years ago, that proves once more the truth of Solomon's assertion, that there is nothing new under the sun.

Queen Hatshepsut, whose throne is now in the British Museum, reigned at Thebes as sole monarch for about sixteen years. The most remarkable event of her reign was the despatch of a fleet of sea-going ships to the land of Punt, a region identified with that part of the Somali country which is situated on the eastern coast of Africa, bordering the Gulf of Aden.

The fleet is conjectured to have made its way down the Nile from Thebes to Cairo, thence through the Sweet Water Canal to the Bitter Lakes, and through the older Suez Canal into the Red Sea.

There are a great number of wall paintings, showing the expedition, but our first will be taken from the landing in Punt. The ancient draughts-

man, in one of the very few known examples of Egyptian landscape art, has carefully depicted for us the characteristic scenery (fig. 118) of the unknown country to which the squadron has made its way. The ground is flat, and thickly wooded, the conical huts of the inhabitants being built on piles, and approached by ladders. A cow reposes peacefully in the shade of a tree to the right, and a bird, known by its characteristic tail feathers as the *Cinnyris metallica*, wings its flight towards the left. Of the five trees represented, two are conventional renderings of the Date Palm. The trunks and branches of the other three are most carefully drawn. An enclosing line carried round each indicates the outline of the foliage, the details of which are left to the imagination. We are here on the banks of a river; the three last-named trees exactly reproduce the odoriferous Sycamore which grows on the borders of rivers. The water is painted green, which may be taken to indicate a tidal river, green being the Egyptian colour for sea water, and blue for fresh water. The fishes, too, are not the fishes of Egypt.

The tableaux form a continuous scene (fig. 119). In our next we see the Egyptian sailors carrying half-grown saplings which have been taken up, with a ball of earth about the roots, and are being transported in baskets slung upon poles, each pole carried by four men. These are accompanied by natives of Punt, some carrying large logs of Ebony, others leading apes. A running commentary of short inscriptions is interspersed here and there between the figures. "Stand steady on your legs, Bohu," says one of the bearers. "You throw too much weight on my shoulders," retorts Bohu.

Over the saplings which are being carried in baskets is inscribed *Nebet Ana*; that is to say, the Sycamore of Ana. Elsewhere we see the full-grown trees. The trunk is massive, the leaf is a sharp-pointed oval, and at the junction of the trunk and the larger branches are seen little copper-coloured lumps of irregular form, representing the resinous gum which has exuded through the bark.

A passage in Pliny shows that this tree, the odoriferous Sycamore, can be none other than the Myrrh tree, whose gum was brought by the ancients from the so-called land of the Troglodytes. According to the old naturalist, the Myrrh tree is found "in many quarters of Arabia; also there is very good Myrrh brought out of the Islands; and the Sabæans pass the seas and travel as far as to the Troglodytes country for it. The plant groweth ordinarily five cubits high, but not all that length is it smooth and without prickles; the body and trunk is hard and wrythen; it is greatest towards the root, and so ariseth smaller and smaller taperwise. Some say that the bark is smooth and even, like unto that of the Arbut tree; others again affirm that it is prickly and full of thorns. It hath a leaf like to the Olive, but more crisp and curled, and withall it is in the end sharpe pointed like a needle. The Myrrh trees are twice cut and lanced in one year, the slit reacheth from the very root up to the boughes, if they may bear and abide it."

Further on he says that, of all the wild kinds of Myrrh trees, "the first is that which groweth in the Troglodytes country;" and this, "the Troglodytike Myrrh, they chuse by the fattiness thereof, and for that it seemeth to the eye greener. The best Myrrh is known by little peeces which are not round; and when they grow together, they yeild a certain whitish liquor which issueth and resolveth from them, and if a man breake them into morsels, it hath white veines resembling men's nails, and in tast is somewhat bitter."

That the ana was undoubtedly the resinous gum of the Myrrh tree is confirmed by the passage from Pliny, which describes it as of a green colour, the green ana being constantly named in Egyptian inscriptions as the most precious and desirable kind.

In the next illustration we see the Egyptian sailors, some carrying the saplings (fig. 120) in baskets slung from poles as before, others laden with big jars, and all hurrying on board along inclined planks. The decks are already piled high

with their precious cargo, among which may be observed three large apes, who make themselves perfectly at home. Slung to the main-mast of the nearest vessel a harp is depicted, of a shape which may even now be seen in the hands of native musicians in Cairo and other large towns. The captain stands on the platform at the prow, issuing his commands, and, small as is the scale, the very natural action of the man in front of him, who shouts the order with his hand to his mouth, must not be overlooked.

Our last tableau shows a row of Sycamore saplings in tubs, with (fig. 121) an inscription, stating that "thirty-and-one growing trees of the Ana were taken at Punt to the holiness of the god Amen. Never was there seen the like since the world began."

The illustrations and text are derived by Miss Edwards from Mariette Bey's work, *Deir-el-Bahari*, being a temple immediately across the Nile, opposite Karnak.

CHRISTMAS FLOWERS.

ANYONE visiting the Christmas market at Covent Garden will naturally wonder where are grown the immense quantities of delicate flowers, plants, &c.—many of which, ere they have left the market, show signs of exposure to a smoke-laden, deleterious atmosphere—and who are the growers? A visit to a similar establishment to that of Mr. Iceton's, in Putney Park Lane, S.W., would enlighten these inquisitive persons to a large extent—at any rate, as regards the trade in Lily of the Valley, Roman Hyacinths, Tulips, *Azalea mollis*, and Palms. All of these are grown in amazing numbers, and the quantity in bloom upon any day the visitor may call is such that would interest even those initiated into these things. When admiring a house full of Lily of the Valley in perfect bloom, the breath of which will seem to cling to us long after the festive season is past, we inquired what number Mr. Iceton usually forced, and were told about 2,000,000, and sometimes more. Of course, this quantity is spread over a considerable time, the first being ready for market early in the month of November; but at Christmas it is usual to have a very large lot ready for sale. We are far from saying that the forcing of Lily of the Valley is not a paying business even now; but on the other hand, the exceedingly high prices realised a few years ago, are now no longer to be obtained—a necessary consequence of the law of supply and demand, which soon adjusts one to suit the other. In those early days, all manner of experiments were tried in order to make the crowns produce flowers with greater readiness, one of which was to artificially freeze the crowns and clumps of those desired for this purpose, and this particular method was found to be very helpful. We believe, however, that it would not pay unless the price to be realised by the blooms was exceptionally high; but at the same time, Mr. Iceton does everything he can to encourage them to freeze naturally in the open air, before lifting them to the forcing-house.

Of Roman Hyacinths, there was also a wonderful display, several houses containing masses of the snow-white blooms. About 200,000 of these are forced annually at this place. Tulips, again, were present in thousands, and we were told that of the scarlets, there were forced 140,000. These scarlet Tulips have a wonderful effect at Christmastide, when perhaps—though it appears unlikely in the south this season—the ground is covered with snow. But the yellow and white are not forgotten, for there are ten varieties here, and in all there will be forced a million and a half. These Hyacinths and Tulips are forced in boxes and pots, the larger proportion in the former, and a number of these small square boxes were being got ready for Covent Garden, all of which were in bloom. Some of the pots had both Tulips and Roman Hyacinths growing therein, and we were told that many persons preferred them in this way.

The next thing that deserves mention is the batch of *Azalea mollis*—for the management always secures a good number of these plants at this season,—upwards of 7000 of which will be disposed of, and needless to say, when such a number is passed through an establishment, exceptionally delicate and charming shades are met with. Of *Lilium longiflorum* and *longiflorum* var. *Harrisii*, about 30,000 are grown, and just now many of these are about 1 foot high, looking stout and well.

PALMS, &c.

The number of Palms grown for the trade is constantly increasing, and several new houses on the ridge and furrow principle have been lately added. Anyone who has not seen these can hardly be expected to form an idea of the quantity in stock, which is enormous. Of course, these consist for the most part of Kentias, Cocos, and such species as will stand plenty of knocking about, and are therefore fit for market work, and furnishing. No room is given to other and rarer plants that may be equally elegant, but not of such accommodating disposition. The greater number of Palms are of such size adapted for sale in large quantities to the

brightened by the seasonable presence of Holly and Mistletoe.

Passing through the aviaries with their melodious occupants, we come to the fruit department, in which the Grapes are specially fine, and so on to the vegetable department, which draws its supplies mainly from Whiteley's 200-acre fruit and vegetable farm at Hanworth, near Twickenham, in which operations on a still larger scale are in prospect, and the great army of 6000 employes and about 500 horses, which Mr. Whiteley regularly keeps on, will have to be greatly increased.

But where do the flowers and plants which make the display come from? will be a question

ing condition, and here and there climbing Roses are planted, whose flowers will come in well in aiding the supply of Tea Roses planted under glass, and which are intended chiefly for winter and spring work.

The walls enclosing the plant-houses have along them a large number of store-rooms, seed-room, bulb-rooms, workshops, stables, potting-sheds, cart-sheds, sheds for storing flower-pots, soil, &c.; and on one side runs a Mushroom-house, some 200 feet in length, the four beds in which, running the entire length, are a wonderful sight, the earlier-spawned being in full bearing, others following in succession, the last spawned just showing through being quite equal to the others. The produce, too, is of the

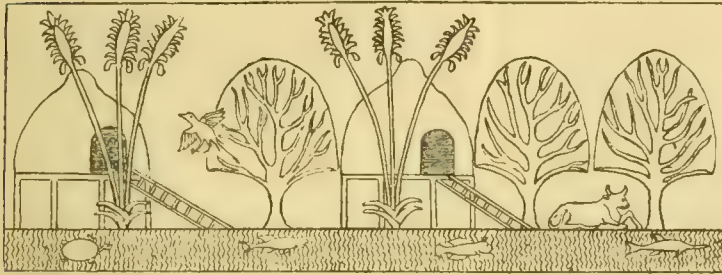


FIG. 118 (SEE P. 762).

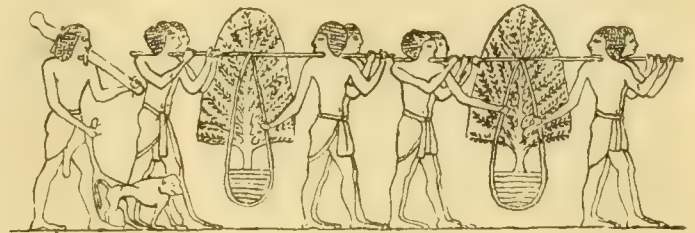


FIG. 119 (SEE P. 762).

growers, but there are also many—kept in houses erected specially for their accommodation—of a larger size, and these are used for furnishing, many very good specimens we noticed amongst these. Greatly interesting is it to hear from a grower like Mr. Iceton, of the varying tastes of customers, how many plants have been the rage of the hour, and growers have had their tact and resources tried to the utmost in meeting the demand, which same are now like unfashionable garments, left coldly alone. The demand for *Araucaria excelsa* is still as great as ever, and we noticed many hundreds of these which had just been struck from cuttings taken from seedlings. These plants from cuttings are much more useful for decoration than are the

which will certainly suggest itself to anyone with a knowledge of the ordinary sources from whence such supplies are drawn, for there is a freshness and beauty about both flowers and plants at Whiteley's very different from the crumpled appearance of similar articles found in shops which are dependent on market produce. The unusually long stalks and quantity of foliage to the flowers, which can only display themselves to advantage when gathered with long stems, are very different from the bunches of flowers of the same kind seen in ordinary shops, which are supplied from the market, and which are often cut shorter than they need be for the sake of uniformity. To us the matter is no secret, for a visit to that flower, plant, and fruit

best quality, for the Mushrooms here have the delicate character of the field Mushroom, and are not of the coarse quality which some spawn gives. About 300 lb. weight per week is the present gathering, and the supply is increasing.

Along other sides of the quadrangle run ranges of Vineries, extending some 1000 feet, and planted with Muscat of Alexandria, Black Hamburg, Gros Maroc, Black Alicante, Gros Colmar, and other favourite Grapes. The quality of the bunches yet hanging is excellent, and the promise for next crop good. When the Vines get older, and Mr. Bethell has had the opportunity of putting his handiwork on them, an immense supply will be forthcoming. Other houses are under the walls, and among them

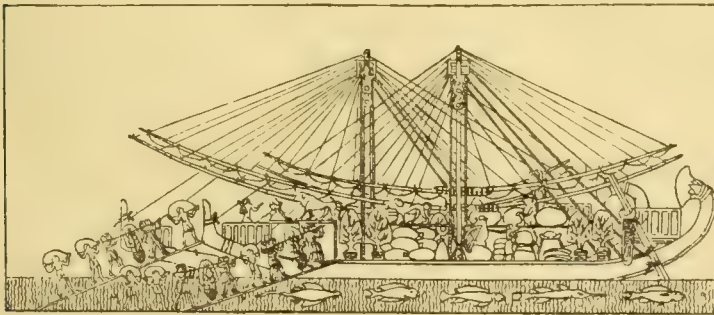


FIG. 120 (SEE P. 762).

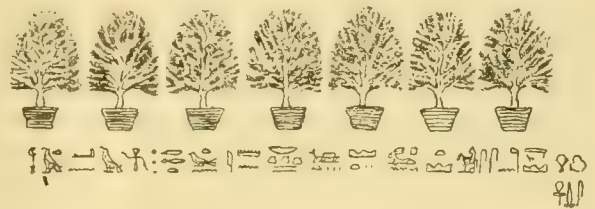


FIG. 121 (SEE P. 762).

seedlings themselves, which often have a bare stem of several inches from the soil.

CHRISTMAS FLOWERS AT WHITELEY'S.

It will be sufficient to say that the flower department at the great establishment at Westbourne Grove is worthy of it and its far-seeing proprietor.

On reaching the flower and plant department, a fine sight greets us, the brightly-tiled floor which leads through the centre and up to the seed and horticultural sundries division being banked on either hand by groups of brilliant scarlet Poinsettias, of bushy *Erica hymalis*, of neat plants of white Roman Hyacinths, white and coloured Azaleas, of stately white Callas, scarlet Van Thol Tulips, and other plants of the season, admirably arranged with Palms, Dracenas, Ferns, &c., by Mr. Fortescue, the chief of the department. At the entrance is the making-up division, in which the making of bouquets, button-holes, wreaths, and crosses is in active operation; and around a great profusion of flowers used in the work and for sale as cut flowers, such as Orchids, Lily of the Valley, Violets, Eucharis, &c., the whole

manufactory, as it might be called, known as Whiteley's Nurseries, at Hillingdon Heath, near Uxbridge, gave us a full and sufficient explanation, and furnished us with material for notes, which will be interesting to our readers.

A sum of £40,000 has been spent on the 9 acres or thereabouts enclosed within the walls which surround the establishment, and the statement of that fact alone would indicate the importance of the concern. But beyond the mere outlay of money, a great amount of horticultural skill has been brought to bear on the work, and especially since the management has passed into the hands of Mr. G. Bethell, who has few equals in knowledge of the many-headed subject he has undertaken to manage, or in adroitness in carrying out the various operations necessary to make such a great business pay, and at the same time give good value to the purchasers of produce, for that was the idea which was paramount in Mr. Whiteley's mind when the venture was first started.

The plan of the nurseries is, that the whole is enclosed within high walls, and a similar wall runs across, dividing the fruit and vegetable garden from the glass department. The walls are furnished with Peach, Nectarine, and other fruit trees in fine bear-

in active work are those for forcing Rhubarb, &c.; and for the production of White Lilac, the plants of which are well set with bloom. A range of Peach-houses completes the square, and with the fruits obtained from them and from the other fruit houses it must be a great advantage to be able to supply produce, as it were, direct from the tree to the consumer.

About seventy long span-roofed houses, the woodwork of which was done by Messrs. Messenger & Co. and which are heated by eight Trentham boilers, form the central block of houses, and examination of their contents showed the wisdom of the things selected to be grown, and the quality, of the plants themselves. The rule here is that nothing which is not serviceable to the buyer shall be grown; nothing is admitted simply because it is easy to grow, and what is called "turns in" quickly. At Hillingdon, all things which experience has proved there is a demand for, are grown; and it takes in all from the ordinary double red and white Stock up to Orchids, and all the things cultivated are clean, healthy, fresh, and floriferous. The evidence of the finished plants of *Chrysanthemums* tell that there has been

a good show of them, and still the houses set apart for them are full of snowy-flowered *Chrysanthemums*—*Elaine*, cut back in order to have them late; the long house of *C. Princess Teck*, with some of their older flowers delicately tinged with rose; the handsome flowers of *C. Lady Lawrence*, and the rich colours of *C. Julie Lagravère*, and other kinds remaining, make a very grateful display at this season. Next week their heads will be off, but the object of their culture will have been accomplished, their purchasers will have received good lasting flowers first-hand, and the treasury of the concern will be so much the better. So also with *Lily of the Valley*, and white *Roman Hyacinths*, large quantities of each are grown, filling the houses with their beauty and fragrance; as soon, however, as they arrive at perfection, the insatiable establishment at Westbourne Grove claims them for distribution, and Hillingdon must hurry up the reserves.

Glancing through the long ranges of houses as we come to them, all aglow with flowers, or beautiful with the frondage of Ferns or rich tints of coloured foliage, we note some of the most striking batches. The first has a fine lot of *Cyclamen persicum* coming into flower, and a profusely-flowered lot of the old double white *Primula sinensis*, which is still the best one for such work; next comes a houseful of scarlet *Poinsettias*, with *Asparagus plumosus* on the roof; then a long range of double scarlet *Pelargoniums*, and another of white *Pelargonium*, Queen of the Belgians, covered with bloom. In these as in other houses space is economised by using the available room beneath the staging for starting Tulips and other bulbous plants for cutting, and in most of the houses there are shelves over the walks, and at the back of the staging, for small stuff, and for the growth of pot Strawberries for forcing, a very large quantity of which it is intended to fruit. Next come houses of single scarlet *Pelargoniums*, of white *Gardenias* planted out, of *Isolepis gracilis* and *Tuberose*s; of pot Vines, which are well and extensively grown; of Tomatos and of other things, and then we come to—

The Orchids, which of course, comprise only showy things, which are, and always will be in general demand, and especially such as are good for cut flowers. As in many new places, at first, the Orchids did not seem to go so well as they should do, but since Mr. Bethell has been able to give them his personal attention, they have made remarkable progress, so that there is no fear of their culture being abandoned; indeed, such an establishment framed on such lines and for such a purpose as that at Hillingdon could not well do without them. There is ample convenience to meet the requirements of all classes of Orchids, and some of them which thrive best suspended in baskets or Orchid-pans occupy situations which would be barren without them. In such situations the *Dendrobiums*, of which there is a fine lot of the showy species, put on splendid growth last year. And so also with other genera—the last growth exhibits marked improvement, and fortells that but a little time is wanted to make them valuable specimens; meanwhile, they will pay well for their quarters by their periodical contributions of showy flowers. One long range is filled with *Dendrobiums*, chiefly varieties of *D. nobile*; another has *Lælia anceps*, *L. albida*, and *L. autumnalis*, many of them being in bloom, and in the same house some sturdy *Cattleya Trianae*, and noble plants of *Oncidium splendens*, many of them sending up strong spikes. Then we come to some well-bloomed plants of *Zygopetalum Mackaili*, a large lot of *Cypripedium insigne* and scarlet *Anthuriums*. In another house are a grand lot of *Cœlogyne cristata*, which it is desired to bring into bloom in succession. Many of these are grown on shelves near the glass, and thrive to perfection. In a warmer house are *Dendrobium Phalanopsis Schroderianum* and other species of that class, and in the *Cattleya*-house a clean, well-grown stock of *C. Mendelii*, *C. labiata vera*, and all the other showy species. In a cool division the *Odontoglossums* give good warrant for the prudence of extending the culture of them, but the *Masdevallias*, although evidently improving, are the least promising feature.

Palms and foliage plants we next come to, and glancing through the neat long houses ranging right and left of the main walk we find thousands of *Kentias*, from the just sprouting seed (and of these there are many thousands pushing) to the neat table plant or large specimen for permanent use indoors; thousands of *Areca lutea*, chiefly in a small state, and large quantities of all the other Palms usually grown for sale. In other houses are *Dra-*

cænas, *Crotons*, and other plants of beautiful foliage, especially handsome being the white and green India-rubber plant (*Ficus elastica variegata*); then we come to a houseful of *Adiantum cuneatum*, the favourite Maidenhair, and in other houses healthy young plants of the many Ferns which make pretty plants quickly.

As in a maze we pass through long ranges of Peach-houses, a fine house filled entirely with stately white Arums, a house of *Lilium Harrisii* and other Lilies, a house filled with feathery *Asparagus plumosus nanus* for cutting, a range filled with Azaleas, &c., for forcing, Cucumbers being in the roof; a house of *Lily of the Valley* which we could smell before we saw them; several Rose-houses, the one with the roof covered with *Niphetos*, and the other with *Maréchal Niel*; Strawberry, and other fruit-houses, &c.

Much pleased with our visit, we saw that, heavy as had been the outlay, properly handled, the investment was a good one; but, although Roses may be abundant there at times, the manager will never have a bed of them.

The trees and shrubs, and a large quantity of Palms, &c., are grown at Whiteley's Farm at Finchley, some 200 acres in extent, and the ground used for the shrubs being fresh broken, they put on good growth, but as they are frequently and carefully moved, they are always fit for sale, and are said to do duty for decoration or for town squares and gardens far better than do the trees and shrubs grown further in the country.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

DENDROBIUMS.—For the next two or three months *Dendrobiums* will be the most valued flowers in the Orchid-houses, if a large and long-continued supply of flowers is desired by the owner. Some species of *Dendrobium* are quite amenable to the orchidist in the matter of flowering at any time when he may want them from the present to the end of the month of March, and even later. This is accomplished without those dire results to the plants which follow when other species of Orchids are brought into flower much sooner or retarded much later than their usual time of blooming. In fact, to force Orchids with much warmth to produce early flowers always ends in failure, and should never be attempted; on the other hand, some species may be retarded for a few weeks without their ever showing the slightest injury from the process, and none better than the following good old species of *Dendrobiums*, viz., *D. nobile*, which must still be placed first as a very useful plant, although new varieties have of late years come to the front, some of which, viz., *D. n. Sanderianum*, *D. n. Cooksonii*, *D. n. nobilium*, and some others, have fine points. Some recent introductions are inferior to the type, and none grow so luxuriantly or propagate more freely. *Dendrobium heterocarpum* is another good old Orchid, and one on which some of the most successful feats of the hybridists have been carried out, viz., the crossing it with *D. nobile*, the result of which was a great variety of intermediate forms, the best perhaps of which at the present time is *D. splendidissimum grandiflorum*, and all of these are as easily managed as the parents. *D. Linawianum*, is a good species, and the parent of *D. Dominicanum*. Other members of this genus of easily-managed *Dendrobiums* are *D. japonicum* and *D. Findleyanum*, and the hybrids *D. Cassiope*, *D. Schneiderianum*, *D. endocharis*, *D. chrysodiscus*, and *D. Cybele*, all of which are extremely useful for early or late flowering. There are some species of *Dendrobium* that are impatient of and suffer greatly if retarded in the least degree. These for the most part have been mentioned in my previous calendars, and the winter temperature for which should not be less than 60°. The deciduous species of *Dendrobium*, *D. Wardianum*, *D. crassinode*, *D. lituiflorum*, *D. Devonianum*, *D. Pierardii*, I am still keeping in a temperature of 40° to 50°, as I find that if these are brought in flower too early, the flowers are few and small; and the plants suffer. We shall now, however, select the earliest, and place them in an intermediate-house, hard forcing being always injurious. *Dendrobium* *McCarthyi* is a beautiful species, but it is one which is said to deteriorate under cultivation. It should be suspended in the warmest house winter and summer, and be not allowed to suffer from lack of

water. *Dendrobium albo-sanguineum* is another species that requires to be rested in a warm house. *Dendrobiums* of the bigibum and *Phalanopsis* sections are still making a good show of flower with us, but as they are now somewhat past their best, and others are coming in to take their place, it is advisable for the health of the plants that the remaining flowers should be forthwith cut off.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

GRAPES AND THE GRAPE-ROOM.—This room should be thoroughly cleaned, washing the floor, putting bottles in order, and otherwise making it fit for the reception of the remainder of this year's Grapes, and being sure that all dampness is got rid of before these are placed in it. Select Lady Downes' Seedling and Black Alicante for the part of the room farthest from the door, as they keep to the latest period, and should therefore be the least influenced by external conditions of the air. Whenever it is practicable, sufficient wood should be left on every bunch to allow of it projecting deeply into the water in the bottles; and, in the case of large bunches, I would advise the splitting of the butt-end by cross-cuts. Carefully cut out every bunch-decaying berry, as only the soundest berries will keep in good condition till the spring. Maintain a dry atmosphere in the room when the work of storing is completed, and a temperature ranging from 45° to 50°. A dry air which has some movement is indispensable, in order that the water in the bottles, &c., which is constantly being evaporated, may be carried off. During rainy and foggy weather it will be wiser, however, to exclude the outer air altogether, and keep a gentle warmth in the hot-water pipes or flues. To safeguard the fruit through the spring months, a keen eye should inspect each bunch for decaying berries once a week at the least; the middle of the bunches is the part to be the more completely searched. The water in the bottles will require to be replenished occasionally. This item in the preservation of plump berries should be strictly attended to, or shrivelling of the berries will show itself.

LATE VINES, from which the fruit has been cut, may be pruned, and receive the cleaning that each individual case demands, vigorously following out former instructions regarding the extermination of insects commonly found on Vines, if these have been present on them. In pruning such varieties as White Tokay and Black Barbarossa, I would recommend the laying-in of this year's wood sufficient in quantity to supply the fruit for the coming year, that is, if big bunches be desired. If the borders in which these late varieties of the Vine are growing stand in need of a mere surfacing, a mixture of well-decayed leaves, Thomson's vine manure and basic slag, will form an excellent medium for the roots to ramify in. If liquid manure from the farmyard tank be largely employed during the growing season, a layer of old mortar or plaster should first be placed on the surface of the border, and then the above mixture added. Afford a good watering if the condition of the soil claims attention in this direction, and keep the atmosphere of the house as cool as circumstances will permit, with a view to giving the plants a decided rest.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

ODD JOBS AND DELAYED OPERATIONS.—In frosty weather the accumulated rubbish-heaps of this and previous years should be turned over and mixed together, which will convert it into fairly good manure for dressing flower-beds and borders. A rubbish-heap should be situated in some out-of-the-way corner distant from the dwelling, and should consist of one heap, consisting of the fresh rubbish; one of a year older, which will be partially rotted; and, thirdly, one which is fit for present use. Composts used in the raising and potting of bedding-out plants should be prepared in due proportions—say, three-parts of waste or old potting soil, and one of leaf-mould. By turning this stuff over a few times in as many days, the exposure to frost will sweeten it, and destroy grubs, &c.

WALKS AND ROAD-MAKING, which in many low-lying places could not be got on with earlier, should, now the ground is firm, be proceeded with in earnest; and, for the same reason, gravel should be carted on to any walks requiring a coating of the same. The mulching of Rose-beds should now be performed, if not done sooner, putting on them a dressing 3 inches thick of good well-rotted manure.

PROTECTING TENDER SHRUBS.—Such plants as Myrtle and *Aloysia citriodora* (Lemon-scented Verbena) will be the better for a little protection being given them in most counties, excepting a few favoured spots in the South of England and Ireland. A few inches thick of sifted coal-ashes placed over the roots, and a mat or two over the branches (if trained against a wall or fence) at night will prevent their being injured by frost. If grown in bush form, as is frequently the case, the branches can be tied together, and dry Fern or Bracken worked among and over the shoots, and then tied and trimmed into a pyramidal shape, thus making them secure from frost for the whole winter.

IVY ON TREES.—While the growth of Ivy is to be encouraged only on the trunks and branches of decayed and decaying trees, young ones must be cleared of it if these are to grow into large specimens. After the Ivy is severed at the base of the trees with a hatchet, it may be torn down.

BEDDING PLANTS.—Protect from frost all kinds of bedding plants requiring protection, and ventilate the pits, frames, and houses freely on every favourable opportunity.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

EARLY SOWINGS OF VEGETABLES.—A bed of tree leaves, when obtainable, or of stable dung and one-third spent hotbed materials, should now be made, or at least the materials mixed thoroughly together, slightly wetted with manure-water or other if too dry, and made into a conical heap to ferment, previous to being used in the making of the bed early in January. The appliance made use of may be a garden frame of one or several lights, or a brick pit having some means of affording top-heat. On this mild hot-bed, which should have a bottom-heat of not more than 80°, and top heat of 60° to 62°, sowings may be made, in boxes or broad shallow pans, of the earliest Cauliflowers, Cabbages, Lettuces, and Onions. Where very large quantities are thus raised, one or several lights are devoted to each kind, boxes and pans being dispensed with, and the seed sown on fine rich soil, spread over the bed, and made firm and level. Failing frames and pits, these early sowings may be made in hothouses having the proper warmth, taking great care to place the pans, &c., as soon as the sprouting of the seed has taken place, near to the roof glass, to prevent drawing. Frames will require linings, and at night mats or litter must be used to cover them, airing being freely done in fine weather. When the plants are ready, prick them off into other frames, or boxes and pans. Excellent kinds and varieties are the Paris Market Sprout, Veitch's Earliest of All Cabbage, Pearl Cauliflower, and Golden Queen Lettuce.

PEAS AND BEANS.—These seeds, if they have been sown as advised in an earlier Calendar, will need to have some soil drawn up to them for shelter as soon as the plants appear above the soil, and some Fir twigs, &c., stuck in to break the force of the wind; and if birds are troublesome netting will be wanted. The rows may be mulched with spent Mushroom-bed materials. Some good early varieties of Peas should now be sown in pots, and placed in a temperature of 45° to 50°, watering the soil very sparingly at first and until sprouted. These will be found of use for planting out if very severe weather should injure those which were sown in the open.

SPINACH.—This crop has suffered in my locality from the too abundant rains, and it will be advisable to assist the earliest crop with a slight dressing of sifted wood ashes, to which one-fourth part of guano or fish manure is added, and then slightly hoeing the ground when it is dry enough.

AUTUMN-SOWN ONIONS will require similar treatment to the Spinach as regards surface-dressing, and a good treading between the rows of plants. If the latter are wintering badly, lift and replant them on another warm border, which should be prepared with dressings, soot or wood-ashes, and be trodden firmly.

CABBAGES.—The plants have, so far, stood well, but it will happen that the plants suffer greatly from east winds later in the winter, and some means should be taken to preserve the earliest lot, these being the greater sufferers. I would advise, as a means to that end, a thorough treading of the soil and rather high moulding, doing all this kind of work in dry weather. Later successions may be similarly treated if of good size.

CAULIFLOWERS.—Those planted in frames or standing pots should be very well ventilated when-

ever there is no actual frost, but defended from heavy rain. Plants under hand-glasses and cloches will require occasional dressings of wood-ashes and soot, to check the ravages of slugs.

TOMATOS will now be making but little progress, and the plants which fruit in the spring should be kept quiet, with a very limited supply of water at the roots. Plants having ripening fruits should be afforded warmth of about 60° at night and 70° by day; and it will be found good policy to perfect these advanced fruits rather than attempt the difficult task of setting more blossoms. If manure is afforded plants with advanced fruits, it should be in weak doses. Seed may now be sown, but there is little to be gained by early sowing, unless the means at command are of the best.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

COBS AND FILBERTS.—In parts favourable to nut-culture, few, if any, other crop pays better for the growing than nuts, which always fetch very good prices, and the nuts keep sound for a comparatively long time. Nut bushes will grow in almost any kind of soil which is not heavy in texture or heavily manured. Much manure in the soil causes the growth of very strong wood, which rarely fruits well. Provided the soil is of good depth, and consists of fertile loam, let it be trenched, and, if not in good heart, some well-decayed manure should be put into the trenches. Nuts should have a southerly, sheltered aspect; north and east winds being warded off by means of hedges, walls, or plantations. Nut bushes are usually increased by means of suckers, which are, before being planted, brought on in the nursery. They should be dug up with roots attached, the top cut back in such a manner that the main shoots or framework of the bush will spring from a point at from 12 to 14 inches from the ground. In some Kentish fruit-gardens, nuts are grown under Apples and other tall-growing fruit-trees, and the crop of nuts, in such cases, is fairly good; but an open spot is the better. When planted amongst tall-growing fruit-trees more space must be allowed between the latter, so that the nut bushes may obtain direct sunlight to ripen the wood and the fruit. When in a plantation by themselves, 10 to 14 feet apart is the proper distance to plant, doing this firmly. The ground must of course be kept clean, and all root-suckers removed from bushes that are not of mature age.

TRAINING.—If the suckers taken from the old bushes are too weak to be shortened the first year, it should be done the second season, and the resulting shoots (four or five) allowed to grow without stopping. The following year cut these shoots to 15 inches in length, and to an outside bud, and repeat this pruning annually, except that, as time goes on, there will be a number of weak shoots, which must be spurred back to a few buds, and as the bushes extend themselves, leave other secondary branches. The nicest form for a Filbert bush is the basin, and its height need not to exceed 8 feet. The loose soil under old bushes on which the caterpillar was troublesome last summer, should be raked from about the stems, and charred, re-filling it with fresh soil from the alleys, or from a distance; and if manure be needed, which will be the case if signs of weakness are visible, apply manure, but do not let this be overdone, nor yet apply fresh farmyard manure—woollen rags and fur-waste are better manures, and these are mostly made use of in Kent. Dig the alleys between the bushes only just deep enough to bury the weeds, removing all suckers. Where there are many acres of nuts, pruning may be taken in hand. In doing this, shorten back all leading shoots. Remove strong, useless wood, sawing out limbs where there are many, and spurring back medium-sized shoots, to form fruiting-wood. With this kind of treatment plenty of nut-bearing twigs will result. Young bushes, which have not reached their proper height, should not be shortened too severely, and leave plenty of male flowers.

FORESTRY.

By J. B. WEBSTER, Fairview, Stangmore, Dungeness.

FELLING AND MARKETING TIMBER.—As house-building and railway requirements are fairly satisfactory, and likely to continue so for some time, there will be no great difficulty in most parts of disposing of the felled timber at remunerative prices when it is of good quality. Saw-mills have been, and still are, pretty busy, and as the price for good, sound timber exhibits a firm tendency, the outlook,

on the whole, is encouraging. I regret, however, to notice that there seems to be a prejudice in some quarters against the use of home-grown timber for house-building, as well-seasoned foreign timber, for all particular purposes, is generally preferred; but there are a great many purposes in connection with house-building where the timber does not require to be seasoned, or even of mature growth, such as lathing, concrete frames, dividing posts, and all purposes where lime comes in direct contact with the wood, as it is found that this mineral preserves the timber for an indefinite length of time, whether old or young.

In a paper before me, I see the following rules laid down by the Board of Agriculture in their specifications, as to the selection of timber: "In all cases where Fir timber is used, that obtained from Memel or Norway, and battens from Dram, St. Petersburg, or other Norway or Baltic ports, is to be preferred; but if not procurable, the best quality of American red Pine only may be substituted; or, if specially allowed by the Board, Larch, or home-grown Fir, may be used, if thoroughly sound and well-seasoned, in which case the age, size, and growth of the trees must always be specified." Now, these restrictions are of by far too general a character, as I have already noticed some of the timber used for building purposes does not require to be of matured growth and seasoned, as the following illustration will show. From the year 1853 up to 1859, I supplied the whole of the home-grown timber for the various purposes in connection with the new castle and other buildings at Balmoral, and the wood was neither of mature growth, nor seasoned when used for the purposes already specified, and I never heard the inspector of work make any complaint about the timber. The trees were all fine clean spars, cut in the natural Pine forest, and averaged about 12 inches in diameter at the butt end. When the wood was cut up at the saw-mill, it was carted direct to the castle, and at once used in its green state by the plasterer and other tradesmen. This shows that young green wood can be used for a variety of purposes in connection with house-building. I should, however, mention that the wood used for the making of windows, doors, flooring, and all particular purposes was well-seasoned foreign wood. But my experience and observation tell me that good sound Scotch Fir of mature growth is not inferior when properly seasoned to the best Memel and Baltic Pine, and may be used for all purposes in connection with house-building with safety.

We cannot grow timber-trees of a similar size to what we get from foreign parts, but mere bulk is not a safe criterion by which to judge of quality, and I maintain that clean grown home timber of mature growth when properly seasoned can be used for every purpose on country estates. During my experience of carrying out estate improvements in Great Britain and Ireland, I have had occasionally to pull down and remove old and dilapidated houses, sometimes the timbers of which were Oak, and sometimes Scotch Fir, and occasionally both kinds of wood mixed together; and although in some cases the houses were of such an age that no one could tell me when they were built, yet the timbers were quite fresh, of a brownish colour, and as hard as horn. I think this is pretty good proof that the lasting qualities of the British Oak and native Scotch Fir are of no mean order, and it shows that the wood of both kinds of trees may be used with advantage. I know some estates where the best of the wood has been sold off and turned into cash, and the inferior trees used for estate purposes, supplemented perhaps with foreign wood for particular purposes. One great drawback to the use of native Pine-timber is the number and size of hard knots to be found in the trunk of some trees when cut up for use. Carpenters do not like Scotch Fir on this account, as it is harder to work, and they say they cannot make such a fine finish as with foreign wood, and I dare say that there is a good deal of truth in this; but then wood of this kind is the exception, and not the rule, and in all cases where the trees have been well handled during the different stages of their growth, the wood is not only free from knots, but when cut up exhibits a close and uniform grain capable of taking on as smooth a polish as glass, which renders it highly ornamental. This I think should stimulate planters to thin their Pine-woods in such a way that the side branches will gradually lose their vitality and fall to the ground of their own accord, and the stems will then exhibit fine clean shafts free of knots or blemish of any kind, and surmounted at the top with a canopy of evergreen branches and spray.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

LOCAL NEWS.—Correspondents will greatly oblige by sending the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited.

Advertisements should not be sent to the Editor, but to the Publisher.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

THURSDAY, DEC. 29. { Roses and Bulbs, at Protheroe & Morris' Rooms.
Plants at Stevens' Rooms.

SATURDAY, DEC. 31.—Plants at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—37°·6.

A VERY important meeting of the members was held on Tuesday last, to consider the proposed new rules for the guidance of the Society. Mr. HARRY VEITCH made a thoroughly business-like chairman, and while courteous to all, and willing to receive suggestions from any source, yet so contrived to push on the business, that the work of revision was got through in less than three hours, although a glance at the programme would lead to the inference that two or three such sittings would not have more than sufficed for the due carrying out of the work. The only objection we can raise is the short time the members had to consider the matter before the meeting. The document was, in our own case, received on Saturday night, and the meeting took place on Tuesday. There was thus not only no time for anyone with his other avocations to consider the matter properly, but it was quite impossible to communicate with members of the Society in the country. The general excellence of the work done, however, may well give rise to doubt whether, if longer time had been given for consideration, the result would have been materially better.

The revision of the rules was rendered necessary to bring them into conformity with the requirements of the Registrar under the Friendly Societies' Act, and hence some proposed amendments were perforce negatived. All through, the meeting had the assistance of the Hon. Solicitor, Mr. PRACOCK, who clearly explained points as they arose, and who has laboured evidently for a considerable time to bring the rules within the limitations laid down by Act of Parliament. The rules were taken *seriatim*, each one being voted upon by the members. Many of the old rules are, of course, retained without

alteration, and on these but little discussion took place; others were modified or expanded, and these, together with numerous entirely new rules, were thoroughly discussed before the vote was taken on each. Members of the Society in the country may then be fully assured that the most careful consideration was given to the matter. The general tendency of the amended rules is to render the Society more secure, to facilitate its method of working, and extend its benefits. No doubt there is still much that is unduly conservative and old-fashioned, and much that is no longer in harmony with the spirit of the times; but reforms in a Society like this are dangerous things, and need to be introduced with caution, lest they do more harm than good. The committee has given testimony that it is awake to the necessity of rendering the Society more popular than it is with the average gardener; and now that a beginning has been made in the way of broadening the work of the Society, and adapting it more fully to the requirements of modern gardeners, we may hope for more rapid progress in the future.

With the fullest sympathy with the objects of the Society, and always anxious as we have been to advocate its claims, we have but too often been met with apathy on the part of the gardeners (we are speaking generally), and the Institution has been, and still is, dependent to a larger extent than is satisfactory to our self-respect, on the generous contributions of outsiders. The widening of the Society's rules may, and we hope will, do something to remove this state of things.

The most important change proposed and unanimously accepted was one which owes its inception, we believe, to Mr. HARRY VEITCH. It will go far to meet objections that are frequently raised. Here is the proposal, Rule III., Clause 10:—

The committee shall be empowered, previous to any election, to credit any candidate who has paid—

4 years' subscriptions with	50 votes.
5 " " "	100 "
6 " " "	150 "
7 " " "	200 "
8 " " "	250 "
9 " " "	300 "
10 " " "	350 "
11 " " "	400 "
12 " " "	450 "
13 " " "	500 "
14 " " "	550 "

This new rule, it will be seen, ensures that a man applying for the pension shall have of right, at least fifty votes, if he has subscribed not less than four years, and fifty additional votes each year up to fourteen years. These votes are, of course, quite independent of any that may be cast for the applicant by the members in the ordinary course. The subscriber will now feel that he is sure of some votes if only he has subscribed for four years. Of course the old rule remains in force, by virtue of which those who have subscribed fifteen years receive the benefits of the society as it were of right, at any rate, without the trouble and expense of an election. Another rule (III., 14) will be received with satisfaction, as it empowers the committee in its discretion to grant gratuities, not exceeding £5 to any one candidate, to each unsuccessful candidate at any election, provided such candidate is a life member, or has subscribed to the institution for at least four years immediately prior to the election.

The other rules do not call for special note. The existing system of election is not altered in spite of its cumbrousness, and of the needless trouble and expense it entails upon the applicant and his friends, to say nothing of the quite

uncalled-for humiliation the candidates are subjected to in being made objects of charity, when in reality they, or many of them, are merely claiming what belongs to them of right—morally, if not legally.

We believe a less cumbrous method might be adopted if the committee, who must know so much more about the merits of each case than anyone else, would select from among the applicants the names of those whom they recommend for election. At the day of election the members present would exercise by ballot their right of objecting to any particular candidate, and of substituting some other whom they might prefer. In any case it is desirable to reduce the begging system to its lowest limits, remembering that our poor friends are not seeking charity in any invidious sense, but simply the assistance in their hour of need, which they have contributed to others so long as they were able to do so.

But at this season there is really no room for discussion on points of detail like this. We are all as one on the general principle. The only thing left for those who can do so is, to take out their cheque-books and fill up a good sum for the benefit of one or other, or both, of our gardening benevolent societies, and to remember the claims of the old and the infirm as well as of the infant and helpless orphan. That is a rule which will never require to be altered, one that always remains in force, and one the fulfilment of which should be for ever regarded as a sacred duty.

LINNEAN SOCIETY.—At this meeting held on Thursday, December 15, Professor STEWART, President, in the chair, Messrs. L. A. BERNAYS, G. GRAY, and W. WHITEWELL were elected, and Messrs. W. STANLEY KENT, H. W. MONCKTON, and F. G. PARSONS, were admitted Fellows of the Society. The President announced the recent death of Mr. H. T. STAINTON, a Fellow and former Vice-President of the Society, and of an European reputation amongst entomologists, by whom his loss would be widely felt. Mr. D. MORRIS exhibited a series of botanical photographs from the West Coast of Africa, and gave some interesting details about the appearance and mode of growth of some of the more remarkable forest trees and plants of that region. The Secretary exhibited a large collection of photographs of Lichens, very neatly mounted and labelled, which had been recently presented to the Society by Professor ARNOLD of Munich. A paper was then read by Dr. MAXWELL T. MASTERS, F.R.S., on the "Classification and Geographical Distribution of the Taxaceæ and Coniferæ," his remarks being illustrated by a specially prepared map, showing proposed "tabulation areas," lent by Mr. C. B. CLARKE, and by specimens of the fruit and leaves of some of the more notable forms. The meeting then adjourned to January 19, 1893.

SIR RICHARD OWEN.—The death of the veteran anatomist calls to mind the immensity of his services to science, the modesty and kindness of his manner, and the profundity of his knowledge. The greatness of his work has to some extent been eclipsed among the general public by the fame of DARWIN; but this is but temporary, as it is certain that the value of OWEN'S contributions to knowledge can never be detracted from. Curiously it is not his practical work that has suffered or can suffer, but his addiction to dogmas and theories now known to be arbitrary, and as botanists say, "artificial" as compared with the "natural" course of evolution. OWEN'S literary style also was harsh and overloaded with neologisms and technicalities; but when all is said, OWEN remains one of the glories of our nineteenth century. In his garden at Sheen, the veteran professor showed a keen appreciation of natural beauty. To him his garden was a real source of recreation. It was not formal or technical, it was



FIG. 122.—RHODODENDRON MANGLESII: FLOWERS WHITE, SPOTTED (SEE P 762)

not botanic—but it was beautiful and reposeful. The anatomist was shown in the fossils and “old bones,” which peeped up in expected places, and gave an air of quaintness and surprise without ever degenerating into cockney-vulgarity, such as such excrescences are apt to do in a garden (see fig. 127, p. 775). OWEN died full of years and of honours, for unlike what too frequently occurs in this country, the single-minded man of science was honoured and revered by all classes of the community, from royalty downwards. The Natural History Museum at Kensington is his fittest monument, and no doubt within its walls a suitable memorial will be raised, to testify to posterity that his contemporaries were not unmindful of the genius and work of RICHARD OWEN.

SCHOLARSHIPS IN HORTICULTURE.—At a meeting of the Court of the Worshipful Company of Gardeners, held on Monday, December 19, at the Cannon Street Hotel, the scheme of examination in horticulture lately set out by the Royal Horticultural Society, was brought under discussion, and it was decided that the company should offer a scholarship of £26 a year, tenable for two years, to be awarded after the examination to the most successful candidate under certain conditions. It was also announced that a second scholarship of the same value was offered by the President of the Royal Horticultural Society, Sir TREVOR LAWRENCE, Bart., and it was hoped that others might follow such good examples. The exact conditions of the scholarships have yet to be settled, but the main provisions will be that the holder shall be between the ages of 18 and 22 years, and that they shall study gardening for one year at least at the Royal Horticultural Society's Gardens, Chiswick, and for the second year either there or at some other place to be approved.

HORTICULTURAL CLUB.—The usual monthly dinner and *conversations* were held at the rooms of the Club Hotel, Windsor, Victoria Street, on Tuesday evening, Mr. HARRY VEITCH, Vice-Chairman of the Club in the chair, and there was a large attendance of members. Amongst those present were the Rev. W. Wilks, F. R. Burnside, F. H. Gall, Messrs. John Lee, H. J. Pearson, A. H. Pearson, J. S. Cousens, J. Burrell, G. Bunyard, J. Cheal, G. Paul, W. J. Jefferies, W. H. Williams, Harry Turner, &c. The discussion on growing Chrysanthemums for exhibition was opened by an able paper by the Mayor of Taunton, W. Herbert Fowler, Esq., who was unable to be present; and the paper was read by Mr. A. H. Pearson. It was listened to with much interest, and elicited a very profitable discussion. Two fine boxes of Chrysanthemum blooms from Mr. Blair, gardener to the Duke of Sutherland at Trentham, were, through the kind offices of Mr. Harry Turner, sent to illustrate the lecture. The next meeting of the Club will be held on January 17.

GLASGOW BOTANIC GARDEN.—It seems that the municipality is about to appoint a superintendent of the parks, who is also to have the direction of the botanic garden. This intention shows that the civic fathers have no appreciation of the requirements of the case. Parks, pleasure-grounds, and recreation-grounds come under one category; botanic gardens, the purpose of which is educational rather than recreative, come under another. There is no reason why a botanic garden proper should not be made attractive, but attractiveness should be subordinate to scientific requirements, and the director of a botanic garden should be a botanist, and not hampered with the administrative detail of public parks in various quarters of the city. In the time of Dr. afterwards Sir WILLIAM HOOKER, the Glasgow garden did excellent botanical work, and there is no reason, that we know of, why it should not do so in the future.

THE BLENHEIM ORCHIDS.—On Monday the 19th inst., and four following days, the famous collection of Orchids which had been got together during the last ten years, was disposed of unreservedly

by Messrs. PROTHEROE & MORRIS. Close by the houses containing these plants a large marquee had been erected to serve as an auction-room. The plants were, in most cases, well cultivated, and although there were few exceptionally fine varieties, a good many specimens of fine types were included. Mr. W. H. PROTHEROE commenced the sale with unbloomed specimens of *Odontoglossum Alexandræ*, the last ten of the 400 lots disposed of including 1000 plants of this species. Among the specimens which realised high prices may be mentioned a plant of *Cattleya Lawrenceæ*, with 150 pseudobulbs and 15 leads, 25 gs.; *C. Mendeli*, one 20 gs., another 15 gs.; *C. labiata autumnalis*, 12 gs.; *C. Skinneri*, with a supposed portion of *C. S. alba* mixed with it, 11 gs.; a fine plant of *Ada aurantiaca*, £8; *Cypripedium Morganæ*, £5; *Epidendrum prismatocarpum*, which had 35 spikes last year, 8 gs.; *Cymbidium Mastersianum*, 6 gs.; *Cœlogyne pandurata*, a fine plant in a pan, 9 gs.; and *Sobralia xantholeuca*, 9½ gs. Other plants fetched only moderate prices. Few visitors arrived by the early trains, but the specials from London, Birmingham, and Worcester arriving at midday were well filled.

CHRISTMAS SUPPLIES IN COVENT GARDEN.—The unusually mild weather that has obtained during the last few weeks has been more favourable than otherwise to the growers of flowers, and consequently a show of even more than usual extent is to be seen. Abundance of Lilies, Hyacinths, Lilacs, Tulips, and Azaleas are generally grown for the Christmas season, but there are more Roses, *Euphorbia jacquiniæflora*, *Narcissus*, *Freessias*, *Poinsettias*, and such-like favourites—not quite so easy of management as the former—than is usual. A good supply of Orchids, including some sprays of *Calanthes*, may also be seen in the Central Avenue at Covent Garden. In another column will be seen notes of two places which have contributed to the floral display. It is worthy of notice that despite the unusually mild weather above referred to, the number of Chrysanthemums is much larger than we have seen at this late season on former occasions, which would appear to indicate that the growers have been fairly successful in their efforts to prolong the “mum” season into the new year. Evergreens are here in quantity, and the Holly appears to be fairly well-berried. In the fruit market there seems to be no limit to the supply of Apples and Oranges, and the Apples, which are principally from America and Tasmania, are selling at very low prices. Nuts, too, are abundant, and the sale for them is good. English Grapes are present in fair quantity, and obtain fair prices, a very large proportion of these are Gros Colmar, although some few Muscats, and other varieties can be had. Amongst the less common of the imported fruits, are some Pomeloes, Limes, and a number of custard Apples, the fruit of a species of *Anona*. The weather which has been fairly free from fog for some time past, changed on Wednesday, when London was again enveloped in its murky shroud.

ASSESSMENT FOR RATES.—Information is continually applied for and given by the solicitor to members of the Nursery and Seed Trade Association 30, Wood Street, Cheapside, E.C. The benefit of Sections 211, Sub-section (1), (b) and 230 of the Public Health Act, 1875, which enacted that “The occupier of any land used as arable, meadow or pasture ground only, or as woodlands, market gardens, or nursery grounds, shall be assessed to the General District Rate in an urban district, or to a separate rate levied in respect of special expenses within the meaning of the said Act in a rural district, in the proportion of one-fourth part only of the net annual value or rateable value of such land, and under which the case of *Purser v. The Worthing Local Board* was decided, whereby it was held that a market gardener or nurseryman, who had erected greenhouses and glasshouses on land in an urban district, was only liable to be rated to the General District Rate in the proportion of one-fourth part

only of the net annual value of the property, has by the Allotments Rating Exemption Act, 1891, been extended to allotments not more than 2 acres in extent, and let as such, and cultivated as a garden or a farm, or partly as a garden and partly as a farm.

INSTRUCTION FOR FORESTERS AND GARDENERS IN THE ROYAL BOTANIC GARDEN, EDINBURGH.—The following are the subjects treated of in the various courses of lectures. CHEMISTRY is dealt with by LEONARD DOBBIN, Ph.D., assistant to the Professor of Chemistry in the University of Edinburgh, who gives the following synopsis. Different kinds of matter: three physical states of matter; physical changes; chemical changes; chemical changes constantly occurring in nature. Chemical elements: compounds; mixtures. Composition of plants: water; combustible matter; incombustible matter or ash. Chemistry of water: oxygen; hydrogen; ozone. Atoms and molecules: conditions, characteristics, and laws of chemical combination. Nitrogen: ammonia; nitric acids (acids; salts); nitrates; nitrites. Carbon: marsh gas; carbonic anhydride or carbonic acid gas; carbonates. Air: the gases of the atmosphere (nitrogen, oxygen, water vapour, ammonia). Sulphur: sulphuretted hydrogen; sulphides; sulphuric acid; sulphates. Phosphorus: phosphates. Chlorine: hydrochloric acid; chlorides. Silicon compounds: quartz; sand; silicates. Potassium and sodium compounds: the chlorides, carbonates, nitrates, and sulphates. Calcium compounds: limestones; shells; quicklime; slaked lime; calcium sulphate and silicate. Iron: cast iron; wrought iron; steel; oxides, carbonates, sulphides, and sulphates of iron. Magnesium compounds: sulphate, carbonate, silicates, &c. Aluminium compounds: clay; alum. Organic compounds: oxalic, tartaric, citric, and malic acids; starch; sugar; fats; oils; albumen, &c. Soils: formation and composition; chemical changes occurring within soils. Manures: composition of farmyard and of artificial manures; application and uses of manures. Food of plants: nature and sources. Decay and putrefaction.

MENSURATION, LAND SURVEYING AND LEVELLING by A. D. RICHARDSON. Geometry: its application in mensuration and land surveying. Mensuration of lines: linear measures; properties of the right-angled triangle and circle. Mensuration of surfaces: square measures; area of the parallelogram, triangle, trapezoid, trapezium, polygon, and circle. Mensuration of solids: solid measures; volume of the prism, cylinder, pyramid, cone, sphere, wedge, and prismoid. Land surveying: two fundamental methods, viz. (a), by distances and offsets, and (b) by triangles; by chain and cross; by angular instruments. Surveying by chain and cross: chain and arrows; measuring tape; offset staff; cross staff; optical square; marks and signals; stations and station lines; chained triangles; perpendiculars; tie-lines; offsets; chaining on slopes; obstacles in station lines; surveying inaccessible areas, roads, rivers, &c.; finding meridian; plotting survey; scales; computing area of survey; “Simpson” rule. Surveying by angular instruments: “traversing” and “trigonometrical” surveys; the theodolite, box sextant, and prismatic compass—their adjustments and uses; selection of base lines and stations; measurement of base lines; measurement and protracting of angles; trigonometrical formulæ required. Levelling: principles of levelling; levelling instruments; “dumpy” and other levels; levelling staff; levelling book; datum point; datum line; bench marks; cross sections; flying and check levels; reducing levels and plotting the section; scales. Setting out: ranging straight and curved lines; marking out centre line on ground; working section and level book; “boning” rods, &c. The practical part of the course, which will embrace field work and levelling, will be taken up in the summer evenings.

PHYSICS, by WILLIAM PEDDIE, D.Sc., assistant to the professor of natural philosophy in the University of Edinburgh. The course will be devoted to an elementary exposition of the pheno-

mena of the physical universe and the laws regulating them, special attention being given to those points which are likely to be of practical value to the class. In the introductory lecture a general sketch of the subject will be given, and its various sub-divisions will be indicated. In the succeeding lectures some of the most important of the sub-divisions will be discussed in detail. The properties of matter—gases, liquids, and solids—will be treated at considerable length in the earlier part of the course, and necessary parts of dynamics, which is not suited for detailed treatment to a non-mathematical audience, will be introduced from the point of view of energy. The subjects of heat and light will receive full elementary discussion, and certain electrical phenomena and principles will also be considered. In all cases the bearing of the questions under discussion on meteorological and other natural phenomena will be fully pointed out. At the end of each lecture the subject for the following one will be indicated, and the corresponding portions of text books, which the class may read in preparation, will be pointed out.

CARDIFF HORTICULTURAL SOCIETY.—The annual meeting of this society was held in the Town Hall on Wednesday, the 14th inst. The accounts for the past year were produced, and showed a small balance in hand, which was considered satisfactory in face of the large falling off in gate receipts, caused by the downpour of rain on the second day of the show. The officers for the following year are as follows:—President, the MAYOR; Chairman of Committee, Mr. J. D. MORGAN; Vice-Chairman, Mr. STEPHEN TRESEDER; Secretary, Mr. H. GILLET. The next show is fixed for Tuesday and Wednesday, August 15 and 16.

THE MIDLAND COUNTIES CARNATION AND PICOTEE SOCIETY.—Amateur cultivators of the Carnation and Picotee will welcome the second annual report just published, as it contains a list of the varieties exhibited in all the winning stands at the last August exhibition in the Birmingham Botanical Gardens, as well as a brief list in each of the various classes of both flowers of the finest sorts amateurs are recommended to cultivate. The income of the Society for the year was £188, prizes paid £90, and a donation of £5 each to the Gardeners' Benevolent Institution, and the Gardeners' Orphan Fund, leaving a balance in hand of £32.

APRICOTS AND RAISINS FROM MILDURA.—Mildura, in the Colony of Victoria, which bade fair to remain a barren desert, has really many natural advantages, needing only the expenditure of capital and a due supply of water to become a flourishing and fertile land. Messrs. CHAFFEY, Bros., have both means and irrigation at their command, for we have received some very promising specimens of Apricots and Raisins grown and dried by them in Mildura. The Raisins are somewhat small in size but of good flavour, comparing favourably with those from other countries. The Apricots are not remarkable either in size or quality; possibly some other variety of the fruit would produce better results; the species which does well in one locality is frequently quite a failure when grown under other conditions. Still, as a promise for the future, the fruit sent is very satisfactory.

SEEDLINGS.—We learn that the great majority of the seedlings, described in Sir JOHN LUBBOCK'S book on *Seedlings*, see *ante*, p. 618, have been grown for the purpose at Kew since 1884. With the exception of a few British plants, and "one or two seeds" from the Cambridge Botanic Garden, the British Museum, and Mr. HANBURY, all the drawings and descriptions were prepared from Kew material. Mr. FRASER says "99 per cent." of the work was done at Kew. The seedlings which Mr. FRASER did not draw himself he obtained from Kew to send to Mr. HENRY.

LIVERPOOL HORTICULTURAL ASSOCIATION.—On Saturday evening, December 17, the Liverpool Horticultural Association held their second meeting of the season in the Free Library, Mr. THOS. WHITE

in the chair, when Mr. HARRISON, of Knowsley, read a paper on "Ornamental Trees and Shrubs," which was chiefly addressed to young gardeners. The paper was very well received, and the reading was followed by some interesting and apposite remarks by Mr. RANGER, Mr. R. W. KEE, the chairman, and others. Votes of Thanks to the reader and the chairman brought a pleasant evening to a close.

HORTICULTURAL INSTRUCTION.—Mr. THOMAS BUNYARD, having delivered a preliminary lecture, has been appointed lecturer on horticulture, fruit-farming, and kindred subjects, to the Norfolk County Council.

BIRMINGHAM GARDENERS' ASSOCIATION.—A paper on "The Rose," contributed by Mr. HENRY CANNELL, Swanley, Kent, with cultural instructions as to planting and pruning garden Roses, was read, in which early planting in October or November



FIG. 123.—RHODODENDRON BALSAMINIFLORUM.
(SEL. P. 762.)

The flower at the top is white, the lower one red-coloured.

was strongly recommended, as root-action sets in at once; and as an example of this, a young dwarf plant lifted in October and "laid in" was sent with a quantity of young newly-made roots. Mr. CANNELL remarked on the advantage of planting at this season, the Rose making few if any new roots after November until the spring. A liberal cutting away of long growths, both on newly-planted and established plants, was also recommended to be performed in the month of November. Much sound information was given, and a lengthened discussion followed. Some plants of the Swanley strain of fine Cyclamen were also sent, and a very fine bloom of the pure white late-blooming Japanese Chrysanthemum, Mdle. Marie Recoura, and also trusses of the new double New Life Zonal Pelargonium. Messrs. THOMSON & Co., nurserymen, contributed a fine bloom of a double scarlet hybrid Margaret Carnation, from a plant raised from seed sown in February last, which had been in bloom since August. Messrs. VERTIGANS & Co., nurserymen, sent ripe fruit of Diospyros kaki, which was tasted, and the flavour found to be pleasant, and not astringent.

PINE-NUTS.—Messrs. FULLER, the well-known American confectioners, of Regent Street and the Strand, are providing, amongst other Christmas dainties, bonbons made of the seeds of some species of Pinus. These are embedded in sugar, and have a very agreeable flavour. Pine-nuts are novelties in this country, but the kernels of Pinus Fremontiana form an article of commerce among, and are the chief food of, the Indians of the Sierra Nevada. Other Conifers possessing edible seeds are Pinus Gerardiana of Cashmere and the Himalayas, of which the kernels are sweet, and nearly an inch long; P. Llaveana, of Mexico; P. longifolia, of which the seeds are much prized by dwellers in the hilly regions of India; P. Sabiniana, of Upper California; the Sugar Pine (P. Lambertiana), and P. Cembra, of which the kernels are used for food by the Swiss peasants: Pinus pinea, whose kernels are consumed by the Italian peasantry. It would seem that there is plenty of variety yet to be made in our confectionery, and there must be dozens more of similar nuts that would lend themselves to the same purpose, with equally good result.

HARDY TERRESTRIAL ORCHIDS.—M. CORREYON, encouraged by the success of his previous treatises on hardy Ferns, and on alpine plants, now proposes to publish a similar work on hardy Orchids, especially those of Switzerland, Siberia, Japan, North America, the shores of the Mediterranean, &c. The price to subscribers is 3.50 francs. Intending subscribers should communicate with M. CORREYON at the Jardin Alpin d'Acclimatation, Genève.

MR. WILLIAM YOUNG.—At a meeting of horticultural and other friends held in the Society's Office, Waverley Market, Edinburgh, on November 28, 1892, it was proposed, and unanimously agreed to, that the time had now arrived when some substantial recognition should be made of Mr. WILLIAM YOUNG'S long and arduous services as Assistant-Secretary, Royal Caledonian Horticultural Society, Edinburgh. For upwards of forty years (for thirty of which he has given his services gratuitously) Mr. Young has had a large share in the active management of the principal floral exhibitions held in Edinburgh, and in this way has been the means of giving a great amount of pleasure to the citizens in general, and all interested in horticulture. The following gentlemen have formed themselves into a provisional committee: Mr. DAVID MITCHELL, 6, Comely Bank, Edinburgh, as Hon. Treasurer; John Methven (T. Methven & Sons), Edinburgh, £2 2s.; D. W. Thomson, 24, Frederick Street, Edinburgh, £2 2s.; D. P. Laird (R. B. Laird & Sons), Edinburgh, £2 2s.; Alex. Milne (Dickson & Sons), Edinburgh, £2 2s.; William Welsh (Dicksons & Co.), £2 2s.; Angus M'Leod, 6, Sylvan Place, Edinburgh, £1 1s.

EAST ANGLIAN HORTICULTURAL CLUB.—At the third annual general meeting of this Club, held at the "City Arms," Norwich, on Wednesday, December 14, the President, Mr. F. MORRIS, was presented with an enlarged framed photograph of himself, and was also, for the fourth time, elected President; and Mr. BARTLETT, of Earlham Hall Gardens, was chosen as Vice-Chairman, and Messrs. BRACEY and BARNES as his deputies. Mr. C. DANIELS was appointed Hon. Treasurer, in lieu of Mr. GEO. DANIELS, who had retired, to the great regret of all the members, and it was resolved that a letter expressing the same should be addressed to that gentleman. Mr. A. F. UPSTONE was for the third time asked to accept the post of Hon. Secretary; a few new members for the committee were selected, arrangements were made for the reading of papers, and a highly satisfactory meeting was brought to a close.

TREE PLANTING IN IRELAND.—Planting operations in the West of Ireland being contemplated on a large scale this season by the Irish Land Commissioners, we have to chronicle the fact that Messrs. WM. FELL & Co., Hexham, are requested to supply 350,000 transplanted Scotch Fir, raised from Highland seed.

"THE VEGETARIAN" appears in the form of a double Christmas number. Doubtless, some people will eat more than is good for them at this season, and a course of vegetarianism might be of service subsequently. Whether the permanent adoption of a purely vegetable diet would benefit all and sundry is another matter. We can conceive of two classes of cases where it would be very beneficial, the one where an excess of meat-foods had been indulged in, the other where food of any kind has been deficient. Between the two extremes is comprised a vast multitude, some of whom might act on the counsel proffered in the paper before us, though we must admit, not very seductively, "Prove all things."

HARPENDEN HORTICULTURAL SOCIETY.—The fourteenth annual general meeting of members of this Society was held in the British School on the 20th inst., Mr. R. LYDEKKER, J.P., one of the Vice-Presidents, in the chair. The report of the committee and the balance-sheet showed that the total amount realised from all sources was £143 16s. 6d., while the expenditure amounted to £155 5s. 11d., leaving a debt of £11 8s. 7d. due to the Treasurer. This was stated to be owing to adverse weather on the show day. It was resolved that the date of the next show be Wednesday, August 23, and that efforts be made to obtain £20 for special prizes for nine stove and greenhouse plants in the open division.

PUBLICATIONS RECEIVED.—*Poems in Petrol-eum.* By JOHN C. GRANT. (F. W. ALLEN, 4, Paternoster Row, London, E.C.)

TREES AND SHRUBS.

ABIES BRACTEATA.

This distinct Conifer suffered a little from the severe winter of 1891, many of the tips of leaves, particularly those to the north-east, having a brown rusty appearance. The tree, however, has this summer made excellent growth, and all traces of the severity of last winter are hidden or past away. This is a very distinct species, and is fast growing, making a handsome pyramidal tree. The one growing here is at present 50 feet in height, with a girth at 5 feet up of 4 feet 9 inches. As yet, however, it has not produced any of its remarkable cones. It would be interesting to know if any has been produced in England. I have not heard of any. [Oh, yes! At Eastnor Castle. See figure in *Gardeners' Chronicle*, Feb. 23, 1889. Ed.] A. Harding, Orton, Longueville.

ABIES AMABILIS.

This is another handsome and distinct species, in colour not unlike *A. Nordmanniana*, but has foliage more dense and silvery beneath. It does not form so straight a trunk as many others, as some years the right leader seems abortive, but when it does start it grows rapidly. This year the leader made 2 feet of growth. Its height is 42 feet, and circumference at 5 feet up the same as the above species, 4 feet 9 inches. This tree has produced one cone, that was in 1888, but I failed to save it; it dropped to pieces. It was about twice the size of cones of *A. Nordmanniana*. No frost seems to injure it. The male catkins are of pink colour, and look pretty in spring. A. Harding, Orton Longueville.

GARDEN EGGS.

The Garden Egg, or Egg plant (*Solanum Melongena*), is supposed to be native of Asia. It can be readily grown in Jamaica, and at certain times of the year, it would be profitable to send it to the United States markets.

Soil and Situation.—A good rich soil is necessary; plenty of thoroughly rotted short stable or cattle manure should be dug in. A sheltered position should be chosen, where abundance of water can be given.

Sowing Seed.—The seed is sown in nursery beds, and when the seedlings are 2 to 3 inches high, they

may be transplanted into the permanent beds. About one ounce of seed should give 100 plants.

Planting.—The plants are set out at 3 feet apart in a row, the rows being 5 feet apart. About 3000 plants go to the acre.

Cultivation.—If well grown, large fruits are desired, only a certain number should be allowed to each plant in proportion to its strength and the particular variety. The ends of the branches should be pinched when the fruits are ripening. The varieties differ in the length of time they take to ripen their fruit, from two to six months. In a tropical climate like Jamaica, it is preferable to grow those varieties which require the longest time, as the fruit is larger and better flavoured. In temperate climates, on the other hand, the "early" varieties are preferred.

Varieties.—The following are the chief varieties:—

1. Long Purple.—The fruit is from 6 to 8 inches long, and 2 to 3 inches in diameter; it is best in quality before it is fully grown. Five or six months are necessary for its growth. There may be eight or ten fruits on a large healthy plant.

2. Early Long Purple.—This is only an early variety of the preceding, and the plant is not so strong nor so large.

3. Round Purple.—The fruits are large and somewhat Pear-shaped. Not more than three or four should be left to grow on a plant.

4. New York Improved.—The fruit is like that of the Round Purple, but the plant is smaller. Not more than two fruits should be allowed to a single plant.

5. Early Dwarf Purple.—This is an early variety. The plant is low-growing and branching, and may carry ten or twelve fruits. The fruit is of a longer shape than the Round Purple, 3 or 4 inches long, and about 2 inches in diameter at the thick end.

6. White China.—This is a very distinct variety, with long slender white fruit.

7. Landreth's Thornless Large Round Purple.—This is a variety recommended by Messrs. Landreth.

8. Large Round White.—Similar to No. 7, but white in colour.

Nos. 1 to 6 can be obtained from Messrs. Vilmorin, Andrieux & Co., 4, Quai de la Mégisserie, Paris. Nos. 2, 4, 7, and 8, from Messrs. Landreth, 21, South Sixth Street, Philadelphia, U.S.A.

The following note is by Mr. William Harris:—

"When in charge of Castleton Gardens some years ago, I tried several times to raise Garden Eggs from seed, but without success, the plants either dwindling away and dying after a sickly existence, or, if they lived, failing to produce fruit.

"I found that the settlers in the Castleton district grafted their plants on the Susumber (*Solanum mammosum*), a common Jamaica plant, which practice I adopted with great success. The grafted plants produce fruits of a very large size and fine flavour.

"The mode of grafting which I adopted was that known as wedge grafting. The stock is cut to the depth of 1½ inches with a sharp knife, and the cleft kept open till the scion is inserted.

"The scion (a piece of growing branch of Garden Egg, about twice as thick as an ordinary lead pencil, and about 4 inches long) is cut wedge-shaped, and inserted in the cleft, so that the inner barks may coincide. It is then wrapped with soft string, or woollen yarn, and covered with a handful of clay.

"There should be no bark left upon the inserted part of the scion except that on the outside."

The following notes are taken from the Seed Catalogue of Messrs. Landreth:—

"On Prices.—Commission merchants in Philadelphia pay the market gardener about on an average 1½ cents per fruit. The highest prices are 8 and 10 cents per fruit.

"Florida fruit arrives in Philadelphia the latter part of November, and commands 6 to 8 dols. per barrel crate. Earlier in the autumn the market is supplied by fruit from Jersey. Towards Christmas the price of Florida Egg plants rises to 10 dols. per barrel crate, and then declines by April to 6 to 8 dols., and by May to 5 dols., after which they are

likely to arrive in a damaged condition and be worthless.

"On Cooking.—Fried. Peel the fruit and cut crosswise in slices of full diameter and of one-third of an inch in thickness, sprinkle salt between the slices and set aside for half an hour, when remove the water, dry and dip in butter and bread crumbs, and fry in hot lard until brown.

"Baked. Peel the fruit and cut into small pieces. Place in a pan with butter and sweet oil over a fire for 3 minutes, add salt, pepper, and a little sauce or gravy. Take it from the pan, and put in a baking dish, coat over with bread-crumbs and Swiss cheese, and bake in oven till quite brown." *Bulletin of the Botanical Department, Jamaica.*

HOME CORRESPONDENCE.

THE KEW GUILD.—The sympathetic notice of the proposed Kew Guild in the last number of the *Gardeners' Chronicle* is introduced by a remark which seems to need a word of explanation. The proposal has received my approval, as likely to meet what we have long felt to be desirable, that of knowing the whereabouts and careers of our men after they have left Kew. Its main object is, therefore, to foster and maintain the *esprit de corps*, which has grown up in the establishment. To imply, however, that it is in any way an "organisation for gardeners, in order that they may obtain the social position and emoluments to which their qualifications entitle them," is to put the proposed guild on the level of a trades union, which is a form of combination absolutely foreign to the end now in view. W. T. Thiselton-Dyer.

EDINBURGH BOTANIC GARDEN.—In spring and summer "the stonework" is three parts hidden. "The little pockets," each with its labelled occupant, I admit, are unsightly now, but they are not nearly so much so in the summer. It was so arranged when the rockery was first formed, to keep the plants separate. I used the words, "almost perfect," because it fulfils the two necessities of a botanic rock-garden—use and ornament. "Voyager" probably did not read my notice a second time, or else he would not have written, "the plants enumerated are by no means remarkable for interest or variety." In the preliminary part, I distinctly say that I was only giving a list of those plants that were in flower on a bitter cold day in winter. It was far too cold to read all the labels to find rare plants, many of them dormant. If by the North of Scotland "Voyager" means the counties on the Moray Firth, e.g., Elgin and Nairn, they have a warmer climate in winter than Edinburgh. If he will say what gardens they were he saw, it would be of interest to many more besides myself. Edinburgh has no intention of trying to rival Kew, neither should there be any rivalry. "Voyager" must know that opinions differ as to what is tasteless or otherwise, and that two adjectives do not make a "eulogistic notice." *Vagabond.*

HAREWOOD HOUSE, YORKSHIRE.—It will interest many of your readers who know this fine old Yorkshire seat to hear that Mr. Fowler, who has for so many years presided over the gardens there, has now retired, and has been succeeded by Mr. James Jeffrey, from Caversham Park, near Reading. The kitchen garden, fruit, and plant-houses are all being thoroughly overhauled, and the heating of the latter improved and modernised. Harewood is in many ways a unique place, and the mansion, its situation, and terrace gardens are among the finest of their kind in England. Among other interesting objects, they claim to possess the oldest white Vine in England—said to have been planted in 1783. The house, which it occupies fully, is a lean-to 60 by 20 feet, built in 1839. It is planted outside, and the stem measures some 17½ inches in circumference a little above where it enters the house. It still looks hale and hearty, and fruits freely, though the bunches are now very small. M.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—I have carefully read the letters of your correspondents J. H. Goodacre, W. Smith, and John Chinnery, recently appearing in *Gardeners' Chronicle* on the subject of the Gardeners' Benevolent Institution. I feel like many of my brother gardeners, that if these correspondents would kindly give us a little information as regards the rules of the

institution and the benefits a gardener would derive from it, many young gardeners would be greatly enlightened. [See p. 766. Ed.] *Thos. Price, Castle Pygyn Gardens, Abergwili.*

EUROPEAN RHODODENDRONS.—I am much obliged to Mr. O. Forster for his note on my Rhododendron paper (see *Gardeners' Chronicle*, p. 731). In the table showing the distribution of the genus, I said there were three species in Europe, viz., *R. ferrugineum*, *R. hirsutum*, and *R. lapponicum*. *R. ponticum* and *R. flavum* (*Azalea pontica*), I included with the Asiatic species, although they do really extend into Europe. Surely Mr. Forster is wrong in calling *R. Ungerni* and *R. caucasicum* European? Rhododendron *myrtifolium* is a hybrid, not a species; and *R. chamæcistus* is now removed into a different genus, viz., *Rhodothamnus*. I should have said that *R. ferrugineum* and *R. hirsutum* are the only species common in Europe, instead of the only two wild; this slip is, however, corrected in the context. *W. W.*

CHRYSANTHEMUM MR. S. COLEMAN.—Mr. Divers is evidently not aware that Miss M. A. Haggas is a sport from Mrs. Heale, and therefore cannot be in a direct line between the one above-named, and its parent, Princess of Wales; therefore, it is only a simple reversion to the type. Is Mr. Divers certain the plant was one of Mrs. S. Coleman to begin with; or is it simply a mistake in naming? *E. M.*

CAMPBELL'S FUMIGATING ROLLS.—In reading the *Gardeners' Chronicle* of the 10th inst., I was somewhat surprised on reading the article by your excellent correspondent, J. Douglas, "The Cineraria and Calceolaria in Winter," p. 713, to find the following sentence—relating to the heading of this paragraph—"the operator not needing to go into the house at all—in fact, it is rather dangerous to do so." I have used Campbell's Rolls rather extensively for the last two years, and have never yet found the slightest danger in them, either to myself or my men (who, I may say, prefer this fumigating material to all others that I have tried), and I should not have the least hesitation in fumigating half-a-dozen houses one after the other, and remaining in the whole time. I consider this one of the best articles in the market for the destruction of fly and thrips, and one that can be safely trusted in the hands of the most inexperienced operator. *B. Ashton, Glossop Hall Gardens, Derbyshire.*

CHRYSANTHEMUM JOHN LAMBERT AT THE HULL SHOW.—In your report of the Hull Chrysanthemum Show it is stated that Golden Queen of England was awarded the prize for the premier incurved bloom in the show. In justice to the committee of the National Chrysanthemum Society (who, to prove its distinct improvement on Golden Queen of England, gave the sport John Lambert a double test, in the shape of a second year's trial, before awarding a First-class Certificate, a decision more than justified by the position the sport has held as one of the best incurves in almost every show reported in the *Gardeners' Chronicle*), I would wish you to state what were the real facts of the case. At Hull, Golden Queen of England, mentioned as the premier bloom in the show, was staged and labelled by the exhibitor as John Lambert. Someone trusting to his own judgment crossed out the original name, and substituted that of Golden Queen of England, which, even were the name John Lambert distasteful to him, is a proceeding I feel sure would meet with the condemnation of exhibitors generally, and is altogether without precedent. Perhaps someone who was present on that occasion will kindly give a correct version of the matter. *John Lambert, Powis Castle Gardens, N. Wales.*

THE KAKI.—Why does Mr. Hanbury call the Kaki rare? It is very common in Japan, common (under its American name of Persimmon) in large parts of the United States, and very common in the Department of Var as a cottage garden tree. *A.*

ITINERANT PLANT DEALERS.—Perhaps dealers of this class may not be so plentiful as those who similarly follow other industries; nevertheless, whenever they are to the fore, I think it will readily be admitted that, in verbosity and wonderful lore, they are in nowise behind their brethren who follow other itinerant pursuits. A good example of what is meant was to be seen at the recent cattle show at Islington, where an enterprising vendor was selling what he styled "Nature's greatest curiosity," which he said was "the Chinese Lily Bulb,

or Water-plant," giving the district where it was discovered—"North-western part of China in the Lake of Alsok;" and in language similar to the individual who sold the Pop-corn at Buffalo Bill's show, said, "It was the only plant in the known world that will grow a long vine, and produce beautiful flowers out of a common jar or a glass of water." The height was given as from 18 to 22 inches, carrying eight or nine of the finest flowers that have ever been seen (*sic*) in this country. Moreover, every flower dropped a new seed, and they bloomed twice a year; further, that it was first shown in San Francisco in 1890, and got the 1st prize of 400 dols. Cultural directions were added, they were definite and to the point, viz., "Place in a jar of water and change it daily for fifteen days, then once a week." We were also told that it floated for ten days, and at fifteen began to grow. During the five intermediate days, we were not told whether it floated or sank; but, still marvellous, the thing was to be had in four assorted colours, red, yellow, pink and white, also male and female; the last seemed to be superfluous as we were before told, "that each flower dropped a new seed." Moreover, it could only be had from the vendor, who was "the only importer." That so much could be made out of a floating herb, which has been tolerably well-known for about 100



FIG. 124.—RHODODENDRON PRÆLON. [SEE P. 762.]

years, seemed to us, the most marvellous part of the business. The thing was the common Trapa, or water Chestnut, by no means an uncommon plant with those who go in for aquaria plants; indeed, the species is very suitable for small aquaria, and may be readily procured through any ordinary seedsman; but, I question if anyone ever saw any but the last-named colour, which may be said to be whitish. The varieties under consideration were *bispinosa* and *natans*, but *Trapa verbanensis* from "Lago Maggiore," in Italy, is hardier, and plants may frequently be procured. *F. R.*

THE MULBERRY.—A Mulberry tree grows in a somewhat sheltered part of the pleasure-grounds at this place, South Hants. Four years ago it was a fine tree, although much more than one hundred years old, and every year it bore a full crop of small fruit. The trunk was 4 feet high, and it had a girth of 6 feet 6 inches at 1 foot above the turf. At the height named the tree divided into three parts, two of one size, and the other much larger. The middle of one still August day, without any warning, the largest branch parted company, falling with a great crash, splitting the bole nearly to the ground, but retaining a hold on it at the bottom, with a few inches of living tissue. The remaining branches of the fallen tree were secured with iron bands and stays. A quantity of soil was laid over the fractured part, and supported and held

together by some large stones, amongst which English Ivy was planted with a view of hiding the stones and soil. The whole mass at the present time is permeated with roots from the Mulberry tree, and the fallen branch has made vigorous growths, the shoots of this year being 2 feet 6 inches long, with much larger leaves than hitherto, and we hope that these will fill up the space between the fallen branch and those still standing. The branch now on the ground has a spread of 40 feet, and still bears a full crop of fruit. Two years since we planted *Crocus* bulbs of various colours, which in the spring make a bright show among the bare branches. *E. M.* [Stout stakes of the Mulberry driven into the soil make the best means of increase. Ed.]

THE LATE MR. JOHN DOWNIE.—To the interesting details you have given of the life and work of my old friend, John Downie, allow me to add that, being only twenty years of age when his father died, he somewhat reluctantly accepted the offer his father's employer made to him to take the position of head gardener at South Bank, Edinburgh, as he doubted his ability as a youth to do justice to such a post. But the fact that his mother had been left with six children in addition to himself, and that stern necessity had made him the bread-winner for the family, he entered upon the new post with characteristic energy, and brought up his brothers and sisters until they were able to shift for themselves. He at once entered upon the culture of Dahlias, Pansies, and Phloxes, throwing considerable ardour into the work. He competed at various exhibitions, and won many prizes. About 1837 the Hollyhock engaged his attention, and it is worthy of record that it was then considered that the Hollyhock could be successfully grown in Scotland only if planted against a wall. In 1839 he obtained some well-ripened seed from plants of his own, and from them raised over one thousand seedlings, some of which showed a remarkable advance upon anything that had preceded them, and so highly were they prized that Mr. Downie named a collection which were distributed by Messrs. Dicksons & Co., florists, Edinburgh; and the next season another, which was sent out by Messrs. James Dickson & Sons, nurserymen, Edinburgh. Thus, Mr. Downie is entitled to the credit of having been the raiser of the first batch of named Hollyhocks obtained in Scotland. Fine and improved varieties of Pansies and Phloxes also rewarded Mr. Downie's efforts. During the same period he was a cultivator of *Ranunculus* and Gold-laced Polyanthus, taking leading prizes whenever he exhibited. The Dahlia was always a special favourite; he commenced its culture in 1833, and continued it at South Bank until he went into business in 1848. His knowledge of the Dahlia was large. He was for several years one of the judges at the Exhibition of the National Dahlia Society at the Crystal Palace, until increasing years made the long journey southwards undesirable. I do not think Mr. Downie can be said to have been the originator of the race of Fancy Pansies; I think the credit of that is rather due to the late Mr. John Salter, who, when driven from Versailles by the Revolution of 1848, came to Hammersmith, and set up in business near to the Railway Station, and raised from seed he brought with him from France some striped and blotched Pansies, several of which were named and distributed. From the best information I can obtain, I think Mr. John Laing, then at Dysart House, was one of the first in Scotland to take up this class of Pansy; but the greatest impetus to its popularity and improvement was given when, in 1856-57, M. Mieliez, of Lille, France, sent over to this country a batch of named varieties of his own raising that were an advance of almost anything previously seen. Messrs. Downie & Laird grew these Pansies with great success; raised and named several varieties, and created a sensation in London by exhibiting stands of blooms of great beauty on several occasions. To them is largely due its present popularity in Scotland, and in England also. I send you these details of the earlier years of the life of an estimable man, and a successful florist may be placed on record. The *Pentstemon* and *Antirrhinum* were also largely imported by the firm of Downie & Laird, who year after year sent out collections of named varieties. It seems difficult to imagine there is a further improvement possible in the *Pentstemon* and *Antirrhinum* than that which characterises it at the present day. *R. Dean, Ealing, W.*

CHRYSANTHEMUMS AT HILLWOOD.—Mr. Caruthers, the gardener at Hillwood, on the Corstophine Hill, is one of the leading Chrysanthemum

growers in Scotland. At the great show of this flower on November 16, 17 and 18, he was a very close 2nd to Mr. Parker, of Impney, for the £25 cup given for the forty-eight class by the Corporation of Edinburgh, the blue ribbon of the Waverley Market Shows. It is really wonderful how Mr. Carruthers is able to achieve the great results he does. He has only under his charge 180 plants to cut from, growing in an early vinery. At the time of my visit the third day after the show, he could have cut, if not as good a forty-eight, an equally good twenty-four. At the show he exhibited forty-eight, twenty-four, and six *V. Morels*. The show-blooms, which were still in their stands, were quite fresh, thus proving their great substance. With such a small number of plants, Mr. Carruthers is only able to grow the best varieties, but every novelty of merit is added. The varieties that were conspicuous for blooms of size and substance were *Pelican*, *Puritan*, *Belle Paul*, *George Herring*, *Sarah Owen*, *Elaine*, *G. Atkinson*, *Rose Queen*, *Edward Audiguier*, *J. S. Dibden*, *Mons. Bernard*, and, of course, *V. Morel*, *W. H. Lincoln*, *Avalanche*, *Sunflower*, and *Stanstead White*. A plant of *Vivian Morel*, from a cutting struck in June, supported a very large flower. *W. Tricker* is the same as *Bride of Roses*, which Mr. Carruthers obtained from Peter Henderson of New York. There were also splendid flowers of the chestnut red *W. W. Coles* and *Miss Alice Broom*. The latter may out *Molyneux* from his proud position. Three full-sized *Gloriosums* on one plant showed the value of 9-inch pots. One of the seedlings raised from seed sent from Japan is very promising. It is a tubular-petalled variety, of a bright lemon colour. *Vagabond*.

PREMIER BLOOMS.—Visitors to our flower shows will doubtless have noticed the prizes awarded for these, but their adjudication under the present conditions must be a somewhat serious business to the judges. Say, to pick out the premier bloom in a "National" Rose Show. What a task it is to go through the boxes in all the competitive classes. Is it fair to expect these gentlemen to carry in their mind's eye the points of innumerable flowers which necessarily come under their bewildering notice? May not mistakes occur in consequence? Would not matters be simplified and expedited by its being an instruction to each exhibitor to stage what he considered to be his premier bloom separately? As by this method the competition would be at once focussed by the censors, comparative ease would be given in the award of the prizes, and the public would have the advantage of criticising, a pleasant process they do not now enjoy. As the schedules for next season's campaign will soon come under notice, now seems an appropriate time to bring the matter forward. *J. B.*

ISLES OF SCILLY: FORCING NARCISSUS.—On Monday, the 12th, I had the pleasure of inspecting the forcing-houses of Mr. Joshua Woodcock, of Porthloo, St. Mary's. By the way, I may say, in passing, that during the last three or four years these houses have been increased in number every year. Those who at the first condemned them, are beginning to say "We shall have to follow our neighbours if we want a share in early flowers." Mr. Woodcock has two houses, each 150 feet long; one has a lean-to roof, is 11 feet wide; the other is a span-roof, 15 feet. On my visit, I was not prepared for the sight that met my vision, in the lean-to house, which contained about 800 boxes, from which 300 bunches had been picked that morning, and it gave promise of another 300 in a day or two. In the other house that had not been gathered from, the sight was grand—a mass of golden-yellow from end to end; this house was incomplete in the middle of November. After the boxes had been put in the houses, fires were put on, but the crop made such a start that the fires were let out again, fearing they would be too early for the market. On December 1, fires were again lit, and the temperature kept up to about 60° by day and 50° by night. As soon as this crop is cleared away, which will be in about three weeks, Tomatos will be ready for going in. The bulbs are planted in boxes, are 20 inches long, 12 wide, and 6 deep, and contain about eighty bulbs. It may be interesting to know that these bulbs are the first to flower in the open ground the next season. The *Narcissus* crops throughout the islands are looking exceedingly healthy and prolific in bloom; nearly all the varieties are above-ground. *Soleil d'Or* is in bloom outdoors in many sheltered spots. They are more forward than on many previous years. *J. C. Tomkin, Isles of Scilly.*

A TRAVELLER'S NOTES.

(Continued from p. 701.)

Singapore Botanic Garden.—At the end of the palm-terrace is the nursery—with many young Palms in pots, seed-beds of others, including one of the *Kentia McArthurii*, as thick as *Cress*; here also are large quantities of *Crotons*, *Coleus*, *Alternantheras*, &c., for re-filling the numerous beds scattered all over the garden. In this nursery, alongside a narrow ditch, the *Arundinas* luxuriate and flower freely. There are two species here—*densa*, a fine large one, not unlike in colour and size *Lelia autumnalis*, and *Phillippii*, maroon and white, and much smaller in size, but still pretty and effective. Crossing over from the nursery to that part of the garden still under jungle, one comes in view of a magnificent bank of *Gleichenia dichotoma* and *flagellaris*, growing, as is demonstrated by the forest of young uncurled leaves, with extraordinary vigour. In one part, this splendid bank, in my opinion one of the finest things in the garden, stretches in an unbroken line along the road, and but a few feet above it for nearly 100 yards, reaches over undulating ground for several yards back to the jungle line. Passing back towards the band-stand, lined on one side by the jungle, in which are fine bushes of flowering *Sanchezia*, *Coleus*, *Honey-suckle*, *Dracenas*, large pieces of *Panax*, and fine blue *Solanum*, as well as *Acalyphas*, *Tagetes*, and smaller front-row plants, one reaches a large open space from which several roads diverge. Opposite this are two tall trees, with some fine *Platyserium* biforme hanging from their branches. They are fine, their long seaweed-like bunches of leaves, from 4 to 5 feet long, waving backward and forward in the wind. Here are also some *Caryota Cumingii* from the Philippine Islands, one bearing twelve spikes of flower and seeds, others bearing ripe, others unripe seed, one in bud, and three emerging from the stem, all of different size. It is a graceful sight, the long thick hanging strings of seeds or flower buds.

On this side of the band-stand are also some plants worth noting. Near a thick bushy *Rhapis flabelliformis*, 12 feet through, and quite as high (a fine specimen), is a *Fagraea zeylanica* in flower, its large drooping flowers almost as large, and with the same recurved petals as *Lilium Harrisii*, are highly and sweetly scented. Its large obovate foliage is wonderfully glossy and handsome.

Another fine tree is *Melanochyla auriculata*, with stiff sessile leaves, 18 to 21 inches long, like a huge *Castanea vesca*. Returning towards the fernery, a wonderfully cool and pretty nook, its principal feature being the great *Angiopteris*, the Orchid-house is reached. On stages are many in pots, the *Calanthes*, especially *C. veratrifolia*, now freely flowering, being amongst the best. East Indian Orchids are weak, but *Cælogynes* are good. *Cypripediums* are well represented, *barbatum*, *Stonei*, and *Rothschildianum*, being amongst the best. There are also many *Dendrobiums*, *Bulbophyllums*, and other genera, but it is clear Mr. Ridley's inclination leads him to the kinds that are doubtless to him more interesting from a botanist's stand point. The plant-house, but a few yards from the Orchid-house, is an immense oblong enclosure, shaded in some parts by wooden bars, and in others not shaded at all. In the centre is a round stage, from which radiate six broad cemented paths 6 feet wide. Another path of equal width encircles the whole house. In the centre stage is a miscellaneous collection of plants—*Crotons*, *Hibiscus*, *Aroids*, *Dracenas*, *Ananas*, *Panax*, and small *Caryotas*; whilst, in a small glass bowl, *Ouvirandra fenestralis*, a fine piece, is producing two of its dichotomously-branched flower spikes. The two portions of the house not shaded from the sun by roofing are those at each end devoted to the *Crotons*, some of which are fine highly-coloured specimens. The *Aroids* are also very good. All kinds of *Alocasias*, *Anthuriums*, and some fine pieces of *Marantas* in low tubs; foliage *Begonias*, grown in the same way, are represented by a large, varied, and complete collection, as are the *Caladiums*, in pots, *Dracenas*, and *Bromeliads*. At one end on a 4-foot stage are flowering plants in pots. *Tagetes*, *Datura*, *Impatiens*, *Eucharis*, *Torenia asiatica*, *Dahlia*, growing like weeds; *Phlox subulata*, *Begonias*, and *Gaillardias*, are amongst the varied collection now flowering on this table.

The bank of Ferns on the further side of the house is very fine, more particularly the huge *Angiopteris evecta*. There are also some fine tubs of various *Nephrolepis*, *Davallias*, *Aspleniums*, and *Adiantums*, all a fresh and lively green.

Passing from this house, where the annual Singapore flower shows are held, towards the office, two avenues, one leading towards the band-stand, and the other towards the aviary, strikes one's attention. The first is of *Cyrtostachys laxa* (rendah), the plants, although planted at the same time, varying from 3 feet to 20 feet in height, a curious phenomenon, for which there is no apparent reason. The lovely long red leaf sheaths of the Palm I have before mentioned.

The other avenue is of *Kentia McArthurii*, nearly all bearing seed, drooping racemes of small red berries the size of a small Cherry. On either side of this avenue are many single specimens of Palms, all carefully and distinctly labelled. Amongst these is a *Licuala paludosa*, a thick impenetrable mass, much like a *Rhapis*; *Hyophorbe Verschaffeltii*, a native of the Mauritius, in flower; *Oncosperma horrida*, the Nibong, its thick stems clothed with long black spines, and with a graceful spreading head; *Areca lutea* is represented by a splendid mass some 15 feet high, and as much through, whilst a specimen of *Elaeis guineensis*, with a stem a yard in diameter, has leaves from 12 to 14 feet long in a thick round even head; *Caryotas* are well represented, as well as the curious *Martinezia caryotæfolia*, and near to the office, *Plectocomia elongata*, a curious plant, its main stem armed with rings of long thin spines with which to cling, resembles a snake in its habit. The specimen in question is growing horizontally, and for several yards is supported on Bamboo uprights.

The herbarium, in the same building as the library and office, contains a large collection of Malay plants, many of which Mr. Ridley is having painted by a clever Cingalese artist, a relation of the man who has done such good work for Dr. Trimen in Ceylon. I saw many of his results, and was surprised at the amount of detail in his work, and the dexterity with which he handles his brush.

The aviary and menagerie contain many interesting specimens. The principal approach is lined on each side by pretty rows of a graceful *Guatemala Palm*, *Synechanthus fibrosus*; the undeveloped young leaf stands straight up in the air like a needle, whilst others partially droop; the leaf-sheath encircling the stem is often 3 feet long.

Opposite this avenue is a grand bush of *Wormia suffruticosa*, 15 yards in diameter, a truly immense piece. It is almost as high, and its noble foliage, relieved by its pretty yellow flowers and buds, is very effective. From this point it is not far from the gate, and if one has made the tour so imperfectly described, one may be said to have had a pretty general view of the garden.

The experimental garden, commenced in 1884, is a little distance beyond the Botanic Garden proper. To reach it, one passes through an avenue of *Eugenia densiflora*, considered the best avenue tree for the island of Singapore. Its thick, leathery, large foliage is certainly calculated to shade thoroughly. Passing along this, one has the jungle on the right, in which *Bromeliads* grow and flower, and *Nepenthes Rafflesiana* pitchers freely. In this experimental and economic garden are all kinds of plants yielding dyes, oils, spices, resins, fibres, medicinal plants, &c., all carefully labelled and arranged as to their particular economic value. There is also a collection of Oaks, of which six or seven are indigenous to the island; their acorns are very large and handsome.

I called on the Sultan of Johore with the Vicomte de Labry; he received us kindly. The Sultan, on my expressing a wish to go to Johore, said his boat should fetch me across the Strait, and that his son should receive me.

The drive to Kangi, where one embarks for Johore, is some 15 miles right across the island, over a perfect road, and through the most lovely scenery; a most enjoyable trip.

The Strait is about three-quarters of a mile broad, but seven sturdy Malays soon placed me on the opposite bank, where I learnt, with regret, the Sultan's son was ill. However, I saw Mr. Kerr, the secretary of the club, who kindly showed me the very little there is to see in Johore. The Chinese are there in force, and here I saw for the first time their gambling-tables, not allowed in British possessions. The system of gambling is very simple, and dependent on which way a square of pith or wood, painted red and white, turns.

With Mr. Fox, I went up the highest peak in the island, named *Bukah Timah*. It is only a few hundred feet high. The road to its base is lined by the magnificent avenue of *Poinciana regia* (now, unfortunately, fast decaying, and being replaced by

Eugenia densiflora), which so struck Lady Brassey, and which she mentions in her *Voyage of the Sunbeam*. We also saw some fine Mangosteen, Coffee, and Pepper plantations. From the summit of this mountain a view of the entire island, with the many small ones off its shores, is obtained; a fine view.

On descending we left the road, and struck into the virgin jungle; I never came out of anything in such a mess in my life, or saw anything so wild and impressive of its kind.

We often passed, always descending the slope of the hill, beneath or above great fallen trunks, of the giant *Dipterocarpaceæ*; by others so rotten, decayed or eaten by ants, that by the slightest of efforts one could poke one's stick right through into the trunks beneath our feet, over which we often scrambled and slipped, our sticks would sink nearly a foot, indeed broken reeds to lean on. Rhatans were in every direction, and it was impossible even to guess where they ended and often where they commenced. On the fallen rotten trunks were many *Sonerillas*, beneath the granite boulders small filmy Ferns, and at the base of the hill many specimens of *Angiopteris evecta*.

We also saw amongst many Aroids, the pretty *Alocasia singaporensis*. This hill is the only place in the island where granite is found, its huge boulders, slippery with mosses, assume the most peculiar shapes; beneath these boulders is the great hunting ground for rare and out-of-the-way plants.

Tigers, living on the wild pig, are often found in this jungle, and we passed more than one of the pits formerly used for their capture.

On the morning of the day on which this letter is posted, February 16, I am going to see a Mangrove swamp, also the other side of the island, but in another direction. In Singapore town, with the exception of the large Chinese quarters, there is not much to see.

The Chinese are in great force, more numerous than any other of the many races, I should imagine; some of them are fine, strong fellows, but their internal economy is not to be imitated.

The police amuse me much, there are four kinds, in four different uniforms, viz., Scotch (from Glasgow), Malay, Sikh, and Chinese.

The Scotch are in bad odour just now. It seems they are discontented, having been brought here rather under false pretensions. The Sikhs are magnificent fellows, all over 6 feet. The Malays vary from 4ft. 6in. to 5 feet, but are said to be plucky. I saw one go after a Chinaman in great style the other night. The Chinese—picked men from Hong-Kong—are on trial, and it is not yet known what will be the result. *James H. Veitch.*

(To be continued.)

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

DECEMBER 13.—Present: Dr. M. T. Masters, in the chair; Professor Oliver, Professor Church, Dr. Müller, Dr. Bonavia, and Rev. G. Henslow, Hon. Sec.

Garden Labels.—With reference to the value of leaden labels, Dr. Masters observed, that some of the same date (about 1774) as of those described at the last meeting, were still on garden walls at Gunnersbury. Dr. Bonavia observed that in India he had found porcelain or china labels with the name burnt in to be the most serviceable.

Abies Smithiana.—Professor Church observed that a fine tree existed at Shelsley Court, which in 1849 was about 120 or more feet in height. According to Paxton, this species was introduced from Kamaon in 1818, so that it was probably one of the earliest examples.

Malformed Orchid.—Mr. O'Brien sent a flower of *Cypripedium Chamberlainianum* having one of the petals standing above the lip in lieu of a sepal, a not uncommon occurrence.

Arbutus procera.—Flowering sprays of this species were sent by Mr. G. Lee from trees, of which there were three stretching to a length of about 22 feet each. At 1 foot from the ground the trunk of one was 3 feet 6 inches in circumference. The trees were planted about forty years ago. They flower profusely, but never bear fruit. He observes that this species is not cultivated so often as it deserves to be.

Grindelia inuloides.—A flowering stem of this plant was forwarded by Rev. W. C. Dod. It is figured in the *Botanical Magazine*, t. 3737.

Peas Attacked by Mites.—A specimen of earth containing mites, which have proved injurious to Peas, was received from Mr. McDouald, of Jura Forest, Greenock. They were forwarded to Mr. Michael for further examination.

Dendrobium Findleyanum, pseudobulb.—Sir Trevor Lawrence sent a bifurcated branch of this Orchid. He observes that "Dendrobium bulbs often make side-shoots from the 'eyes' at the apex of each segment, but this example seems to be a true bifurcation, due it would appear from the bend in the branch to some arrest of growth by a wire or another bulb." A microscopical examination appeared to confirm the above view, for the stem was single at the base, but a slight constriction began on one side, then a second appeared on the opposite side, higher up, until they deepened and met, thereby dividing the single stem into two.

BOTANICAL AND HORTICULTURAL OF NORTHUMBERLAND, DUR- HAM, AND NEWCASTLE.

DECEMBER 7.—The annual meeting was held at Cross House Chambers, Westgate Road, Newcastle, on the above date. Mr. J. Baxter Ellis presided.—Mr. J. J. Gillespie submitted the sixty-eighth annual report of the society. The council regretted that the surplus of £559 17s. 2d. shown in last year's account had been reduced to £412 5s. 6d. This was accounted for by the unfavourable weather at the spring show, and the fact that the Parliamentary by-election for Newcastle occurred on the second day of the autumn show. These circumstances materially affected the number of people who paid for admission to the show. Had it not been for these two causes, the council believed the year's working would have been a financial success. The Northumberland Agricultural Society intended to hold its show in Newcastle next year, and the society had agreed to amalgamate its interests with the Agricultural Society, and arrangements had been made by the two societies. It was hoped that the Town Moor Management Committee would grant the use of the North Road Recreation Ground for the purpose of the two shows. The society's flower show next year would be held in July, instead of August. The council had received and accepted with regret the resignation of Mr. James J. Gillespie, the secretary of the society. Mr. Gillespie, however, had agreed to serve as a member of the council. Next year's spring show had been fixed for April 19 and 20. The statement of accounts for the year showed the revenue to have been £1277 16s. 3d., and the payments £1425 7s. 11d., leaving a deficiency of £147 11s. 8d. The balance in hand was £412 5s. 6d., as against £559 17s. 2d. last year.

The chairman at the close of his remarks on the condition and prospects of the society, moved the adoption of the report. Mr. B. Plummer seconded, and echoed the chairman's remarks as to the determination of the society to go on with its work in spite of all difficulties. The motion was agreed to. Ald. T. G. Gibson was elected president, and the Mayor of Newcastle (Mr. E. Culley) vice-president of the society for the ensuing year. Members of the Council having been elected, the proceedings ended.

THE BOTANICAL SOCIETY OF EDINBURGH.

DECEMBER 8.—This Society met on the above date, Dr. Christison, President, in the chair. Professor Bayley Balfour exhibited a young carpel of *Cycas riminiana*, bearing ovules on its margins, from a plant at present in flower in the Botanic Garden.

Mr. Lindsay, Curator of the Royal Botanic Garden, exhibited a seedling of *Eichornia* (*Pontederia*) crassipes, showing the numerous long, nearly linear leaves, which are the first to appear, as well as a few of the earlier transition forms between these and the adult leaves.

The following specimens, all growing out-of-doors, were sent for exhibition by Mr. Campbell, of Ledaig:—Sprigs of *Escallonia macrantha*, *Genieta fragrans*, two species of *Veronica*, and several examples of *Tritoma*, all in flower, as well as some buds of a *Passion-flower*.

The President exhibited a seed of *Ipomoea tuberosa*, found on the shores of Uist. He read a note by the late Sir Robert Christison, in which mention was made of three other species of tropical fruits, also found in Uist, and which had been sent him by Dr. Macdonald, of Lochmaddy. These were

Entada gigantea, *Dolichos vulgaris*, and *Guilandina bonduc*, all West Indian fruits, carried by the Gulf Stream, and stranded on the outer Hebrides.

In a letter sent to Dr. Christison with the seed, Dr. Stewart, of Ardgour, mentioned that the natives of Uist call this seed "Ainne Moire" (Virgin Mary's Kidney, on account of the colour and the presence of a roughly marked cross on one of the surfaces. It was referred to by Martin in 1692, under the name of "Molluscan Bean," while Pennant calls it "Jamaica Bean."

In the absence of Dr. Stewart and Rev. D. Paul, M.A., Dr. Wm. Craig read a report on the excursion of the Scottish Alpine Club to Killin.

Professor Bayley Balfour next exhibited, by means of the oxy-hydrogen projection microscope, a series of slides, showing stages in the healing of a wound caused by lightning in a large Oak tree, where the wood and the bark had been separated by nearly half an inch over a considerable area of the trunk. The cambium, though split, had apparently been uninjured, and the part adhering to the wood had gone on forming wood, while that adhering to the bark had also formed wood in one direction, till the two wood surfaces met across the gap, and became fused by means of a callus formation.

Mr. Lindsay read the Report on the Temperature and Vegetation of the Royal Botanic Garden for November.

Report for November, 1892.—The month of November was dull and gloomy, but somewhat mild for the season. Storms of wind and rain were less frequent than usual, and no snow fell during the month. The thermometer was at and below the freezing-point on twelve mornings, indicating collectively 41° of frost for the month. The lowest readings were—on the 1st, 27°; 2nd, 27°; 17th, 26°; 18th, 27°; 19th, 26°. The lowest day temperature was 39°, on the 16th; and the highest, 57°, on the 11th. Very few plants are in flower, outdoor vegetation being now almost dormant. Fruit has disappeared rapidly from most trees and shrubs, with the exception of Holly, on which a good supply of berries still remain. On the rock-garden only two plants came into flower during the month, viz., *Helleborus altifolius* and *Gynierium argenteum*.

NATIONAL CHRYSANTHEMUM.

DECEMBER 19.—A largely-attended meeting took place at Anderton's Hotel, Fleet Street, on the above date, Mr. R. Ballantine in the chair. The Secretary brought up a report from the Schedule Revision Committee, who recommended that three exhibitions be held by the Society at the Royal Aquarium during 1893, viz., one on October 11, 12, and 13; one on November 7, 8, and 9; and one on December 5, 6, and 7—thus reviving the mid-winter show. It was also announced that the usual *Dahlia* and *Gladiolus* show would be held in September, on the 6th, 7th, and 8th, but by the Royal Aquarium Company, who would be responsible for the prizes for *Dahlia* and *Gladioli*, the Schedule sub-committee recommending that the sum of £20 be offered by the National Chrysanthemum Society for early Chrysanthemums. It was further stated the Royal Aquarium Society had concurred in these arrangements. The committee unanimously endorsed them. Mr. A. Taylor, East Finchley, laid upon the table a summary of the blooms shown at the Royal Aquarium on the occasion of the November show. From this it appeared that 2163 blooms were staged in the competitive classes, and of this number there were 1134 Japanese in 142 varieties, and 642 incurred in 75 varieties, the remaining 387 blooms consisting of reflexed, Pompon, large-flowered *Anemones*, Japanese *Anemones*, *Anemone Pompon*, singles and new varieties, not yet in commerce.

The Investigation Committee (formed of the officers of the Society), appointed to investigate the charges brought against a member of the Floral Committee in the pages of the *Journal of Horticulture*, by Mr. W. J. Godfrey, of Exmouth, made a report, which was adopted; and, after some discussion, it was recommended that no further action be taken in the matter.

In reference to a printed circular published by Mr. Wells, a resolution was passed expressing the strongest disapproval, on the part of the committee, of such conduct, and to warn the member referred to against a repetition of such irregularity.

On the question of the proposed enlargement of the show-boards, the schedule sub-committee reported they recommended that the matter of the size of exhibition-boards for Japanese blooms be left to the discretion of each exhibitor, in conformity with

the special regulation to that effect. This recommendation was adopted after considerable discussion.

The following resolution was carried on the motion of W. Herbert Fowler, Esq., "That all cups for exhibiting Japanese blooms be limited to 3 inches in diameter, and that no extra supports of any kind be allowed to the flowers. The Horticultural Society of New South Wales, the Christchurch (New Zealand) Horticultural Society, the Cambridge Chrysanthemum Society of New Zealand, and the Yeovil and also the Steyning Chrysanthemum Societies were admitted to affiliation. Twenty-one new members were elected, including three Fellows. The remaining business on the agenda was adjourned until a future meeting.

SCOTLAND.

ROUND EDINBURGH.

THE Edinburgh nurseries collectively form the centre and mainspring of the Scottish Horticultural trade. Some of them are very old-established; the books of Dickson & Co. go back to 1770. The two branches of the trade in which the nurserymen of "Fair Edina" excel is the rearing of forest trees from seed, and the growing of ornamental trees and shrubs. Hundreds of Scotch acres are devoted to these objects, and myriads of myriads would be an inadequate term to describe the incalculable number of seedling forest trees grown. An order of 1,000,000 could easily be lifted in any nursery. It would be hard to count such a number, one would think, but the employes have abundant practice in this kind of work.

The glass-houses are filled to a large extent with plants that are in great demand for decoration, and with those that stand best the gas and atmosphere of dwelling-houses. There are certain species for these purposes which are grown in greater or less quantities in every one of the nurseries. I give a list, so that the accounts may be more concise:—

Aspidistra lurida	Cocos Weddelliana
Araucaria excelsa	Latania borbonica
Ficus elastica	Kentia Belmoreana
Aralia Sieboldi	Phoenix reclinata
Asparagus plumosus	Pteris tremula
Kangaroo Vine ?	„ serrulata

Aspidistra and the two Pterises are grown in greatest quantity at the "New Golden Acre" nursery (Mr. David Thomson's), one side of a long lean-to being staged with the former, and two wide span-roofs with the Ferns, while other houses are partially filled with them.

DICKSON & CO.

Messrs. Dickson & Co. have always commanded the respect of the commercial world of Scotland. As the nursery was founded long before the invention of railways, a great number of the old Scotch nobility have been customers from the establishment up to the present day. The firm is not only the oldest, but, also has the largest acreage, close upon 200 acres being under cultivation. The seed trade is increasing every year, owing to their exports. In garden seeds they annually grow 4 to 5 tons of the Liberton Select Brussels Sprouts, and great quantities of Pansy seed are sent to America and Australia. The largest and most important of their nurseries is at—

LIBERTON.

As the nursery here spreads over 100 acres, everything is grown on a large scale. The ground has only recently been put under cultivation, so it is well fitted for growing the vigorous and healthy fruit trees. In their catalogue, Messrs. Dickson, instead of giving a long list of varieties, give only what they have proved in their nurseries to be the most serviceable sorts to grow. Thus, in the Pear section, it is worded "The best twenty Pears in order of ripening," and so on all through the catalogue. Thirty thousand Apples are grown; budded stocks and maidens form a large fraction; 5000 of each representing the number of trained trees, and bushes and pyramids on the Crab; Apples on the Paradise are also grown in thousands. Cordon

Apples, too, are largely grown, although this mode of training is not much used in Scotland. The fact that 10,000 Victoria Plums are grown shows plainly how extensively Plums are grown. Pears and Cherries are on a smaller scale, but great breaks were covered with orchard Pears for the Clyde-side growers, the most grown varieties being Fair Maggie, Hesse, and Craig's Favourite. Fully half the nursery is devoted to raising forest trees. The situation is very exposed, and great care is bestowed on the layering and transplanting. English Oak, Beech, and the other deciduous hard-wooded trees are included in the term forest trees. As may be imagined from the great extent of ground, there is ample space to grow in quantities shrubs for cover and ornamental trees, such as Poplars, Maples, Horse Chestnuts, and purple Beeches. The new Canadian Populus (*P. canadensis aurea*), was easily distinguishable. The firm evidently expect from the number grown, a demand for it, and also for Acer Schwedlerii, and the Corstophine Plane, the last a variegated Sycamore well worth growing for the sake of contrast. Golden Elder, Sea Buckthorn, and the Double Scarlet Thorn are also much in evidence. Roses are extensively budded, mostly on the Dog Rose. For about 200 yards, a 12-foot border under a wall is devoted to double Primulas; for more than half were the double yellow, but there were also many hundreds of the double red, Alba grandiflora, and Lady Jane. Above the Primulas, Heuchera sanguinea, white and blue Hepaticas, and Lychnis viscaria splendens were planted to a less degree. There were also five rows of the rare Veronica Salicorniodes. The whole length of the wall behind the Primula is covered with trained Peach trees, also the wall at the further end of the nursery.

RED BRAES.

This nursery is mostly stocked with ornamental shrubs, Hollies, and Rhododendrons. There is a fine old Holly hedge at the entrance, indicating that the ground has been long used for a nursery. Many of the hardy Heaths were in flower, Erica Searlei being very floriferous, and the best winter Heath. Three vain-glorious Peacocks were strutting about, the damage they do being overlooked.

Gaultheria Shallon, Spartium multiflorum album, Genista tinctoria fl.-pl., Thuja orientalis, which here assumes a deep brown colour, formed very noticeable rows. At one part this nursery is quite unique, and this feature will always distinguish it in my mind from any other. It is a fair-sized lake, with two Yew-clad islands in the middle. The curves of the lake on the nursery side are arc-shaped, and the steep bank sloping to it is densely planted with Hollies, Laurels, Weeping trees, and Conifers. The planting has been extremely well done, and the blending of the divers tints of green is lovely. At the head is a bank of Rhododendrons and Weeping trees. The wall side is flat, and small shrubs are planted so as to present two convex outlines. The lake had all the appearance, except for the background, of a lake formed in pleasure-grounds.

BONNINGTON.

The plant-houses of the firm are here; another name is Pilrig. They consist of conservatory and a long lean-to, into which seven or eight span-roofed houses open. The conservatory has Camellias in the centre; facing the entrance is a very large ten-stemmed Abutilon, Boule de Neige, which has to be cut back every year away from the roof. Greenhouse Rhododendrons and Cliveas (Imantophyllums), most of which are seedlings, occupied one stage of the first lean-to. Redbraes, a fine variety of the latter, was certificated. On the roof of one of the span-roofed houses was a Stephanotis going the whole length, and the roof of another was covered with Ivy-leaved Pelargoniums. Every sample of seed is proved before being sent out. Seaforthia elegans is grown here as a decorative Palm, and a pretty red-berried plant is Ardisia crenata. Herbaceous Calceolarias are a specialty, and are quite a sight when in flower. One long lean-to and a span-roof are devoted to Ivies in pots. The variegated forms of

H. Cavendishii (marginata), H. elegantissima, and H. madeirensis are largely grown. There is also a goodly stock of Chrysocarpa, Betulifolia, marmorata elegans.

The ground in front of the houses as far as the walk, roughly about 2 acres, is planted with herbaceous and florists' flowers. Prominent were border Carnations, Violas, Pansies, Thrift for edgings, Polyanthus, and Saxifragas. Saxifraga Mawana and S. Wallacei are completely covered with white flowers in spring. It is to be hoped that the inappropriate name of "Tufted Pansy" for Viola will be utterly abolished from their catalogues. *Vagabond*.

MR. MACKELVIE'S ORCHIDS.

Mr. Mackelvie shares with Mr. Buchanan, of Oswald House, the honour of owning the largest collections of Orchids in Edinburgh. The Vandahouse is entered from the conservatory. The first thing that strikes one on entering is the great number of tall Vandas; not content with his own Orchid giants, that are so well-known at the Edinburgh shows, Mr. Kelvie has lately bought some of Mr. Saunders' best specimens—a Vanda suavis fully 6 feet high, and a V. tricolor superba could be put beside it as a companion on equal terms. There were also specimens not quite so tall of Vanda tricolor var. Veitchii, var. Hamilton Palace, and var. Dalkeith. The last-mentioned was a superb variety; the labellum was longer, and of an intenser purple, and the crimson spots on the dorsal sepal were larger—this was most plainly seen at the edge. The Indian Orchid V. coerulesa and V. Denisoniana must also be included in the list of big specimens.

The next house was mainly devoted to Cypripediums, C. Stonei being in flower; the very rare variety of it, C. Stonei var. platytanum, had ten growths on it. Mr. White, of Arddarroch, I believe, offered 400 guineas for it. Another noticeable species was C. O'Brienianum. A Cymbidium Lowianum kept up the reputation for big plants, being a yard in diameter. The well-named Epidendrum ciliare was in flower; the proximity of a fine healthy Oncidium ampliatum majus made one regret that that beautiful Orchid was not in flower.

In the cool-house, plants of Dendrobium Hillii, Cymbidium Mastersi, a winter-flowering variety, although very large, could not compare with a row of Cœlogyne cristata on the opposite side. A Cymbidium Lowianum had twelve spikes on it. In flower were Dendrobium thyrsifolium and Cypripedium villosum. I shall never forget a house of this Dendrobe at Eaton Hall, the golden tints affording a brilliancy and variation of colour never seen in a house of crispums. *Vagabond*.

KINFARNS CASTLE, NEAR PERTH.

It is difficult to conceive a more beautifully-situated residence than Kinfauns Castle, or one that has more attractions for travellers to or from Perth by train, or boat on the river Tay; and these attractions do not end with the castle, which is prettily embosomed among trees on the hill of Kinnoul. Mr. Goodfellow, the enthusiastic gardener, having told us that Kinfauns was the place to go and see fruit-growing well done, as soon as I entered the vegetable and fruit gardens a Peach wall facing south, and nearly 200 feet long, riveted my attention. I can truly say that it is many years since I saw such crops of ripening Peaches in the open. These fruits were of a good average size, and the colour on most of them was bright. What surprised me most was the quantity of Late Admirable ripening, as in gardens many miles further south it is rare (even in fine seasons) to get this variety to properly ripen under glass. Many of the earlier sorts had been gathered; a quantity of Dr. Hogg and Princess of Wales of good quality were on the fruit-room shelves waiting till they were ready for use. Nothing seemed particular about the borders. The walls are high and hollow, and fine shelter is had from lofty Beeches behind the wall; and Mr. Goodfellow says that the trees, when in foliage, seem to throw back bright light on the Peaches. The position is only about 15 feet above the sea-level. The starvation system

is not approved of at Kinfauns among any of the fruits, Apples, Pears, Plums, and Apricots being treated liberally, but the keeping of the roots near the surface is thought to be of much moment.

Apricots on a wall facing south were, like the Peaches, in capital condition, and the last of the crop had been gathered. I saw enough to convince me that there was a decided success in Apricot culture. While examining the roots, I observed that the trees stood on a terrace about 7 feet wide. A range of glass structures in close proximity to the Apricots seemed to shade them, but I was assured by Mr. Goodfellow that it was an advantage to the trees instead of being harmful, the trees being remarkable for health and vigour. The variety mostly in favour was the Moor Park, which in some places is more liable than others to fall a victim to disease.

I noticed the good effect of wall culture on Apples. Celini was remarkable for its size and bright colour. Of Pears of fine size, mention may be made of Conseiller de la Cour, Beurré Rance, and Beurré Baltet. Such a capital second crop of Raspberries at the end of the month of September is not often witnessed as that at Kinfauns. This is accomplished by plenty of muck, liquid and solid. Morello Cherries were in fine form, and the trees in robust health, and seemingly in good preparation for a crop in 1893. It is the previous year's preparation which makes a good crop of Morello Cherries possible in the North. I had to discuss the Strawberry management as I went along. The crops of Strawberries are very heavy, and the fruits of fine size, yet this result is obtained by the old-fashioned plan of digging deeply between the rows early in the autumn; and Mr. Goodfellow will attempt no other at Kinfauns. The foliage was strong and very healthy. No doubt the new crop of roots was quickly formed and supplying the plants, which were forming fine crowns. I know some cultivators who do not only remove part of the roots by this digging and dunging; Mr. Goodfellow does not do much of the latter, as he is afraid of over-luxuriance of foliage.

In the glass structures, Grapes are grown in quantity—no stinting of crops; Lady Downes' and Mrs. Pince were the varieties valued from this time onward. Plants are chiefly grown for cutting and table decoration, as they are in most places, and large breadths of useful species are grown outside for the same purpose. Among bedding plants, I noticed some fine Chilian Beets (home-saved), and Begonias, better than I have seen them in the open air this year. *M. Temple.*

VARIORUM.

THE USES OF THE BAOBAB.—Few trees of tropical countries are better known than the Baobab (*Adansonia digitata*). On all points it is an interesting tree, whether we consider the great age that has been attributed to it, its massive trunk and peculiar growth, or the various uses to which different parts of the plant are put by the people where the tree is common. Though the tree is a native of many parts of Africa, it is cultivated in other warm parts of the world. At one time it had the reputation of being the largest tree in the world, but the Californian Sequoia gigantea and the Australian Eucalyptus globulus and *E. amygdalina*, and now the *Taxodium mucronatum* (figured in the *Gardeners' Chronicle*, November 26, this year), leave it far behind, so far as height goes, for the tallest Baobab—or Monkey-bread tree, as it is sometimes called—does not exceed 60 or 70 feet. It is in its girth, however, in proportion to its height that this tree is remarkable, some trees measuring 30 feet in diameter. This broad trunk divides at no great height from the ground into numerous thick branches, bearing a dense mass of deciduous leaves, amongst which the large solitary pendent flowers on long stalks are an attractive feature, as are also the woody fruits, which measure from 8 to 18 inches long, and are not unlike a Gourd in shape. These fruits are filled with a

mass of pleasantly-acid pulp, from which the natives make a pleasant and refreshing drink. Many of the largest trees in tropical Africa are considered to be of very great age. The Baobab was, indeed, considered by Humboldt as the "oldest organic monument of our planet." Adanson reckoned one tree, which measured 30 feet in diameter, to be 5150 years old. With trees of such a size, and undoubtedly



FIG. 125.—A NEW PUDDING-BASIN.

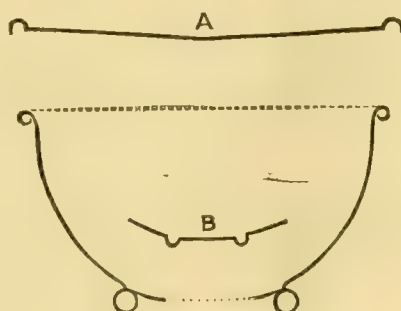


FIG. 126.—SECTION OF BASIN.

of great age, it is only natural to expect to find a very thick deposit of bark upon the trunks; and when we consider that the genus *Adansonia* belongs to a section of the order Malvaceae, which are noted for their fibrous barks, we should further expect that Baobab bark should be turned to same account. The fact is, that the bark furnishes a material for ropes and cordage amongst the natives, and is considered to possess great strength and durability.



FIG. 127.—OSTEOLOGY IN THE GARDEN. (SEE P. 768.)

Some years ago attention was directed to it in this country as a paper material, and excellent paper was made from it, but it has never come into regular use; indeed, had a demand sprung up for it, the supply would in the course of a short time have failed, for the bark is not sufficiently rapid in its formation to meet a constant drain upon it. About five or six years ago, Baobab bark was applied to another use in this country, namely, for making travelling caps for gentlemen; they were soft, close-fitting, warm, and comfortable to wear, but they never became generally used. The fibre of this bark seems, however, to

be an article of export from tropical Africa, as it is referred to in a recent consular report from Loanda, as one of the exports that has almost ceased. The natives, it is said, will not take the trouble to bring it in, as it is bulky, and not so valuable as other produce. This, the Consul remarks, "is greatly to be deplored, as it will lead to substitutes being used, and the fibre trade dying out. There have been several inquiries from Europe lately as to whether supplies may soon be looked for, but it is to be feared that it will not be exported again from Loanda in any quantities." In Senegal, it is said that the fibre is woven into cloth, but the most general way of making native cloths is to remove the outer bark, and beat the inner bark with mallets till it becomes soft and pliable—similar, indeed, to the well-known Tapa cloth of the Pacific Islands. *John R. Jackson, Museum, Kew.*

NEW INVENTION.

THE LORD MAYOR'S PUDDING-BASIN.

AN appropriate illustration for the season is a pudding-basin such as is afforded in fig. 125. Hitherto, puddings, if we may trust the memory of "the oldest inhabitant," have been cooked in earthenware basins, whilst this, the most modern utensil for the purpose, is fashioned of thick block tin. By its use the pudding, whatever the kind, is prevented from becoming soppy on the top, or losing its juices in the water in which it is cooked; and it is as well cooked at the top as at the bottom. These are points in its favour that will appeal to all good housewives, and the more durable nature of the tin as compared with earthenware will likewise be appreciated by them. A is the cover fastened down on the pudding by a bit of string passed over it and through two small loops which project from the rim; B is a false bottom that fits lightly when the basin is filled, which is useful, as enabling the cook to push out the contents if these should stick fast.

The sole licensees and manufacturers of the above are Messrs. Griffiths & Browett, Limited, 68, Bradford Street, Birmingham.

A NEW FRAME FOR HIVES.

THE writer has just had a new frame submitted for an opinion as to its merits. It may be described as an improved "Simmins" frame, which he has used for a number of years himself, and has advocated from time to time, as possessing many advantages over others. The top bar of the "Simmins" frame is $\frac{3}{4}$ inch deep, and therefore always remains rigid, whatever weight it has to carry in honey, or in sections piled on the top. Its depth also enables the beekeeper to grasp it in the middle with the finger and thumb of one hand, so that it can in this way be lifted out of the hive, the other hand remaining at liberty for capturing the queen or any other purpose. Little or no brace is built on the tops of these frames, this being a great point in their favour. The improvement consists of an arrangement both simple and expeditious for fixing in the foundation, as formerly the only way was by running it in with melted wax. The frame is likely when it is known, to come into general use; and the maker talks of registering the design. The price is very moderate, as it can be sold at the rate of 1s. 6d. per dozen. *Expert.*

Obituary.

WILLIAM HEALE.—On December 8, there died, at Easterton, Wilts, in his 84th year, WILLIAM HEALE, son of the late William Heale, of the Nurseries, Calne and Chippenham, and who was for many years nurseryman and seedsman at Devizes. He was an ardent horticulturist and a sound pomologist, and with him passes away the last of the batch of enthusiasts of the great Dahlia and Rose decade of nearly half a century ago.

MARKETS.

COVENT GARDEN, December 22.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.]

A FAIR Christmas trade has been done during the week, with no alteration in prices, and supplies especially good. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, p. half-sieve 0-3 6	Melons, each ... 0 6-1 3
— Nova Scotia, per barrel 10 0 17 6	Pine-apples, St. Michael ... 4 0-8 0
Cobs, per 100 lb. ... 120 0 125 0	Oranges, Florida, per case ... 10 0-16 0
Grapes, per lb. ... 0 6-2 0	
Lemons, per case ... 15 0-35 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Azalea, per doz. ... 35 0 61 0	Ferns, various, doz. 4 0-9 0
Adiantum, per doz. ... 6 0-12 0	per 100 ... 5 0-8 0
Aspidistra, per doz. 15 0-30 0	Ficus elastica, each 1 6-7 6
— specimen, each 7 6-21 0	Marguerite, per doz. 6 0-12 0
Chrysanthemum, doz. 4 0-12 0	Mignonette, doz pots 6 0-10 0
— large plants, ea. 1 6-2 6	Palms, various, each 2 0-10 0
Cyclamen, doz. ... 9 0-18 0	— specimens, each 10 6 84 0
Cyperus, per dozen 4 0-10 0	Pelargonium, scarlet, p. doz. ... 4 0-6 0
Dracena, each ... 1 0-5 0	Solanum, per doz. 9 0-12 0
Erica, various, doz. 9 0-18 0	

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 4 0-8 0	Mimosa, French, bun. 1 0-2 0
Bouvardia, per bun. 0 9-1 0	Mignonette, 12 bun. 3 0-6 0
Carnations, 12 blms. 1 0-3 0	Narciss (Paper-white) French, doz. bun. 2 6-5 0
Chrysanthemum, p. doz. blooms 1 6-6 0	Pelargonium, scarlet, per 12 bunches ... 6 0-9 0
— p. doz. bunches 4 0-10 0	12 sprays ... 0 9-1 0
Cyclamen, doz. blms. 0 3-0 6	Poinsettias, per doz. blooms 4 0 9 0
Eucharis, per dozen 4 0-7 0	Primula, double ... 0 8-0 9
Gardenia, per dozen 4 0-6 0	Pyrethrum ... 2 0-4 0
Heliotrope, per doz. sprays ... 0 6 0 9	Roses, Tea, per dozen 1 0-2 0
Hyacinth, Roman, doz. sprays 0 6-1 0	— coloured, dozen 2 0-4 0
Lilac, white French, per bunch 5 0-6 0	— yellow (Maréchal), per doz. 3 0-6 0
Lilium Harrisii, doz. 8 0-10 0	— red, per dozen 1 0-2 0
various, do. ... 2 0-4 0	— (French) p. doz. 1 6-4 0
Lily of the Valley, doz. sprays 3 0-6 0	Tuberose, 12 blms. 0 3-0 9
Maiden Hair Fern, 12 bunches ... 4 0-6 0	Violets, Parme French, per bunch 5 0-6 0
Marguerite, per doz. bunches ... 4 0-8 0	— Czar, French, per bunch 2 6-3 6
Orchids:—	— small French, p. doz. bunches 2 0-3 0
Cattleya, 12 blms. 6 0-12 0	— small English, p. doz. bunches 1 6-2 0
Odontoglossum crispum, 12 blms. 2 0-6 0	

ORCHID-BLOOM IN VARIETY.

HOLLY AND MISTLETO very good in quality.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 1 0-1 6	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 0 4-0 3	Carrots, per bunch ... 0 3-0 6
Carrots, per bunch ... 0 3-0 6	Seakale, per basket ... 2 6-...
Cauliflowers, each ... 0 3-0 6	Shallots, per lb. ... 0 6-...
Cucumbers, each ... 0 9-1 6	Spinach, per bushel 3 6-...
Endive, per dozen ... 2 0-3 0	Tomatoes, per lb. ... 0 6-1 0
Herbs, per bunch ... 0 8-1 0	Turnips, per bunch ... 0 4-0 6
Lettuces, per doz. ... 1 6-2 0	
Mushrooms, punnet 2 0-	

POTATOS

The market for English Potatoes is almost at a standstill, owing to the large arrivals of foreign, which are very fine in quality, and in splendid condition, and selling at from 50s. to 60s. per ton. Best English selling at from 7s. to 90s. *J. B. Thomas.*

SEEDS.

LONDON: Dec. 21.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that, as is usual towards the close of the year, the seed markets this week present quite a holiday appearance. Values generally, in the absence of business, show considerable firmness. Alsike and white are, however, both somewhat lower. Trefoil keeps steady. There is no change in grasses. Königsburg Tares, notwithstanding their cheapness, are neglected. For Rape seed higher prices are asked. White and brown Mustard continue scarce and dear. The demand for Peas and Haricots is meagre. Hemp and Canary seed, like all other articles just now, are inactive.

FRUITS AND VEGETABLES.

BOROUGH: Dec. 20.—Quotations:—Cabbages, 2s. to 2s. 6d. per tally; Cauliflowers, 9d. to 1s. 3d. per dozen; Spinach, 1s. to 1s. 6d. per bushel; Brussels Sprouts, 1s. to 1s. 3d. per half-sieve; Carrots, 2s. 6d.; Turnips, 1s. 6d.; Parsley, 1s. 6d. per dozen bunches; English Onions, 5s. to 6s. 6d.; Dutch do., 4s. 6d. per cwt.; Horseradish, 1s. 6d. to 1s. 9d. per bundle; English Apples, 2s. 6d. to 10s. per bushel.

SPITALFIELDS: Dec. 20.—Quotations:—Prices to-day are unaltered from those of last week.

FARRINGTON: Dec. 22.—Quotations:—Carrots, Bedford, 47s. to 50s. per ton; Cauliflowers, 5s. to 7s. per tally; Celery, 10s. to 11s. per doz.; Sprouts, 1s. to 1s. 3d. per half-sieve; English Onions, 4s. 10s. to 5s. 10s. per ton; Parsnips, 60s. do.; Turnips, 40s. to 45s. do.; Horseradish, 1s. 9d. per bundle; American Golden Russets, 14s. to 16s. per barrel; Almeida Grape, 15s. per box; Florida Oranges, 8s. to 11s. per case.

POTATOS.

BOROUGH: Dec. 20.—Quotations:—English Magnums, 50s. to 65s.; Hebrons, 60s. to 70s.; Snowdrops, 60s. to 75s. per ton.

SPITALFIELDS: Dec. 20.—Prices to-day are unaltered from those of last week.

FARRINGTON, Dec. 22.—Quotations:—Magnums, Bedford, 60s. to 65s.; Imperators, 55s. to 60s.; Main Crops, 90s. to 100s.; Hebrons, 80s. to 90s.; Sutton's Abundance, 80s. to 90s.; Lincoln Magnums, 60s. to 65s.; Lincoln Imperators, 60s. to 65s.; Blacklands Magnums, 50s. to 55s. per ton.

GENERAL AVERAGES: Dec. 21.—Magnums, 50s. to 75s.; Hebrons, 60s. to 80s.; Snowdrops, 60s. to 80s.; Imperators, 60s. to 70s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending December 17, and for the corresponding period last year:—1892: Wheat, 26s. 4d.; Barley, 24s. 6d.; Oats, 10s. 10d. 1891: Wheat, 36s. 10d.; Barley, 29s. 6d.; Oats, 21s. 4d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 80s. to 115s.; do., inferior, 50s. to 75s.; hay, best, 75s. to 112s.; do., inferior, 50s. to 65s.; and straw, 28s. to 44s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending December 17.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.					
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ina.					
0	2 +	6	24	— 145 + 282	2 +	248	49 5	4	26	
1	2 +	6	32	— 364 + 349	4 —	197	27 9	14	30	
2	2 +	9	27	— 234 + 244	5 —	194	25 3	26	30	
3	2 +	12	36	— 206 + 222	3 —	179	27 1	16	35	
4	4 +	15	31	— 182 + 297	4 —	178	23 6	19	34	
5	4 +	16	11	— 151 + 107	3 —	160	24 6	14	39	
6	3 +	21	13	— 246 + 259	2 —	202	46 5	17	33	
7	3 +	23	13	— 175 + 183	1 —	203	36 8	17	33	
8	3 +	28	4	— 146 + 117	2 —	191	31 1	23	40	
9	3 +	24	11	— 189 + 135	0 over	227	38 1	9	30	
10	4 +	33	4	— 121 + 143	4 —	196	39 1	15	33	
*	3 +	44	0	+ 35 + 36	5 —	192	29 3	12	45	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

The following summary record of the weather for the week ending December 17, is furnished from the Meteorological Office:—

"The weather during this period was mild and unsettled as a whole, but during the early part of

the time the nights were occasionally sharp and frosty. A good deal of rain was experienced in the extreme north and west, but in the east the falls were slight and less frequent.

"The temperature was above the mean very generally, the excess ranging from 2° in the north and east, to 3° in most of the western districts, and to 4° over southern and central England, and in the south of Ireland. The highest of the maxima were recorded on the 15th in most parts of England and Ireland, and on the 17th in Scotland; they ranged from 56° in 'Ireland, S.,' and 55° in 'Scotland, E. and W.,' 'England, S.,' and the 'Channel Islands,' to 53° in some of the English districts, and in 'Scotland, N.' The lowest of the minima were registered either on the 11th or 14th, when they varied from 24° in 'England, N.W. and S.W.,' to 31° in 'Scotland, N.,' and to 35° in the 'Channel Islands.'

"The rainfall exceeded the mean in 'Scotland, N.,' and just equalled it in 'Ireland, N.,' in all other districts there was a deficit.

"The bright sunshine was less prevalent than during the preceding week. In Ireland and Scotland the amount recorded was less than the normal for the time of year, but in most of the English districts there was a slight excess. The percentage of the possible duration ranged from 26 in 'England, N.E.,' and 23 in 'England, S.W.,' to 9 in 'Ireland, N.,' and to 4 in 'Scotland, N.'"

NOTICES TO CORRESPONDENTS.

BLACK SOAP, &c.: *R. F.* Soft soap. Paraffin is distilled from bituminous shale; petroleum is a natural oil. The latter only is meant.

BOOKS: *Cretica, Domestic Floriculture*, by Burbidge. Published by Blackwood & Sons, London.

BREAD FRUIT: *Bread-fruit*. *Artocarpus incisa*, a native of Papua and the South Sea Islands, and cultivated in the West Indies; *A. integrifolia*, a native of the Indian Archipelago, is the so-called Jack-fruit. The Bread-fruit tree of North Australia is *Gardenia edulis*. Native Bread of Australia is *Mylitta australis*. We never heard of the name Bread-fruit being applied to the Banana, as you suggest.

CEDAR AND RHODODENDRON TRIMMINGS AND WATER LILY: *R. M.* The second named are sometimes injurious to live stock if eaten in a withered state and in large quantities, but the others are not likely to be so.

FUNGUS ON FERNS: *E. J. L.* The fungus on the Ferns is apparently *Milella polypodii*, White, found first in Scotland, but not before known by me in England. The filaments are those of a moss, long drawn out, resembling those of *Fontinalis antipyretica*. *M. C. C.*

FUNGUS FOUND AT A DEPTH OF FOUR FEET: *G. P.* Evidently a *Polyporus*, but it is impossible to say which species. It was probably on some old tree roots.

INSECTS: *Destructive Caterpillars*. The long and rather slender white caterpillar found in dark damp red sawdust is evidently that of one of the swift moths (*Hepialus* sp.), easily found and as easily killed by treading upon. *I. O. W.—J. Adams*. The larvae of two species of the Daddy Longlegs or Crane-fly (*Tipula*). The eggs must have been laid in the soil before it was cut from the field, or in the rough herbage that may have been left to grow on it whilst lying in a heap. It will be advisable another time to obtain soil from another source—one on which sheep have been fed in the autumn, and therefore with close herbage, affording no harbour for the fly (*Crane-fly*), and where the tramping of the animals would prevent eggs being laid or hatched. To drive them from the pots, try lime decanted in a clear state before use, and collect all that may be found crawling about the greenhouse.

KOWHAI: *D. P.* The native name for the New Zealand tree, known as *Sophora tetraptera*. It is very ornamental, but only half-hardy. For figure and description, see *Gardeners' Chronicle*, June 8, 1878.

MARGUERITES DYING OFF: *R. G. in B. H.* The work probably of weevil grubs or wireworm. Send specimens of the depredators for inspection, packing them in damp mould or Cocoa-nut fibre refuse.

MARKREK CASTLE: *G. W. D'Arcy*. Under consideration.

MANURES FOR VINE BORDERS: *A. P.* In making new Vine borders, in size 30 feet by 10 feet by 2½ feet, 3 cwt. kainit and 5 cwt. basic slag should be incorporated with the soil. For top-dressing an old border of the same size, mix 14 lb. of kainit with 19 lb. of basic slag, and apply at the rate of 1 lb. per square yard. Mineral phosphates are ground coprolites, apatites, or basic slag, and mineral super-phosphates are ground coprolites, or apatites, &c., rendered more soluble by being acted upon by sulphuric acid. The former are used along with large quantities of organic matter, the latter when these are scarce. *J. R.*

NAMES OF FRUITS: *J. G.* 1, Brabant Bellefleur; 2, Hormead Pearmain; 3, Wyken Pippin; 4, King of the Pippins; 5, Ecklinville Seedling; 6, not known; 7, Hanwell Souring.—*Wm. Fry*. Apple Kentish Gaff.—*E. Pratten*. 1 and 4, Blenheim Orange; 2, Golden Reinette; 3, Scarlet Russet; 5, Schoolmaster; 6, not recognised.—*W. R. G.* The tuber is a variety of *Solanum tuberosum*, known as Vitelotte, a common continental variety. Fruits next week.

NAMES OF PLANTS: *A. P.* *Bulbophyllum hirtum*; notice the dimorphic flowers.—*J. J. W.* *Cyclamen coum*. *Crocus* not known, malformed Primrose; all were withered, almost beyond recognition.—*H. J. R.* *Dendrobium bigibbum*.—*W. G. S.* Broad-leaved specimen *Acacia longifolia*, probably; the other unrecognised.—*E. J. W.* We cannot undertake to name varieties of *Chrysanthemums* from blooms sent up. Yes, there is an incurved variety known by the name you mention.

PORTUGAL LAUREL HEDGE: *X.* It is probable that the plants, whose leaves change colour before the plants die, are affected with the silver-leaf disease, the cause of which is unknown. The same mysterious disease attacks the Plum. Destroy by burning all affected plants, and impart vigour to the hedge plants by mulching the soil along both sides with decayed manure, and affording liquid manure in a weak condition occasionally during the growing season. The constant annual cutting of the shoots is usually resented by the Laurel, and it is rarely that a hedge of these plants can be kept in good health for many years.

ROMAN HYACINTH: *T. R.* The flowers are good, as is also the stock.

SPORT IN LABURNUM: *D. P.* Doubtless, the well-known *Cytisus Adami*, which excites so much astonishment every year. It is interesting to know that it has been produced in New Zealand.

THE QUEEN OF FLOWERS: *X.* This is generally applied to the Rose, but our forefathers sometimes applied it to the Tulip, for we find one Docteur Jean Posthius, as cited by Monardes, writing, *La Tulipe Roynne des Fleurs, Venu des Coulaux Getiques, Surpasse en Divers Couleurs, Les Champestres et Domestiques*.

THE TEIL TREE: *D.* In Isaiah vi, 13, you will find it thus written, "as a Teil tree, and as an Oak, whose substance is in them, when they cast their leaves: so the holy seed shall be the substance thereof." What "teil" means, indeed what the whole passage meant, we do not know. In Barker's Bible (1615), the version is "and shall be eaten up as an Elme, or as an Oke, which have a substance in them when they cast their leaves." The passage in the Revised version is doubtless more correct. It runs "shall be eaten up as a terebinth and as an Oak, whose stock remaineth when they are felled so the holy seed is the stock thereof."

VICTORIA REGIA NOT FLOWERING: *A Constant Reader*. The water was probably kept warm enough, although 75° would have been better. What was the temperature of the house? It should have been from 10° to 15° at the commencement of the season, and from 20° to 25° higher than that of the water in June and July.

COMMUNICATIONS RECEIVED.—*E. S.*, Palo Alto, California.—*E. J. L.*—*H. K.*, Laeken.—*W. T. D.*—*A. H. B.*—*A. P. B.*—*H. Correvon*, Geneva.—*T. C.*—*R. O.*—*G. C. C.*—*C. B. C.*—*W. H. D. H.*, Quito.—*G. H.*, California (we will forward any communications, and help, so far as we can).—*E. Webb & Sons*.—*E. C.*—*G. Hansen* (letter forwarded to person indicated).—*H. E.*—*H. P.*, New Orleans.—*W. G. C.*—*W. B.*—*J. D.*—*H. W. W.*—*J. B.*—*E. T.*—*C. T. D.*—*A. P.*—*E. M.*—*J. R. J.*

FRUITS RECEIVED.—*J. J. D.*

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DE MAR, J. A., Boston, U.S.A.
DEVANSAYE, A. de la Angiers.
DRUDE, Prof., Dresden.
DUCHARTRE, Prof., Paris.
ENGLER, Prof., Berlin.
ERNST, Dr., Caracas.
FENZI, Cav. E., Florence.
FORSTER, O., Scheibbs, Upper Austria.
GLAZIOU, Dr., Rio Janeiro.
GOEZE, Dr., Griefswald.
HANBURY, T., Esq., Mentone.
HANSEN, G., California College of Agriculture.
HENRIQUEZ, Prof., Coimbra.
JOLY, C., Paris.
KANITZ, Prof., Klausenburg.
KERCHOVE, Comte de, Gand.
KOLB, Max, Munich.
KRELAGE, E. H., Haarlem.
LANGE, Prof., Copenhagen.
LEHMANN, H., Pöpyan.
LEMMON, J. G., Oakland, California.
MEEHAN, T., Philadelphia.
MICHELI, M., Geneva.
MONTEIRO, Chev., Lisbon.
NAUDIN, C., Antibes.
NELSON, C. J., Orange Free State.
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ORTIGIES, E., Zurich.
OUDEMANS, Prof., Amsterdam.
PIROTTA, Prof., Rome.
PYNAERT, E., Ghent.
REGEL, E., Director Imperial Botanic Garden, St. Petersburg.
RODIGAS, E., Ghent.
ROVELLI, Sig., Pallanza.
SOLMS, Prof., Count, Strasburg.
SURINGAR, Prof., Leyden.
TRETEASE, Prof., St. Louis.
TROUBETZKOI, Prince (Eucalyptus).
VILMORIN, H. de, Paris.
WILKOMM, Prof., Prague.
WITTMACK, Dr., Berlin.
WOLKENSTEIN, F., St. Petersburg.

FORESTRY:—

BRACE, C. J., Orleans.
FRANCE, C. S., Aberdeen.
MAYR, Dr., Munich.
MICHIE, C. Y., Cullen, Aberdeen.
SCHLICH, Dr. Superintendent, Forest Department, Coopers Hill.
WEBSTER, A. D., Bromley.
WEBSTER, J. B., Gordon Castle.

FRUIT CULTURE:—

BARRON, A. F., Chiswick.
BLACKMORE, R. D., Teddington.
BUNYARD, G., Maidstone, Kent.
CHEAL, J., Crawley, Sussex.
MARKHAM, H., Mereworth.
RIVERS, T. F., Sawbridgeworth.
WILDSMITH, W., the late.

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BAKER, J. G., F.R.S., Kew.
BALFOUR, Prof., Edinburgh.
BARBEY, W., Lausanne.
BROWN, N. E., Herbarium, Kew.
BURIDGE, F. W., Botanic Gardens.
CLARKE, Col. Trevor. [Dublin].
CLARKE, C. B., F.R.S.
CORNU, Prof. Max, Director of the Jardin des Plantes, Paris.
DE CANDOLLE, A., Geneva.
DYER, W. T., Director, Royal Gardens, Kew.
ELWES, H. J., Cirencester.
FRANCHET, M., Paris.
HEMSLEY, W. B., F.R.S., Kew.
HOOKER, Sir J. D., K.C.S.I., late Director, Royal Gardens, Kew.
JACKSON, J. R., Museum, Royal Gardens, Kew (Economic Botany).
LEICHTLIN, Max, Baden-Baden.

GARDEN BOTANY:—

LINDSAY, R., Royal Botanic Gardens, Maw. G., Broseley. [Edinburgh].
MAXIMOWICZ, Dr., the late, St. Petersburg.
MOORE, F., Royal Gardens, Glasnevin.
MORRIS, D., Assistant Director, Kew.
NAUDIN, C., Antibes.
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STRICKLAND, Sir C., Bart., Helmsley.
TODARO, Baron, Palermo.
WATSON, Sereno, Boston, U.S.A.

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MCLEACHLAN, R., F.R.S., Pres. Ent.
MICHAEL, A. E., F.R.S. [Soc].
WESTWOOD, Prof., F.R.S., Oxford.
WILSON, G. F., F.R.S., Weybridge.

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CLARK, W. A., York.
CREWE, Rev. H. Harpur, the late.
DOD, Rev. C. W., Malpas.
ELLACOMBE, Rev. Canon.
ELWES, H. J., Cirencester.
EWBANK, Rev. H., Ryde.
FOSTER, Prof., Cambridge.
HARTLAND, Baylor, Cork.
POTTER, W., York.
WILSON, G. F., F.R.S., Weybridge.

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BANCROFT, G., M.D., Queensland.
BENNETT, G., M.D., Sydney.
BOLUS, H., Capetown.
BROADWAY, W. E., Royal Botanical Gardens, Trinidad.
DUTHIE, J. F., Saharunpore.
FAWCETT, W., Superintendent Botanical Department, Jamaica.
FORD, C., Hong Kong.
HART, J. H., Superintendent, Botanical Department, Trinidad.
IM THURN, Everard, British Guiana.
JENMAN, J. S., British Guiana.
KING, Dr., Director, Royal Botanic Gardens, Calcutta.
KIRK, J., Wellington, N.Z.
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MACOWAN, Prof., Cape Town.
MACOUN, Prof., Ottawa.
MUELLER, Baron Sir Ferd. von.
MURTON, H. J., Siam. [Melbourne].
RIDLEY, H. N., Superintendent Botanical Department, Singapore.
SAUNDERS, Prof., Ottawa.
SCHOMBURGK, Dr., Adelaide.
SMITH, T., Timaru, New Zealand.
TRIMEN, H., Director Royal Gardens, Ceylon.
WOOD, Medley, Botanic Garden, Durban. And many others.

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BACKHOUSE, J., York.
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CATT, A. G., Worcester.
COOKSON, N., Wylam-on-Tyne.
KRANZLIN, Dr., Berlin.
LAWRENCE, Sir Trevor, Bart., M.P., President, Royal Horticultural Soc.
LEE, W.
LINDEN, Lucien, Brussels.
LOTHIAN, the Marquis of.
O'BRIEN, James.
PFITZER, Prof., Heidelberg.
REICHENBACH, Prof., the late.
ROLEF, R. A., Kew.
ROSS, Comm., Florence.
SANDER, F., St. Albans.
SMEE, A. H., Wallington.
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CULVERWELL, W., Thorpe Perrow.
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DEWAR, D., Royal Gardens, Kew.
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DUNN, M., Dalkeith.
EARLEY, W., Ilford.
FINDLAY, B., Manchester.
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GANT, Berwick, Salop.
GRIEVE, P., Bury St. Edmunds.
HARROW, W., Sheffield Botanical Gardens.
HEMSLEY, A. (Market Plants).
HERRIN, C., Dromore.
HUDSON, J., Gunnersbury.
INGRAM, W., Belvoir Gardens.
LYNCH, R. J., Botanic Gardens, Cambridge.
MELVILLE, D., Dunrobin Gardens.
MILES, G. T., Wycombe Abbey Gardens. (Fruit).
MILLER, W., Coombe Abbey. (Fruit).
MILNER, R., Penrice Castle.
MOORE, F. W., Royal Botanic Garden, Glasnevin.
POWELL, D. C., Powderham Castle.
ROBERTS, J., late of Gunnersbury.
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SHEPPARD, J., Wolverston Gardens.
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SMYTHE, W., Basing Park.
TEMPLE, M., Carron House, N.B.
THOMAS, O., Frogmore.
THOMSON, W., Clovenfords (Vines).
WALLIS, J., Keele Gardens.
WARD, E., Hewell Grange, Bromsgrove.
WARD, H. W., Longford Castle Gardens.
WATSON, W., Royal Gardens, Kew.
WEBSTER, J., Gordon Castle Gardens.
WILDSMITH, the late W.
WILSON, D.
WYTHES, G., Sion House Gardens. And many others.

ROSES:—

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D'OMBRAIN, Rev. H. H. Westwell, Kent.
FISH, D. T., late of Hardwicke, Bury St. Edmunds.
FISHER, Rev. O.
GIRDLESTON, T. W., Sunningdale.
MAWLEY, E., Berkhamsted.
PAUL, G., Cheshunt.
PAUL, W., Waltham Cross.
VIVIAN-MOREL, Lyons.

VEGETABLE PHYSIOLOGY, &c.:—

BENNETT, A. W.
BONAVIA, Dr. E.
BOULGER, Prof.
DARWIN, the late Charles.
DE VRIES, Hugo.
FOSTER, Prof. Michael, Cambridge.
GARDNER, W., Cambridge.
GLAISHER, James (Meteorology).
GOEBEL, Prof., Munich.
GOODALE, Dr., Boston, U.S.A.
GRAVIS, Prof., Liège.
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Mr. J. GIBSON FIELDEN, late Foreman in the Gardens, Dalton Hall, Hull, as Head Gardener to S. HUBBARD, Esq., Ilkley Wells House, Ilkley, Yorkshire.

Mr. G. H. BECKETT, who for the last 2 years filled the situation of general Foreman at Kimmel Gardens, as Gardener at Kimmel Park, Abergale, North Wales, in succession to the late Mr. D. D. HERGES.

Mr. GEORGE FRANCIS, for the past 10 years Head Gardener to Mrs. BUCKWORTH, and latterly to R. BUCKWORTH, Esq., at Cockley Cley Hall, Swaffham, Norfolk, as Head Gardener to T. GUY PAGET, Esq., Humberstone Hall, Leicester.

Mr. SAMUEL MARSHALL, formerly Gardener to the late THOMAS G. STARK, of Rose Bank House, Ramsbottom, Lancashire, is now Gardener to Mr. STARK's son, JOHN STARK, Esq., Croston Towers, Alderley Edge, Cheshire.

Mr. HERBERT R. RICHARDS, until recently Foreman in the glasshouse department, at Longford Castle Gardens, Salisbury, as Head Gardener to Major TRAFFORD BAWNS, Roche Court, West Dean, Salisbury.

Mr. R. T. HUMPHREYS, as Head Gardener to C. FABER, Esq., The Bowery House, Wareham.

Mr. WALTER GOLDSMITH, formerly Gardener to T. MASHITER, Esq., The Manor House, Little Bookham, Leatherhead, as Gardener to JOHN COOPER, Esq., Tandridge Court, Redhill, Surrey.

CATALOGUES RECEIVED.

HERB & WULFE, Seed Merchants, Naples, Italy—Trade List of Seeds.

W. E. BOYCE, F.N.C.S., Chrysanthemum Grower, Archway Road, Highgate, London.—Descriptive List of Chrysanthemums.

VALENTIN WAAS, Geisenheim-on-the-Rhine—Fruit Drying Apparatus.

JAS. CARTER & Co., 237 and 238, High Holborn, London—Seeds and Tubers for 1893.

CAMPBELL & Co., Glasgow—Musical Instruments.

W. J. GODFREY, The Nurseries, Exmouth, Devon—Figure and Price List of Chrysanthemum Beauty of Exmouth.

JARDIN ALPIN D'ACCLIMATATION DE GENÈVE—Seeds collected in the Garden.

JAS. VEITCH & SONS, Chelsea—Seeds and Horticultural Implements.

SUTTON & SONS, Reading—Amateurs' Guide in Horticulture for 1893.

E. WEBB & SONS, Wordsley, Stourbridge—Seeds and General Catalogue.

DICKSON & ROBINSON, 12, Old Millgate, Manchester—Seeds.

B. S. WILLIAMS & Co. (Limited), 90, Southwark Street, London, S.E.—Wholesale Seeds.

J. R. PEARSON & SONS, Chilwell, near Nottingham—Chrysanthemums.

DICKSONS, Chester—Seeds, Tubers, Tools, and Sundries.

MCDONALD BROS., 10, Mark Lane, Manchester, York, Glasgow—Horticultural Preparations, Insecticides, &c.

H. DEVERILL, Banbury—Seeds.

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Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

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GARDENER (HEAD).—W. B. FISHER, Gardener to the EARL CAWDORE, Stackpole Court, Pembroke, will be pleased to recommend Charles Davies to any Lady or Gentleman who is in want of a first-class man.

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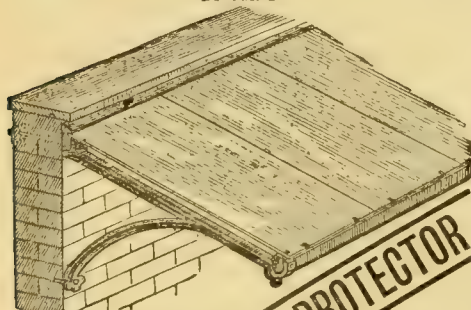
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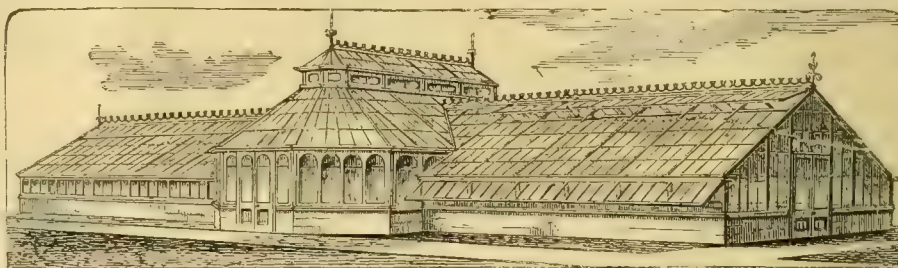
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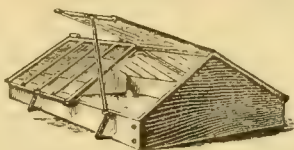


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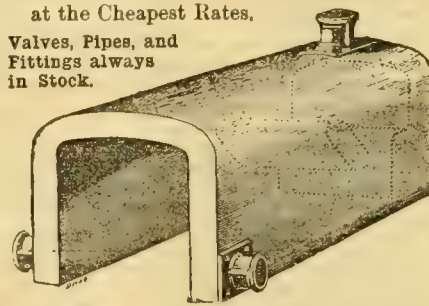
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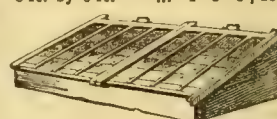
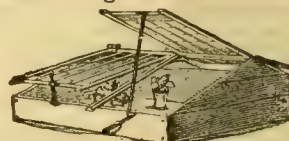
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ESTABLISHED 1841. No. 2714.

No. 314.—VOL. XII. {THIRD SERIES}

SATURDAY, DECEMBER 31, 1892.

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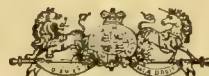
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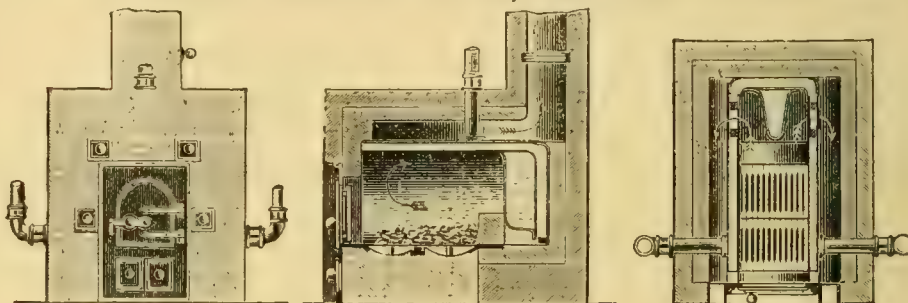
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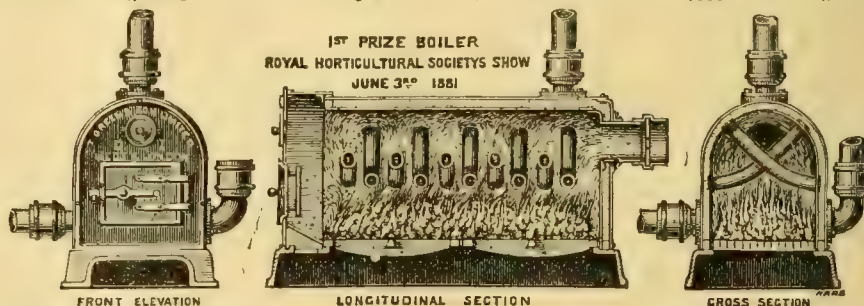
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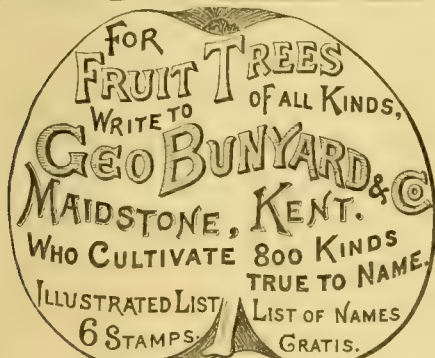
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 31, 1892.

DALMENY.

THE original spelling of Dalmeny was Dumanie, Gaelic for "black heath," since the changes that can be wrought by cultivation often entirely change the character of a district, it is quite possible that some of the higher grounds in the park might have justified the name. The house was built on a new site at the beginning of this century by the fourth Earl of Rosebery. The reason for this comparatively recent erection is that the old family castle, Barnbogle, is only a short distance off on the seashore. It is round Barnbogle that the history of the place centres. The first proprietors were the Norman family De Moubray. After being many generations in this family, it passed by marriage to the proprietor of the adjoining estate, Barnton. In 1662 the estate was bought by Sir Archibald Primrose, Justice General of Scotland. Sir Archibald had an adventurous life. He was taken prisoner at the battle of Philiphaugh, and, as he was well known as a staunch royalist, was only saved by the intervention of the Marquis of Argyle. Charles II. made him a baronet as "a special mark of royal favour to so faithful a servant." His great enemy was Lauderdale, and after the trial of Mitchell for the attempted murder of Archbishop Sharp, Burnet writes that "Primrose did most inhumanly triumph in this matter, and said it was the greatest glory of his life that the four greatest enemies he had should come and consign the damnation of their souls in his hand." He was twice married. His son by the first wife was the first Viscount Primrose, which title became extinct in 1741. There was only one son by the second wife, who at the revolution went up to London and pushed his way so well at Court, that he was made second Viscount and then Earl of Rosebery, the date of the latter creation being 1703. The present earl has already shed a lustre on the name. The Queen has twice been a guest at Dalmeny, and no doubt many affairs of state have been discussed in the library, when Mr. Gladstone and Mr. John Morley visited Edinburgh. The library is Lord Rosebery's sanctum; in it is Boehm's statue of Carlyle, and the ocean comes right up to its sea-wall, to remind him of the colonies he takes such deep interest in. The old castle itself was blown down in 1820, and was for a long time a ruin. It has been rebuilt in the old style, and is now one of the best examples of the old Scotch baronial architecture in the country, experts praising the massive stone corbels and the "crow-stepped" gables.

In two respects, Dalmeny can hardly be surpassed, i.e., the park, and the walk from

Cramond Brig to St. Margaret's Well along the shore. The distinguishing feature of the park is the irregularity of the surface. It would be difficult, if not impossible, to find any stretch of level ground in the 2000 acres which are enclosed. One or two of the elevations are 500 feet high; no two of the summits are alike. Eagle's Crag presents a sheer face of rock; the Kill, near the kitchen garden, looks like a ridge from one point of view, and like a broad-base half-cone from the old road to Barnbogle Castle; the mansion hill is rounded at the top; and Glenpuntie is a gentle upland. Moushill also disdains to look like the others; and a high ridge of black trees seems to reach to the Pentland's billowy crests. The declivities are equally variable as the ascents; the grandest are the wide, shallow valleys of woodland. Most of the hills are planted, and a wide strip of wood goes all round the park inside the wall. The under-cover is wonderfully luxuriant; the Rhododendrons form large clumps, and grow quite tall; and the Privet in places covers many acres. In the wood by the side of the drive from the Edinburgh road, it is like a green carpet, completely obscuring the ground. To reach this result, Mr. Allan, the forester, plants the Privet very thick, and when it gets about 2 feet high, has it switched every year with a hook. Snowberry, and the crimson Dogwood are also much in evidence; and where the station road runs along the park, Ivy covers the ground for a long distance. Young plantations will in time add an additional attraction; the most extensive is a plantation of the hardiest and quickest-growing Pines, such as the Corsican, Weymouth, Scotch and Black Austrian, called the Chapel Coppice. Where the drive winds round it, choice Conifers have been planted. Last, but not least, the park is thickly timbered, and contains many ancient trees, and an avenue of old Oaks, many of which girth 17 feet.

"The Oaks for shade, the hills for breathing space,
The trembling groves."

A good place to start our inspection is where the drive passes above the kitchen garden. Scotch kitchen gardens are usually placed, if possible, in beautiful surroundings. Dalmeny is no exception. High trees with frequent Scotch Firs crown the hill at the back; to the left are high trees, and at the foot of the slope are a belt of Spruce and other Conifers. A little further on is a shelving lawn of Conifers about 20 feet high, evidently enjoying life, if their bright green colour is any criterion, through which a path lined with thick Cupressus Lawsoniana on one side, and Thuia gigantea on the other, descends to the kitchen garden, passing on the way a bank of Rhododendrons and an oval pond. A pretty approach was the verdict soon given. The garden has the advantage of a southerly slope, and also of two different sub-soils, clay and sand. The walls are 20 feet high, so that the fruit trees are allowed to run full length. One long border, 40 feet wide, contained only James Veitch Strawberry.

In front of the vineries was a well-filled herbaceous border, Carnations forming the front line, and Rose borders lined the centre walk. Cordon Plums and Apples, which are not grown in Scotland to any extent as yet, were placed on an eastern aspect. The soil evidently suits Celery, the sticks being very thick and tall. Col. Clarke's Red and Dicksons' Matchless White are the sorts grown. The Michaelmas Daisies were still in flower, and a long border of hardy Auriculas will be very bright in the spring. The

border under the north wall is planted with young ornamental shrubs, such as Retinosporas, Biotas, and the different varieties of Cupressus Lawsoniana. A north wall outside the garden is devoted to Currants; three branches from each tree are trained up cordon fashion. From this wall Currants have been gathered in November. Globe Artichokes also are largely grown. The walk round the outside of the kitchen garden is very interesting, as it is used as a nursery, from which the estate is supplied. On the west side



FIG. 128. — MAMMOTH TEN-WEEK STOCK.
(SEE P. 791.)

is a dense Holly-hedge, under which are young Firs and Pines. A line of specimen Conifers, with a thick belt of Rhododendrons behind, takes the place of the Holly-hedge on the south side. Here are seedling, yearling, two to three year old Larch, Scotch and English Oak. On the east side there is a break of Spruce and Dogwood.

The kitchen garden is some little distance from the precincts, the path thither leads through a hollow between two sloping lawns. Conifers, Golden and Silver Queen Hollies, and frequent masses of Rhododendrons contrast with the nut-brown park upon which the shaggy soft-eyed high-

land cattle graze and look up in mild enquiry. At the head is a triangle of Privet and Laurel, which causes a forking of the paths, the left leading to the north side and the right to the west. Taking the latter, further progress is soon barred by a wall. Entering by a gate, the first thing that caught the eye were some splendid specimen Golden Queen Hollies, growing on a small lawn. They were five in number, grazing the ground, all over 30 feet high; the largest was 24 feet in circuit of branches. The gold tints predominated so much over the green, that they looked like cones of gold. A fine Silver Queen, and an Irish Yew spreading out its branches, also attracted attention. Query—why are not Irish Yews growing in this way top-heavy? A double line of young Golden Retinosporas and Cupressus Lawsoniana erecta viridis was planted all round in front of the border of shrubs that kept out of sight the wall. When any of them get too tall, they are planted elsewhere, and replaced by others. No two more different Conifers, probably, either in habit or colour, could be put in juxtaposition. A wide stretch of park comes right up to the house on the south side, but on the east only a very narrow strip intervenes between it and the "much-resounding" sea. The sea came in sight so suddenly round the corner of the house, that the inclination was strong to cry, *Θαλασσα, Θαλασσα*, like Xenophon's Greek soldiers. The coast as seen from the terrace is flat, with Cramond Island, a conspicuous object, to the right. There is nothing notable on the north side, except the nearness of Barnbogle Castle, and a road to it, which we will take.

The flat coast comes to an end at the castle, and on the other side suddenly rises into a high wooded ridge skirting the line of the coast for two miles. Mr. Gladstone and Mr. John Morley both expressed the opinion that they never saw such heavy timber near the sea before. By walking along this ridge, a succession of views of great variety and extent can be obtained. Due east the restless motley sea disappears in a faint delicate line of distant haze. The time has now come to take the lovely walk along the coast mentioned at the beginning of this paper. The changes of scene are so constant, that I can only hope to give a few of the incidents. At the start, high trees come down almost to the edge of the sea wall. Where the old drive from Barnbogle formerly descended, the ridge is not so high, and the slope is gentler; therefore the wood retreats to a greater distance, and appears to form a woodland valley. The effect was very picturesque and grand. Proceeding, Eagle's Crag overtops the ridge, but is lost to view when the path enters a Beech grove. From a group of Scotch Firs, bare of branches on the sea side, the "dim-discovered" towers of Donibristle could be seen over a cloud-darkened sea. Here the handsomest man of his time—"the bonny Earl of Moray" of the song—was murdered by Gordon of Cluny, as he was trying to escape. His good looks were the cause of his death. For James VI., jealous of the "braw gallant," who was "a queen's love," sent the Earl of Huntly to Donibristle, with orders to bring him to Edinburgh for trial on a trumped-up charge. Now there was a deadly feud between the two Earls, and a chance shot having killed one of the Gordons, Huntly ordered the castle to be set fire to. His wife happened to be at Castle Doune, another property of the handsome Earl—

"Oh! lang will his lady
Look ower the Castle Doune,
'Ere she see the Earl of Moray
Come sounding through the town."

The seventh or eighth Earl is said to have planted

13,000,000 trees on his three estates. For about a quarter of a mile from this position is an undergrowth of Rhododendrons, ending in a high brown ridge of withered bracken; in spring, I was told with a smile, Primroses took the place of the Ferns. Going through a miniature wood of Larch, Scotch and Silver Fir, we come to Hound Point, where there are also some spray-damaged Firs. The whole estuary of the Forth is open to view from this headland; I scarcely glanced at it, however, for the Forth Bridge could be seen from start to finish. St. Margaret's Well is a little further on. We did not, however, go there, but made a way for ourselves up a woody glade by the side of a rivulet. Enormous Lastreas were growing by its side; one frond I cut at random, and measured, was 42 inches—its weight made it form an ellipse, and gave it a great resemblance to a Tree Fern frond. This ferny path brought us to the park again. No description would be complete without an account of the walk across the centre of the park. Castle Craig, a Fir-clad eminence, and the Garden Hill, so steep that the path to the top needs to be serpentine, are first passed before coming to the lake, situated in low ground, with hills all round, Rhododendrons being planted here and on the island. The lake, however, is not the end of our walk. Three important features of the estate have to be encountered ere that is accomplished, namely, the mansion hill, the home farm, and Glenpuntie. The summit of the hill affords a good view of the mansion and of the east side of the park, one side of which is bounded by the blue glimmer of the sea. The trees here seem to run in lines, consequently more of the old pasture land is seen. At Glenpuntie, a new nursery was being formed. The grass land was being ploughed up; the long, straight, unerring furrows showed that the Scotch farm labourer is as skilled in the art of ploughing as his English *confrère*. Some very good "stuff" ought to be grown here, as the situation is exposed, and it is virgin soil. The approach from the Edinburgh Road passes close by; on one side is a wood, on the other cultivated fields. The Lothian farmers pay £5 to £6, or even more, for their land, and yet manage to pay their way with a surplus over. About a mile along the Edinburgh Road is the Cramond Brig Hotel, where I waited for the Forth Bridge four-in-hand, watching the while the flooded Almond in its desperate hurry to squeeze through the bridge. *Vagabond*.

NEW OR NOTEWORTHY PLANTS.

COSTUS ENGLERIANUS (SYN. UNIFOLIUS).

SINCE my description of this plant appeared in print, I have discovered that it is the same as *Costus Englerianus*, Schumann (*Engler, Bot. Jahrb.*, vol. xv, p. 419, t. 13), which was published in August of this year, and therefore takes precedence of my name by four months.

But the plant is still a new one, so far as horticulture or even science is concerned, only the name *C. unifolius* must give place to that of *C. Englerianus*. *N. E. Brown*.

SUCCULENTS.

SOME day the weathercock of fashion, at least, among hobby-riders, will point to Succulents. When we consider their relatively easy culture, their quaintness and varied interest, and in some cases, the surpassing beauty of their flowers, it seems strange that they should be so neglected, especially by those whose means and space are limited. The two plants we figure in our present issue are Echino-

cactus *myriostigma* and *Mamillaria fissurata*, for the photographs of which we are indebted to Mr. J. Skelton, gr. to Jas. Lingford, Esq., Mount Pleasant, Bishop Auckland.

Echinocactus myriostigma is remarkable for its deeply-lobed stem, thickly studded with white dots (whence the name), but destitute or nearly so of



FIG. 129.—ECHINOCACTUS MYRIOSTIGMA, REDUCED ONE-HALF: FLOWERS, STRAW-COLOURED.

spines. The white dots or "stigmata" are with a magnifying-glass seen to be masses of felted white hairs. The flowers measure about 1½ inches across, are straw-coloured, the individual petals being tipped with black. It is a native of Mexico, and requires a warm greenhouse to flower it, though it will grow in any structure from which frost can be excluded.



FIG. 130.—MAMILLARIA FISSURATA: FLOWERS, ROSE-COLOURED.

Mamillaria fissurata is unlike most of its congeners, the stem being divided into numerous closely-set triangular rugged lobes, and bearing, at the top, flowers 1½ inch wide and rose coloured. Mr. Skelton tells us the flowers remain in bloom for about ten days. It is a native of Mexico, and rare in cultivation. Exposure to full light, good drainage, water in

the growing season (summer) and almost complete drought for the rest of the year, together with cleanliness, are the essential points in Cactus culture.

RHODODENDRONS.*

(Concluded from p. 732.)

GHEENT AZALEAS.

The history of the hardy Azalea in English gardens dates back to 1738, when Peter Collinson, the friend of Linnæus, introduced *A. nudiflora*, *A. viscosa*, and *A. calendulacea* from North America. The source of yellow in these was *A. pontica*, introduced in 1793. According to Loudon, Messrs. Lee & Kennedy were the first to produce hybrids in this country. Then followed the Osbornes of Fulham, and the Waterers. Loddiges enumerated one hundred and seven kinds in his catalogue, nearly seventy years ago. They were chiefly the result of intercrossing the American species with *A. pontica*. A baker in Ghent, named Mortier, also raised many hybrids and seedlings from these. His work was taken up vigorously by the Ghent nurserymen, including Van Casel and Verschaffelt. Their plants soon became prime favourites in England, where they received the name of Ghent Azaleas. Van Houtte first succeeded in raising double-flowered kinds. These plants are now grown in enormous quantities in Ghent, for the supply of the English and other markets. They are raised from seeds, the one-year old seedlings being used as stocks for choice kinds which are grafted as Camellias are. They make saleable plants in two years after raising. A race of late-flowering varieties has been raised by Mr. A. Waterer, by breeding from *A. occidentalis*, which flowers a month or so later than the ordinary kinds.

A. sinensis (mollis) is also very largely grown in Belgium. Van Houtte did much to improve it in the substance and colour of its flowers. It is of special value for forcing, besides being a first-rate flowering shrub for the open air. Mr. A. Waterer has some very fine varieties with flowers deep red in colour. This species and its forms have a great value for out-door gardening, which has not yet been recognised. They are quite hardy, and flower very freely outside.

Rhododendrons cultivated under glass at Kew.

<i>æruginosum</i> = <i>R. campanulatum</i>	*fulgens, Himalaya
<i>album</i> = <i>R. arboreum</i>	Gibsoni = <i>R. formosum</i>
* <i>anthopogon</i> , Himalaya	* <i>glaucom</i> , Sikkim
* <i>arboreum</i> , India and Ceylon	grande, Himalaya
<i>argenteum</i> = <i>R. grande</i>	var. <i>roseum</i>
<i>Aucklandi</i> = <i>R. Griffithianum</i>	Griffithianum, Himalaya
<i>barbatum</i> , Himalaya	Hodgsoni, Himalaya
<i>blandfordiiflorum</i> = <i>R. cinnabarinum</i>	Hookeri, Bhotan
<i>balsaminiflorum</i> varieties	hybridum, Yunnan
<i>calophyllum</i> = <i>R. Maddenii</i> , var.	indicum (Azalea), China
<i>camelliiflorum</i> , Himalaya	var. <i>indica</i>
<i>calyciflorum</i> = <i>R. (Azalea) indicum</i> , var.	* <i>jasminiflorum</i> , Java, &c.
* <i>campanulatum</i> , Himalaya	<i>javanicum</i> , Java, &c.
<i>Campbellii</i> = <i>R. arboreum</i>	<i>Jenkinsii</i> = <i>R. Maddenii</i>
* <i>campylocarpum</i> , Himalaya	* <i>kewenses</i> (Aucklandi × Hookeri)
<i>Championii</i> , Hong Kong	<i>lacteum</i> , Yunnan
* <i>ciliatum</i> , Himalaya	<i>lanatum</i> , Himalaya
* <i>cinnabarinum</i> , Himalaya	* <i>lepidotum</i> , Himalaya
<i>cinnamomeum</i> = <i>R. arboreum</i>	<i>linearifolium</i> , Japan
* <i>Colletianum</i> , Afghanistan	<i>longifolium</i> = <i>R. grande</i>
<i>Dalhousiae</i> , Himalaya	<i>Maddenii</i> , Himalaya
var. <i>formosum</i> , garden hybrid	<i>multiflorum</i> (<i>R. virgatum</i> × <i>R. ciliatum</i>)
<i>Daviesi</i> (<i>R. retusum</i> × <i>R. javanicum</i>)	<i>nilagiricum</i> , S. India and Ceylon
* <i>decorum</i> , Yunnan	<i>niveum</i> , Himalaya
<i>Delavayi</i> , Yunnan	<i>Nuttalli</i> , Bhotan
<i>Edgeworthii</i> , Himalaya	<i>obtusum</i> = <i>R. (Azalea) indica</i> var.
<i>elegantissimum</i> (<i>Rhod. × Azalea</i> , hardy)	<i>pendulum</i> , Himalaya
<i>exoniensis</i>	<i>racemosum</i> , Yunnan
<i>Falconeri</i> , Himalaya	<i>Roylei</i> = <i>R. cinnabarinum</i>
<i>floribundum</i> (<i>R. virgatum</i> × <i>R. Prince C. de Rohan</i>)	<i>scabrifolium</i> , Yunnan
<i>formosum</i> , Himalaya	<i>Sesterianum</i> (hybrid)
* <i>Fortunei</i> , China	<i>Taylori</i> (hybrid)
<i>fragrantissimum</i> = ? Countess of Haddington	* <i>Thomsoni</i> , Himalaya
	<i>triflorum</i> , Himalaya
	* <i>virgatum</i> , Himalaya
	<i>Veitchianum</i> , Moulmein
	<i>Wightii</i> , Himalaya
	<i>Williamsii</i> (hybrid)
	<i>Windsori</i> = <i>R. arboreum</i>

* The asterisk denotes those species which are also grown in the open air at Kew, and are not protected in winter.

* A paper read before the Kew Gardeners' Society, by W. Watson, Assistant Curator.

Rhododendrons cultivated in the open air at Kew.

albiflorum, North America	hirsutum, European Alps
(Azalea) arborescens, North America	maximum, North America
Metternichii	
azaleoides (R. ponticum × ? R. flavum)	molle = R. sinense
brachycarpum	myrtifolium (Schott)
(Azalea) calendulaceum, North America	myrtifolium, Lodd. (R. hirsutum × ? punctatum)
californicum, North America	(Azalea) nudiflorum, North America
campanulatum, Himalayas	(Azalea) occidentale, North America
catawbiense, North America	odoratum = R. azaleoides
caucasicum, Caucasus	parvifolium, China and N. Asia
Colletianum, Afghanistan	(Azalea) ponticum = R. flavum
daphnoides (hybrid ?)	punctatum, Asia Minor
dauricum, Alps of N. E. Asia	(Azalea) rhombicum
var. mucronulatum	Smirnowii
decorum, Yunnan	Ungerni
ferrugineum, European Alps	(Azalea) Vaseyi
flavum, Asia Minor	(Azalea) viscosum, Torr., North America.
hallense (supposed natural hybrid)	
hirsutiforme (supposed natural hybrid)	

ARTIFICIAL MANURES FOR FRUIT CULTURE.

THE subject of fruit-growing for profit is one that has during the last few years been attracting increasing attention, partly owing to the hope that it may prove a means of bettering the condition of the cultivator of land, and partly to the growing demand for fruit as an article of food. Evidence of the growing importance of fruit farming is supplied by the activity which may be observed in the manufacture of chemical manures. It appears that to-day the balance of opinion is against the total replacement of natural by artificial manure, but many high authorities agree that a large proportion may be so substituted with advantage to the crop, and with economy to the cultivator. We are interested in observing that chemists of good standing are recognising the fact that, with profit to themselves and advantage to horticultural industry, they may devote serious attention to the chemical aspect of cultivation. It is significant that Mr. H. Brunner, the President of the Liverpool section of the Society of Chemical Industry, chose for his chairman's address the other evening the subject of artificial manures for fruit culture. And we congratulate the society on an occasion like this, that they can turn aside from the discussion of matters which, perhaps, are only interesting to the scientist strictly so-called, to the consideration of a subject which is really of national importance.

Mr. Brunner, in the course of his long address, referred to his own experiments made on the cultivation of Strawberries. He stated that, by employing chemical manures, far less potash, phosphoric acid, and nitrogen is required per acre than is the case with ordinary farmyard or stable manures, as, owing to their soluble form, they penetrate the soil more rapidly and deeply.

With regard to the requirements of 1 acre of land planted with Apple trees, it was stated that 20 tons of farmyard manure would be necessary once in three years, whilst the necessary ingredients contained therein would be supplied by the yearly use of 500 lb. of kainit (containing 13½ per cent. of potash), 120 lb. of superphosphate (containing 16 per cent. of soluble phosphoric oxide), and 360 lb. of nitrate of soda, or a total for the three years of 26 cwt. of material. From these data it is evident that in certainty of effect, in convenience of handling, and in distribution over the soil, chemical manures possess distinct advantages.

It must not be supposed, however, that Mr. Brunner is entirely biased towards manuring by strictly chemical means and methods; he does not recommend the complete discarding of farmyard manure, but rather the adoption of some system of rotation of manures, such as that advocated by Wagner of Darmstadt for the cultivation of Vines, in which farmyard manure is supplied in the first year, and supplemented by chemical manure only in the second, third, and fourth years.

It has been urged against chemical manures that

they render the soil poorer in organic matter, whilst farmyard manure has the reverse effect, but it has been shown by Joulie (*Mercure Scientifique, Supplément du Moniteur Scientifique*, June, 1892), that the more abundant harvests produced by the use of chemical manures have a larger proportion of residues in roots and otherwise in the soil, and consequently that there is no impoverishment, but an increase in the quantity of organic matter.

By the use of chemical manures each ingredient can be adjusted to the requirements of the crops, which is obviously not the case with natural manures; whilst Ville has shown (*Ville on Artificial Manures*, translated by W. Crookes, p. 105) that more than one-third of the nitrogen contained in the latter is lost to the soil on account of the decomposition which the manure must first undergo before it can exercise any beneficial action. The cost of carriage and of distribution on the land is also favourable to the employment of chemical manures.

Superphosphate is the most suitable form of phosphoric acid for the fruit-grower, and it further has the important advantage of supplying a considerable quantity of a soluble lime-salt necessary for the building-up of healthy trees. Finely-ground basic-slag is also likely to prove of great value, since it contains 18 per cent. of phosphoric acid combined with lime in a fairly soluble form. The latter should be applied in larger proportionate quantity than the former, and will be found especially useful in preparing the ground before planting young fruit trees. Kainit affords the cheapest form of easily-soluble potash, but it only contains about 13 per cent. of potash, and as much as 40½ per cent. of sodium chloride (common salt). Nitrate of soda is the best and most economical nitrogen manure for fruit cultivation; sulphate of ammonia is less suitable. G.

SCOTLAND.

ABERDEEN HORTICULTURAL SOCIETY.

THE monthly meeting of the North of Scotland Horticultural and Arboricultural Society was held on the 21st inst., in the Christian Institute—Mr. C. S. France presiding. Mr. Tough, Nigg, read a paper on the "Formation of Soils," describing at length the chemical, mechanical, and atmospheric agencies that were at work making the soil capable of nourishing plants, and concluded with a demonstration of the important work done by the common earthworm. Mr. G. Ross, Cranford, opened a discussion on the "Theory and practice of Root-pruning."

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. A. BURBERRY, Orchid Grower, Highbury, Birmingham.

DURING severe weather, such as we are now having, firing becomes a most important operation, and must command careful attention, for the general health of the plants in such weather depends largely on the manner in which it is done. Artificial heat should never be present in excess of what is really required, and, on the other hand, sufficient means should be available that will suffice to keep the house at the required temperature, and sufficient moisture and air should be ensured to keep the atmosphere nicely balanced, and of a growing nature. The more perfectly this is managed, the more successful will be the results.

THE COOL-HOUSE.—It sometimes happens that the surface of the compost in which *Odontoglossums* are growing becomes sour, and displeasing to the eye. If in this state it is difficult when watering to satisfy oneself whether the plants require water or the reverse, and to examine each plant closely would occupy too much time; therefore, much good work can be done by procuring some fresh sphagnum moss and fibrous peat (the former for this work may be used alone), with which the whole of the plants may be top-dressed. It must be done carefully, because by this time many new roots will be on or near the surface of the compost, and the new material

should not be pressed down with sufficient force to break or otherwise injure these new roots. After top-dressing it is best to gently water with a rose-can, after which there will be no difficulty in ascertaining at sight whether water is or is not needed. By going through the plants in this manner, a splendid opportunity presents itself to thoroughly clean them, and to dip them in an insecticide to more effectually destroy thrips and aphides. Many varieties of this genus, such as *O. odoratum*, *O. gloriosum*, *O. Andersonianum*, *O. Coradinei*, *O. triumphans*, and *O. blandum* are now pushing up flower-spikes, which may be allowed to remain if the pseudobulb is sufficiently strong to carry a good spike of flowers without much exhaustion, but if not, the spike should be pinched off. The next few months will then give a good chance for the plant to recover its vigour, without which good spikes of bloom cannot be obtained. The temperature for this house may fall during severe weather as low as 45°, but it is best if generally kept from 50° to 55°, on no occasion letting the atmosphere become dry or in any way unsuitable to the free growth of the plants. In a former calendar I advised a covering for the houses during severe weather, this may now be advantageously applied.

DRIP.—This is sometimes a great nuisance, especially in badly-constructed houses; it happens when ice forms on the glass inside the house during the night, and as the temperature rises the ice thaws, and the water drips on to the plants underneath, often-times wetting them if unobserved to saturation point.

THE FLOWER GARDEN.

By H. W. WARD, Gardener, Longford Castle, Salisbury.

NEXT YEAR'S PLANTING OF THE FLOWER BEDS, ETC.—In order that the plants with which the beds will be filled be propagated in sufficient numbers, a list should now be prepared, if not previously done, of all the various things needed, to which ought to be added the height, colours of leaf and flower, for easy reference at planting time. The list of plants that will be required for sub-tropical and carpet beds should not be omitted. Go over the *Pelargoniums* grown for bedding-out, and forthwith cut off all of the best cuttings to be found for propagating purposes. In order to economise space, put them in at about 2 inches apart in wooden boxes made 30 inches long, 9 inches wide, and 4 inches deep, and provided with seven or eight ¾-inch holes in the bottom. The boxes should be filled with light soil overlying crocks and siftings, and having a surfacing of sand. After watering them with a fine rose-can, place close together in a forcing-house. Cuttings of *Ageratum*, *Heliotropes*, and *Lobelia* may be struck in a similar manner.

FUCHSIAS.—Some few old plants of *Fuchsias* may now be put into heat to furnish cuttings, first trimming the plants into shape, pricking up the crust of soil, and affording water at the roots. If these plants are lightly syringed with tepid water, they will soon push into growth, and as soon as the shoots have two joints, they may be made into cuttings and put into boxes or pans in the manner recommended for *Pelargoniums*.

REMOVING MOSS FROM TREES.—Mossy trees are disliked by some persons, but it is not hurtful when not in excess, although it indicates moist land and atmosphere, and sometimes the need for draining. It can be scraped off with a bit of lath or hoop-iron from the stem and limbs, but the smaller branches should be dusted over whilst damp with a mixture of fresh soot and powdered lime.

STAKING TREES.—All young trees which are likely to grow out of the perpendicular should be securely fastened to a stout stake driven 18 inches into the ground, on the side where it will be least observed. Trees in exposed places will require three stakes put in about 1 foot from the stem, and equidistant, the tree being secured with neat straw-bands to each. Heavy-headed trees sometimes require to be guyed with stout wire as well as staked, to overcome the danger of wind-rocking. Sweeping lawn and walks, and rolling the latter after rain will be nearly all the operations that need attention for the present.

PLANTS UNDER GLASS.

By R. MILNER, Gardener, Penrice Castle, Swansea.

THE WATERING OF STOVE PLANTS.—It is at this season of the year that the watering of the different subjects occupying these structures requires

most care, and also in placing them in the different positions which are found most suitable for them. The *Croton*, for instance, should not be allowed to suffer for want of water at the roots, especially when the pots are well filled with roots, as should they suffer in this respect to any great extent, they are liable to cast their foliage. Palms also should not be allowed to suffer from dryness, or injury will be done, which will not be detected until some time afterwards; and it will also be the means of encouraging different kinds of insect pests. So long as the drainage is in a satisfactory condition, there is little danger of these plants suffering from an over-supply, especially when the roots are somewhat pot-bound. *Dracenas* should be kept moderately moist, and must never be allowed to become over-dry. Strict attention should be paid to keeping the leaves perfectly free from all insect pests by frequently sponging. The *Marantas* are moisture-loving subjects, and should always be watered freely, even at this season, or they will quickly feel the effects; and, like the *Dracenas*, their leaves also should be sponged frequently, as thrips are very partial to these plants. *Anthuriums* will require to be watered with care, as during the present time they will be at rest, which necessitates their being kept rather dry, or the roots are liable to decay; and these same remarks will also apply to the *Alocasias*, *Allamandas*, and similar subjects, which are deciduous, and will require but little water during the time they are dormant. Advantage should be taken to have this class of plants thoroughly cleansed, as this work may be done more effectually at this season than when they are in full growth. Young stock of *Aralias*, *Dracenas*, *Pandanus*, *Crotons*, *Asparagus plumosus nanus*, *Palms*, *Isolepis gracilis*, *Tradescantias*, *Fittonias*, &c., which have been grown-on specially for providing material for furnishing, should be kept in as healthy a condition as possible.

FRUITS UNDER GLASS.

By J. RIDDELL, Gardener, Castle Howard, York.

TOMATOS which have been grown either from cuttings or seed, propagated or sown at the beginning of last September, may now be repotted or planted out. Where there are facilities for adopting the latter method, I strongly recommend the necessary means being taken to put it into practice. Not only are the best results obtained from plants which have a fairly wide range of rooting space, but when the soil in which their roots are allowed to ramble is maintained at a temperature of 70° by means of a hot bed, the health of the plants and the yield of fruit is in proportion to the extra labour bestowed upon them in this direction. The compost for either pots or borders should not be too rich in organic matter, and for this reason farmyard manure or bulky vegetable substances are best entirely left out, and only used for surfacing on the apparent exhaustion of the soil. Wood-ash, kainit, super-phosphate mixed with bone-flour, and lime, in a mild form, may, however, be incorporated with the loam. Later in the season, sulphate of ammonia can be sparingly applied, if a nitrogenous manure be required to stimulate growth of leaf. Make the compost moderately firm about the roots, and moisten the soil with water 10° higher in temperature than the atmosphere of the house. A minimum temperature of 60° should be maintained, and the air of the house kept dry and moving; employ artificial means to secure fertilisation; stop all side-growth close to the stem, and admit air on all favourable occasions. A few seeds may now be sown to supply plants for later use.

MELONS AND CUCUMBERS.—Seeds of these may be sown under a hand-light or bell-glass, in a temperature of 80°. Three seeds in a 3-inch pot (of each of the earliest varieties) will be found the most convenient way of raising a stock of plants at this season, pulling out the weakest when it is seen which are the most promising.

STRAWBERRIES.—Get hot-beds ready for Strawberry forcing and other purposes, and once they are in place take in the first batch and plunge them to the rims of their pots. A selection of the best ripened crowns should be made for the earlier lots, allowing those less matured to stand over till the last. Afford a bottom-heat of from 70° to 80°, and a night temperature of 50° for 10 days, then raise by degrees to 60°; water according to the needs of the plants, occasionally sprinkling the surface of the bed with water through the syringe, but do not maintain a humid atmosphere, or the prospects of a good crop will be spoiled.

POT VINES.—Gradually raise the temperature at the rate of about 2° a week after these have nicely started, and cease syringing the canes. The moisture in the structure, after this stage is reached, will have to be regulated by the weather, but at no time during the first months of the year should an excessive moist air be maintained.

FIGS.—Pot plants may now be taken into heat, giving them 45° to 50° (minimum temperature) to start. Plunge the pots in a bottom-heat of 65° to 70°, if the means are at command for doing so, and well bedew the plants three times daily. Do not be too liberal in the supply of water to the roots until the leaves are developed on the plants. Avoid extremes of temperature, and cold currents of air playing upon the plants during the earlier stages of the fruits' development, lest they receive a check which would ultimately lead to failure.

THE KITCHEN GARDEN.

By G. WYTHES, Gardener, Syon House, Brentford.

FORCING.—There will be no lack of materials for forcing if my directions have been duly carried out. With regard to fermenting materials, which are now of great use, leaves should be heaped on a bit of spare ground away from the kitchen garden, where the necessary turning over and mixing with stable litter may be carried out without creating a nuisance, and here the stable litter may be mixed together, watered if dry, and thus be got ready for use, either in conjunction with leaves or alone. The present is a good time to prepare beds for crops which come in quickly, and for which a long-enduring heat is not essential. For these the bed may consist wholly of tree leaves, or leaves and dung, and it need not be made more than 2 feet deep.

RADISHES may be raised readily on a bed of warm leaves, and although the seed is often sown with other crops, they are not always profitable in that way, coming up quickly, and requiring freer ventilation than ought to be afforded the other slower-growing plants. Separate sowings are usually the more useful. The small-topped Early Rose and the French Breakfast Radishes are good for early sowings. It is important that the bed and soil should be nicely warm before the seed is sown, and by making up beds at this date they will be in proper condition a fortnight hence.

CARROTS may be treated like Radishes, but a greater depth of fermenting material should be employed, as the bed will be required to last much longer, therefore, use leaves liberally. After sowing the seed, keep the lights close, merely affording air to let out the excess of moisture arising from fermentation. Sow very thinly in rows on the surface on a bed of good loam at least 8 inches thick and make the latter level and firm before sowing. The varieties Early Nantes and French Forcing are very useful for the earliest sowings.

TURNIPS require to be similarly treated to Carrots, with the exception that more air is required by the plants as soon as they are furnished with three or four leaves. The soil should be near the glass, to prevent drawing of the leaf-stalks. The Extra Early Milan is a very early variety, that soon attains a usable size.

POTATOS.—Preparations may now be made for forcing these tubers in frames. More soil is necessary for a Potato-bed than for Carrots, &c., but all the soil is not wanted at one time, but it should be added at one or two operations, when the stems require to be moulded-up. For this latter purpose the soil from a disused Melon or Cucumber-bed may advantageously be used. A Potato-hotbed may be of litter and tree-leaves thoroughly incorporated together, afterwards well trodden, and the soil which is put on the beds should be quite warm before the sets are planted, otherwise a check to growth will ensue. The sets may be prepared by planting them in boxes or pots with a little light compost under and over them, they will then come up with a lot of roots, which readily seize on the new soil on being planted.

FRENCH BEANS may be sown in pots for fruiting or planting out, if for the former 6, 7, or 8-inch pots should be employed, the smaller size often giving a good return early in the season. For later supplies of Beans, larger pots are better. When planted out on a hot bed, small pots are best for

sowing in, and are to be preferred to boxes, because of the less disturbance of the roots. Water must be sparingly applied to the soil when planted out, indeed a moist soil will scarcely require any before the Beans are well up, and care should also be taken to use a warmed soil, and to place the pots when sown close to the glass in a house having a night warmth of 60° to 62°. Sow six seeds in a pot, but leave only four plants after it can be seen which are the best. *Sion House* and *Ne Plus Ultra* are good varieties for forcing early in the winter; and *Canadian Wonder* (Red Flageolet) later. Make use of a good rich loam that is not of too heavy a nature, and to this add spent Mushroom-bed dung. Afford the pots in which the plants are to fruit plenty of drainage, and only half-fill them when planted or sown. Keep regular supplies of *Seakale* and *Asparagus* by putting in batches of roots at intervals of a fortnight.

MUSHROOMS.—Every month at least a new bed should be made. Be careful to avoid a higher air temperature than 58° or 90° in the beds, and excessive moisture in the Mushroom-house. Beds which are past their best may be induced to push up a further supply of Mushrooms by watering them with tepid water in which salt at the rate of a tablespoonful to 3 gallons of water is dissolved.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gardener, Mereworth Castle, Maidstone.

THE APRICOT.—The trees may now be pruned, when not in a frozen state, dressed with an insecticide, and put in order. Their training is usually that known as the fan, a style in which the branches radiate from the upper part of a stem about 18 inches high. As much young wood must be laid in as can conveniently be done without crowding, many vacant spots being caused by the dying out of shoots and branches. Shoots of medium-size, if well-ripened, should not be shortened further than to cut off the green tips. Superfluous laterals may be cut back to two or three buds; also the forerights to one or two buds. When trees have become covered with long snags owing to neglected pruning, some of these should be cut away annually till all have been removed, when the trees will bristle anew with strong fruit-buds close to the old wood; and such buds being sheltered by the leaves, are not so liable to be injured by frost as those on long spurs. Aged trees should have top-dressing afforded them annually, first carefully removing some of the upper soil, so as not to injure the roots. As a dressing, use good loam and old mortar and wood-ashes, mixed intimately together, trampling it firmly, and before the soil is put on, a dressing of bone-meal strewn over this will greatly assist the trees; finally, mulch with stable-dung or other manure, if the borders are well-drained or much raised above the general level, or the soil light; but if it be cold and heavy, mulching may be left till the spring. Young trees early planted may likewise be pruned and nailed, but the soil over and about the roots should first be thoroughly trodden, whereas late-planted trees will be best left till the spring. If the young wood is not very strong, and there are from five to seven shoots on a tree, no pruning will be required, excepting perhaps removal of weak laterals. Be particularly careful not to injure the bark with nails, and to pull the shoots into position with broad shreds or ties.

YOUNG STANDARD APPLE TREES.—These trees should be carefully pruned at first, and until the main branches have been properly selected and fixed in place. These main branches should number from three to five, and be trained outwards as they lengthen. As other branches are put forth, these must be similarly treated until the framework of the crown is formed. These main shoots must be shortened to about 20 inches, cutting to an outwards inclining bud. Apples, Plums, Damsons, &c., should be treated alike in this period of formation. In pruning Apples, mark the peculiarity of those which fruit at the tips of the shoots, as does that excellent Apple the Cornish Gilliflower. Grafts may now be obtained and laid-in in the shade.

FIGS.—Severe frost, where trees were not protected, may have killed many of the young fruits; and in any case, in view of a continued low temperature, the trees should be afforded protection, which may be in the form of straw mats, straight-pulled straw, Rush mats, or a thickish covering of Spruce Fir branches, and the ground over the roots should receive a thick covering of dry litter.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	JAN. 2	Plants and Dutch Bulbs at Protheroe & Morris' Rooms.
WEDNESDAY,	JAN. 4	Lilium auratum and other Lilies at Protheroe & Morris' Rooms. Roses and Shrubs at Stevens' Rooms.
THURSDAY,	JAN. 5	Plants and Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	JAN. 6	Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	JAN. 7	Plants, Bulbs, including Lilies, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—35°·5.

Past, Present,
and Future.

WE are accustomed to speak loosely of the past, as if it had merely historical importance for us, and to regard the future as something too problematic to divert our attention from the duties and exigencies of the present. No one knows better than the gardener how unphilosophical this superficial way of dealing with things is. No one realises more fully than he that his success or his failure in the present and in the future are inextricably interwoven with what has gone before. Past, present, and future are only relative expressions, and convenient terms for use; but he must be something more than mortal who could say where the influence of the one ends and that of the other begins.

Looking back to the events of the past year, and to those immediately preceding, we fancy we see the germs which will in the future develop into an altered and improved condition both of gardeners and gardening. The demand for technical education which has almost suddenly sprung up, the more sympathetic feeling that has arisen among many practical men for what they erroneously call "theory;" the realisation of the fact that if substantial progress is to be made, and not mere routine repetition persisted in, and if we are to be found equal to new and varied conditions as they arise, we must take care that our foundations are laid according to scientific principles:—these indications are of the best augury for progressive horticulture. And among the gardeners themselves we see traces of a desire not only to better themselves by all legitimate means, but to promote at the same time the interests of their common profession. A higher ideal is gradually evolving, and the winning a prize at a flower show, however legitimate it may be, will cease to be regarded as the only or the chief satisfaction of the ambitious gardener. Schemes of co-operation and conjoint action on the part of the gardeners are "in the air," as the phrase goes. Much depends, everything depends, on the form that these take. Some people dread the development of what they call "Trades-unions," but is it not because they have

in mind unions which are wrong in their first principles, and so fore-doomed to failure—unfortunately, perhaps, not before they have wrought much mischief? Is it not because some trades-unions set purely selfish aims in the fore-front? These, too, have to learn by bitter experience that it is idle to kick against the pricks of natural laws, and that the temporary advantage of a few is no compensation for the misery of the many. But a co-operation which shall bind gardeners together to work for a common end—the welfare and progress of horticulture—will have an elevating influence on the profession, and advance the interests of the individual in the most legitimate manner. This is too big a subject to discuss when the events of the whole year are supposed to be under review. But we could not avoid alluding to it, because it is among "the signs of the times," and because already the bogey of "trades-unionism" is beginning to be held up *in terrorem*, and this should be encountered at once.

Much of our space has been taken up with the record of the doings of the County Councils in regard to technical education. It is immensely satisfactory to find that so few mistakes have been made, and that such a measure of success has been already attained. Considering how new the whole thing is, and how suddenly it was sprung upon us, the results must be considered satisfactory and the prospects hopeful.

We must take care to keep in mind the essential differences between practical demonstrations to adults such as have hitherto formed the staple of County Council work, and instruction in elementary principles such as we hope to see given to the young gardeners, and such as is already given at Kew and at the Edinburgh Botanic Garden.

We have so lately alluded to these details that we may now pass them with the mere mention. But we cannot help again reminding our readers how extremely limited are our schemes in comparison with the all-embracing comprehensiveness of the work begun at the new Californian University, and which was explained in detail in our columns by Prof. EMORY SMITH.

The examination scheme revived by the Royal Horticultural Society last year worked satisfactorily so far as it went, and it will do good by indicating to lecturers and pupils the subjects to which their attention ought to be directed. No one supposes that a good gardener is to be made by listening to a lecture, reading a book, or passing an examination. Practical experience is of course essential, but that experience can be more quickly and thoroughly obtained by the aid of the means we have mentioned, and when obtained can be turned to better account and becomes infinitely more fruitful than any amount of practice by itself. Another result of the education and examination schemes will be that the *esprit de corps* and fellow-feeling among gardeners will be promoted, the idle and the incompetent who now bring discredit upon our ranks will be discouraged and eliminated, and the whole tone of the craft raised. Concurrently with this, the position of the individual worker will be improved, and we shall be spared the anomaly we sometimes meet with now, of a first-class man, one from whom first-class things are expected, receiving a wage which a day-labourer in London would not deem adequate.

Other signs of progress are visible in directly practical matters, such as the proper application of fungicides and insecticides. It has required a great deal of preaching to emphasise the desirability of putting these methods to the test, but at last it has been done and the results are promising.

Before long we may hope to see our market-growers availing themselves of the electric light for forcing purposes. The experiments have been made, and now some of the Transatlantic market-growers have adopted it for commercial purposes on a scale that is like most American things—gigantic. Need we add that it pays! Some of our correspondents were sceptical on the matter, they ridiculed it first of all when SIEMENS showed the possibility of it, but somehow the problem seems solved in America in the most satisfactory manner from the point of view of commercial horticulture. Our blood is much more sluggish than that of our American cousins, but at last we see signs of moving, and the education and co-operative movement must greatly contribute to it.

The weather on the whole has not been unfavourable for gardening work, and if the fruit crops were a disappointment [as usual?], the yield and quality of Potatoes were alike excellent.

Exhibitions and shows we have had galore—they come with wearisome iteration, and are much less fruitful in good results than they should be. Prize-winning is not the only thing to be thought of. The Royal Horticultural Society has fairly maintained its pre-eminence, and whilst its fortnightly shows never lack interest and variety, the great Temple Show was even of greater excellence than usual. The pruned Dendroles shown by Mr. PRINSEPP would have alone sufficed to render that show remarkable, whilst those who were fortunate enough to have seen the rockery arranged by Messrs. BACKHOUSE, will have treasured in their memory a little scene of beauty they may, perhaps, see rivalled in the future, but scarcely excelled. The Earl's Court shows were also excellent, the great fruit show in particular, and the administrative ability, tact, and geniality of the Manager, Mr. H. E. MILNER, displayed under difficult and discouraging circumstances, won universal admiration. Other shows, such as those got up by the National Rose Society and the Chrysanthemum Society, were of the usual high average, and excited, as usual, the greatest interest among the devotees. The great show of the Co-operative Society at the Crystal Palace was also a pleasant proof of the widely-spreading popularity and importance of horticulture.

Horticultural literature has been enriched by publications too numerous to be mentioned in detail in this cursory survey. One or two which are, or will be, landmarks can alone be referred to. Dr. OTTO KUNZE's *Revisio Generum Plantarum* is a book to set botanists by the ears. To us, it seems wildly impractical, and the author's abuse of his English colleagues, even of those who are dead, is rude and uncalled for. It might be thought that this was a matter in which botanists alone were concerned, but horticulturists have as deep an interest in the questions of nomenclature discussed in this book as the botanists themselves. It is not wise to prophesy before you know, but we do not think we shall be far from the mark when we say that Dr. KUNZE's book will have little practical effect among botanists, and still less among horticulturists.

Mr. W. PAUL's *Contributions to Horticultural Literature*, is a book of a very different stamp, and is one which, from its varied contents, the skill with which they are handled, and the justly-earned authority of the writer, will for a long time to come find a place in the most easily-accessible part of the book-shelves. Professor SARGENT's *Silva of North America* has advanced to its fourth volume; this magnificent publication is not one that the average botanist or gardener could afford to place on his shelves, but those interested in trees and their

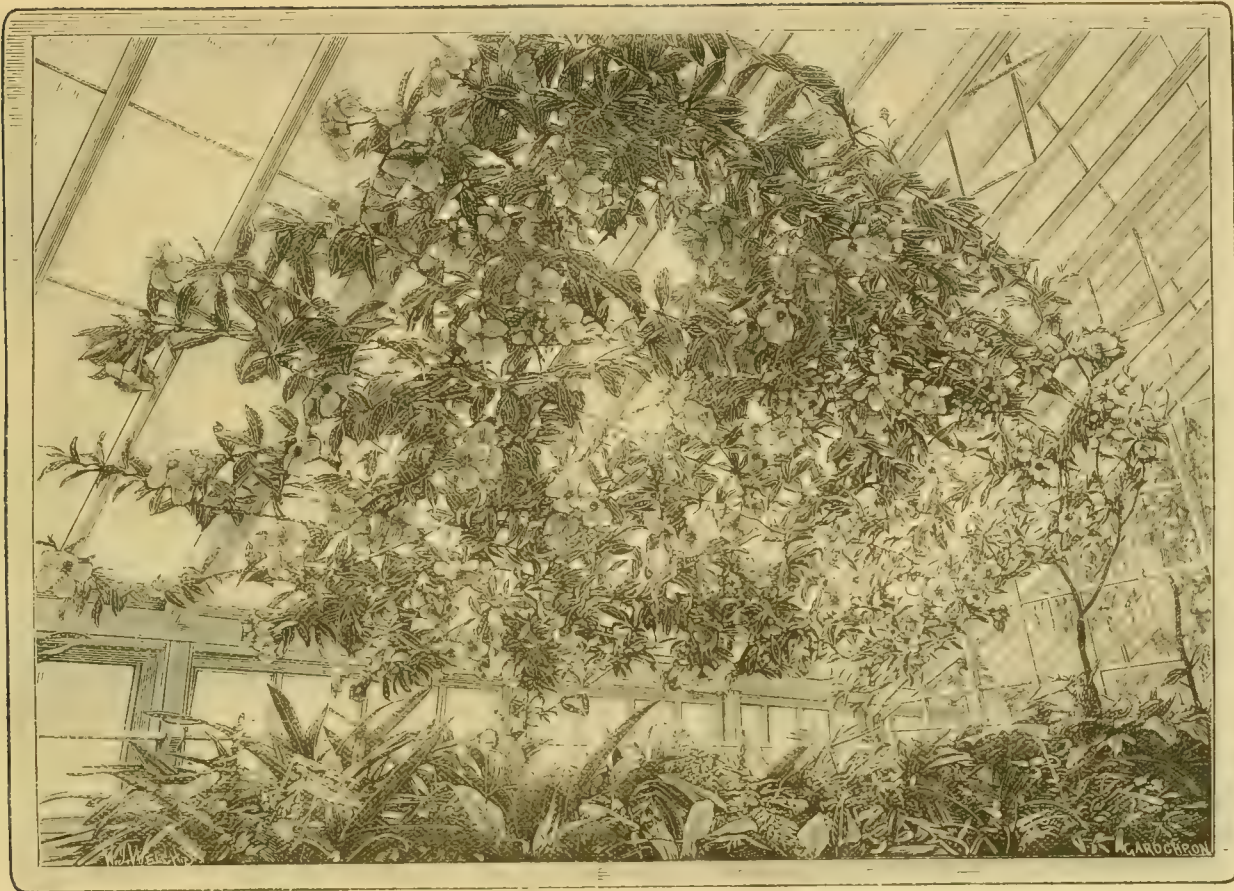


FIG. 131.—ALLAMANDA HENDERSONI, IN THE CONSERVATORY, HOLLOWMEAD LODGE, W. BARROW, ESQ.'S RESIDENCE, BISHOP'S TEIGINTON, DEVON. (SEE P. 791.)

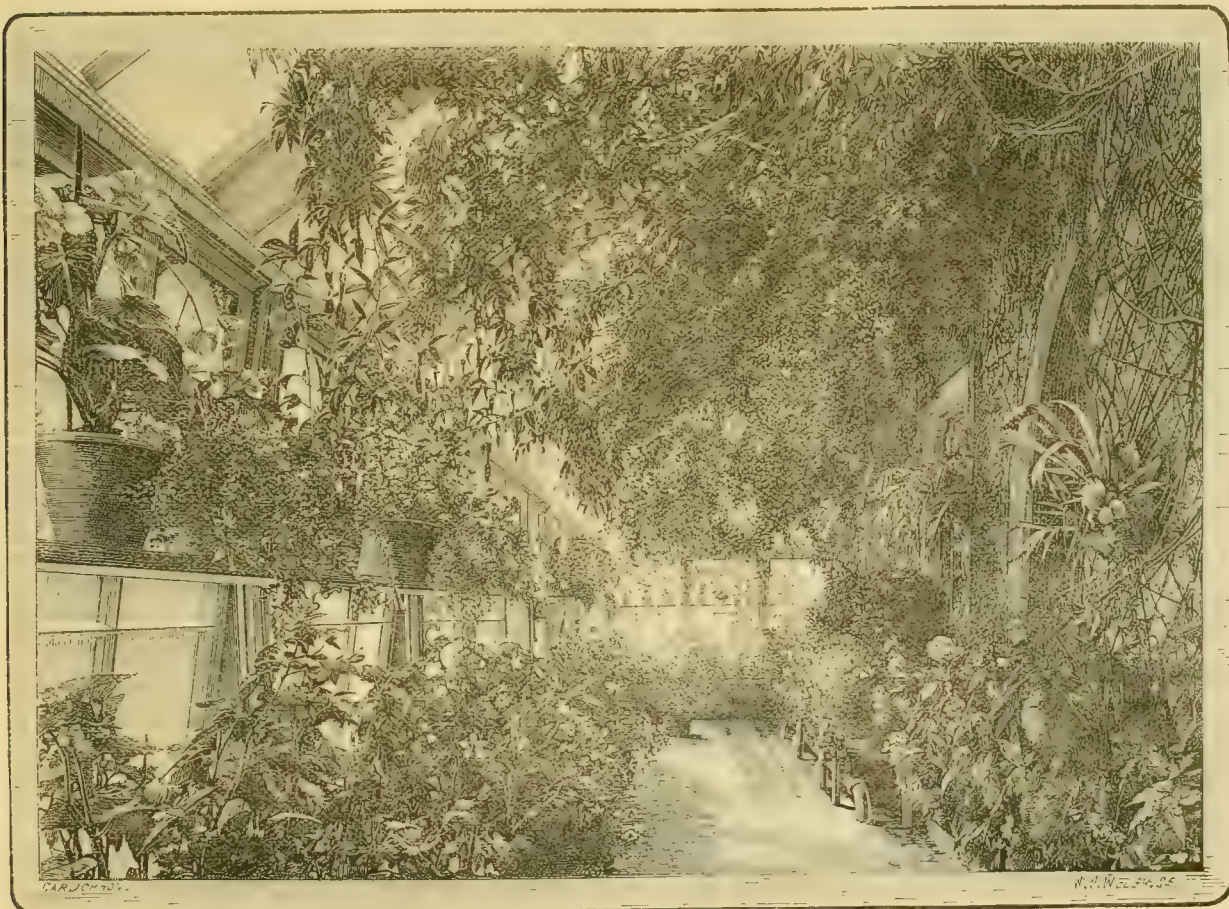


FIG. 132.—VIEW IN THE CONSERVATORY AT HOLLOWMEAD LODGE, BISHOP'S TEIGINTON, DEVON. (SEE P. 794.)

technical delineation and history may be glad to know that the book may be consulted at the Lindley Library, as well as at Kew. Sir JOHN LUBBOCK'S work on *Seedlings* is a publication of authority; and as a work of research and for purposes of reference, it will not be displaced for many a long year. The Conifer Report, published by the Royal Horticultural Society, is another substantial work, evidencing much careful research and patient labour. It forms a worthy companion to the now numerous reports of Conferences, the value of which is more likely to increase than diminish; and a similar remark applies to Mr. BAKER'S modest but sterling work on *Irideæ*.

Our space does not permit us to extend our remarks, but a reference to the index, published in the present number, will show that horticultural writers have been very busy, whilst the few that we have selected for special mention prove that, in point of importance and permanent value, the average is decidedly higher than usual.

Although we have not had to lament the loss of so many friends and conspicuous fellow-workers as in some years, there has been no exemption from the inevitable decree. Among practical gardeners we have lost the venerable JAMES WILLIAMS, whose son, the well-known B. S. WILLIAMS, predeceased his father by some two years or so! Dr. WOODMAN, A. BALFE, E. COOPER, J. ELLAM, J. ROBERTS, JAMES TAPLIN, formerly of Chatsworth, EDMUND COLE, ROBERTS, of Charleville, MICHAEL SAUL, PRATT, ROBERT BULLEN, and JOHN DOWNIE, the last named taken from among us quite recently, but one whose name and fame will remain as treasured memories for more than one generation of his colleagues. The ranks of the nursery trade have been deprived of such conspicuous men as W. A. DICKSON, MARGOTTIN, of Rose fame, ROBERT PARKER, one of the apostles of herbaceous plants, C. H. SHARMAN, ANTON ROOZEN, and LOUIS THIBAUT. Among the botanists, the loss of the gentle and accomplished SERENO WATSON is a severe calamity, more particularly for American botany. REGEL, of St. Petersburg, was well known, by name at least, to horticulturists, and to many personally. The amount of work he did was very great, and its utility, especially in opening up the resources of Central Asia, commensurate. TODARO, of Palermo, was not very widely known in this country; but for all that, he will be missed by his fellow-workers.

Among other workers in science, we have to lament the loss of TENNYSON (for we claim him amongst gardeners and scientists); the much-loved Sir WILLIAM BOWMAN, the still more widely-known Sir RICHARD OWEN, one who makes us proud to be of the same country; W. H. FITCH, whose services to horticulture and botany were innumerable, and the value of which in the future will be in a peculiar sense permanent; STANTON, the entomologist, and too many others.

There were strong men before AGAMEMNON, there are strong men still. We may bow the head in sorrow at our loss, but we are cheered and encouraged by the example that remains to us, so that when another year's record comes to be written, there will assuredly still be worthy deeds done by worthy men to be recorded. May neither fall below the standard of 1892!

Our usual review of the new plants and new introductions will be given in subsequent issues.

ALLAMANDA HENDERSONI (fig. 131).—We give in our illustration a view of the interior of the conservatory at Hollowmead Lodge, Bishop's Teignton,

Teignmouth, Devon, exhibiting a large plant of the above. Allamandas need in our island to have the fullest amount of sunshine to ripen the wood, and develop fine flowers, hence the need for training their shoots within a foot or thereabouts of the roof of the hothouse. When this point in their culture under glass is attended to, it is immaterial where their roots are. It may be a large pot or tub, or a well-drained restricted border; the results in any case are likely to be good. The most suitable position in which to train the plants is the upper part of a lean-to house facing south, or the northern end of a house which is placed north by south; otherwise the dense shade afforded by a thick mass of the foliage would be inimical to most plants placed beneath it. A. Hendersoni is of rather bushy habit, forming short-jointed shoots, and it flowers for the greater part of the year, and often when quite small. The flowers, produced in large corymbs, are of a rich orange colour, with a deeper shade in the throat; previous to opening, they are of a rich maroon colour. It is a native of New Granada. Mr. JOSEPH WILLIS, the gardener at Hollowmead, to whom we are indebted for the photograph from which the engraving was made, says of the floriferousness of this species, that it opened every two or three days from 150 to 250 flowers for five months in succession.

THE CONSERVATORY AT HOLLOWMEAD, BISHOP'S TEIGNTON (fig. 132).—Our second view of Hollowmead shows the interior of a conservatory, differing in its furnishing from the usual trim, not to say formal, disposition of the plants in such conservatories, and the former are those which grow to large size. The subjects, which, owing to their small size, must be brought up near to the eye on tables and stages, seem to be absent, the result being arrangements of a somewhat bold character.

"THE BOTANICAL MAGAZINE" for the year is dedicated to Dr. TRIMEN, the Director of the Royal Botanic Garden, Peradeniya, Ceylon.

THE QUEEN has forwarded to the Secretary of the Royal Agricultural Benevolent Institution, through Sir HENRY PONSONBY, a cheque for 100 gs. This makes Her MAJESTY'S third donation to the society, in addition to her annual subscription of £25.

MISS JAMESON.—A few months ago we had occasion to mention the sad case of this lady, the daughter of the late Professor JAMESON, of Quito, an eminent botanist, and one who did good service in making known and introducing plants from the Andes. The small sum received, £14 18s. 6d., on behalf of the afflicted lady, was paid to the account of the British Minister at Quito, who writes in acknowledgment that the amount received will at least be of some use in relieving the necessities of the lady. Dr. JAMESON, after a life devoted to useful science, died in great poverty, and left his family unprovided for. It is sad, as His Excellency remarks, that so eminent a scientific man should have had such an end.

"ILLUSTRATIONES FLORÆ HISPANIÆ INSULARUMQUE BALEARIUM."—We greatly regret to learn from the publisher (E. KOCH, of E. Schweizerbart'sche, Verlagshandlung, Stuttgart) that this excellent publication is discontinued, and still more so for the reason that the author feels himself unable to continue the work. In the part before us are several illustrations drawn with the usual fidelity, and described in Latin, Spanish, and French. Anthyllis Webbiana should be looked after by collectors for the sake of its heads of brilliantly-coloured crimson flowers. It was figured in the *Botanical Magazine*, t. 3284, but if it exists at all is not known out of botanic gardens. It grows on the higher snow-covered parts of the Sierra Tejada (Granada). It is by some considered as a form of A. vulneraria, but Professor WILLEKÖMM considers it distinct, especially in the stalks of the petals, which are perceptibly longer than the calyx.

GRAPE-GROWING IN CALIFORNIA.—Now that public interest is excited by the recollection of the great anatomist, SIR RICHARD OWEN, the following record of the adventures of one of his grandsons in California may be read with interest:—

Misled by the representations of interested persons, Mr. Owen leased a 30-acre vineyard lying 1 mile outside of Santa Barbara, expecting to realise several thousand dollars from the year's crop. He undertook to cultivate it himself, but, after smashing three ploughs in his endeavour to train a spirited horse to rustic accomplishments, he called in help. Before the summer was over, the pay-roll of his vineyard had mounted to a very pretty sum, but he still looked confidently at the handsome bunches hanging in the shelter of the green foliage, and counted his harvest. At about this time he bethought himself that it would be a good idea to negotiate his crop with some fruit dealer. To his surprise, he found that not a single fruit dealer or grocer of Santa Barbara would agree to take it at any price. A few Italians sometimes bought Grapes for wine, but their offers were so low that to accept them seemed a craven retreat from his high expectations. San Francisco was too far away and freights too high to send his Grapes there.

"The Grapes are there," said he, "and they are exceedingly nice Grapes—except where the mildew struck them. There is just one thing left to do. I shall not stand by and see them spoil on the Vines. I will peddle them from house to house," he said.

Some one mildly suggested to him that he might suffer disagreeable experiences, but he was not to be balked by fate or the storekeepers. He bought an old wagon from a peddler, and as soon as his Grapes had taken on a deep colour he began his new career. Being very anxious to be the first in market, and to sell his fruit while prices were high, he started out before Dame Nature had served the Grapes with their full portion of saccharine matter. That evening he presented himself at a neighbour's house in a state of riotous indignation. He presented his hostess with a basket of Grapes.

"I have had the most extraordinary experience to-day," he announced. "Everybody is accusing me of selling sour Grapes. Now, these Grapes seem sweet and delicious to my English palate. Will you be kind enough to try them, and give me the benefit of your opinion?"

The lady did not make a wry face. "They are very nice," she said.

The keen sense of the young Englishman detected the reserve in her speech.

"I shall have to give up," he said, with a merry laugh. "And I'll own to you, that these are some of my choicest specimens. All that I took out did not come up to these. And you Americans have such an awfully sweet tooth. Still, I would have got along very well if I could only have persuaded my customers to try my samples."

"I picked out my nicest and ripest specimens and put them in a basket, along with a few other bunches that were not so ripe," he continued. "The first house that I visited was that picturesque Swiss Cottage on the hill. It is inhabited by an old maid. How do I know? A feather duster hangs beside the door, as a suggestion to people to brush the dust off their feet before entering. Wherever a feather duster is hung out in Santa Barbara there is an old maid within. It is an infallible sign. This lady was very nice, however, and when I asked her if she wanted to buy some Grapes, she responded with a cordiality that made me rejoice in my calling. 'But it is very early for Grapes. Are they sweet?' she asked. 'Try one,' I rejoined, with confidence. I pointed to a luscious bunch. She reached beyond it for another, and my heart quaked. She made a wry face. 'Try this one,' I insisted, pointing to one of my samples. 'I prefer to try this,' she replied, and to my horror she reached for another that was a little off colour. Then she beat a hasty retreat, saying politely, 'Thank you, but I believe I do not care about any Grapes to-day.' I have repeated this experience all day, in different keys. Fortunately, I started out with but little fruit. Now I shall lay off for a week or two, till the Grapes are riper."

A couple of weeks later Mr. Owen took up his new profession in good earnest. He was snubbed and patronised, haggled with over prices, impatiently turned away, or kindly invited to rest, and his wares were praised as cordially by one customer as they were depreciated by the next. He enjoyed some experiences that he would not have been likely to encounter if he had canvassed the United Kingdom for a lifetime in a similar capacity. Kind-hearted old ladies, noticing his refined manners and his English accent, were perpetually inviting him to take a cup of tea, attentions which he appreciated, but, it is needless to say, courteously declined, for he was disinclined to mix social and business matters. Occasionally he had an amusing encounter. He aimed to avoid the houses of his few acquaintances, but now and then he stumbled upon one, and explanations ensued, or an embarrassing scene occurred, according to the real gentility of the people.

Alan Owen's career as a peddler was of short duration, but he did not forsake it because he was at all daunted by its results. He had been for some time conducting negotiations for an important stock range over the mountains. The bargain was consummated. He sold the remainder of his Grape crop to the Italians, a younger brother and two other young English gentlemen came out from England to join him, and he is now herding his cattle over 75,000 acres of land. He has taken out his first naturalisation papers, and expects in a few more years to become an American citizen.

The remainder of the article from which we quote

is contained in the *San Francisco Examiner* of November 27, and contains a letter never intended for publication, and which it would have been better to have left unpublished.

M. PASTEUR.—The seventieth birthday of this distinguished man of science, who has probably been privileged to confer more wide-spread benefit among the human race than any other man, was celebrated in Paris on Tuesday last. Among the speakers was Sir JOSEPH LISTER, the famous English surgeon, who presented to M. PASTEUR an address from the Royal Society written in the hand of the President of that body, and in handing the paper to him spoke as follows:—"Truly there is not a living man to whom medical science owes more than to yourself, M. PASTEUR. To you is due the complete revolution which has been brought about in surgery. You have cleared it of its errors and enlarged its power of good to an almost limitless degree. Medicine, too, owes no less than surgery to your profound studies in physiology. You have raised the veil which for centuries obscured infectious maladies. By your marvellous system of inoculation against rabies you have succeeded in pursuing the poison after its entry into the system, and in vanquishing it. You can, therefore, understand that medicine and surgery are desirous on this solemn occasion to lay before you the homage of their profound admiration and gratitude." On the opposite shore to Folkestone on the quay at Boulogne is a statue to JENNER, with the simple inscription "La France reconnaissante." A similar tribute on our side to PASTEUR would be in the highest sense appropriate.

HARD FROST.—A correspondent at Hawick writes, under date of December 26, that on Christmas day the Fahrenheit thermometer registered 24° of cold, and the same degree was maintained on the following day. There was no snow on the ground. At the other extremity of the island the frost has been nearly equally severe.

"THE GARDEN ANNUAL," which has evolved into a perennial, is one of those useful books which it is desirable to have upon the office desk or in the gardeners' office.

PRESENTATION.—On the afternoon of Friday, December 23, Mr. P. NEILL FRASER, the Treasurer to the Royal Caledonian Horticultural Society, was presented with a handsome service of plate in recognition of the gratuitous services as treasurer of the society during the long period of twenty years. The presentation took place at the Royal Hotel, Princes Street, Edinburgh, Mr. J. CLAPPERTON presiding over a gathering of leading horticulturists. Allusion was made by the President to the great advances made by the society, whose funds in 1871 amounted to £90, whereas now they were £1200. At that time their receipts, including the drawings at the annual show, amounted to £350, while last year they were £1600. Mr. NEILL FRASER suitably acknowledged the presentation.

THE BENEFICIAL INFLUENCE OF PHOSPHORIC ACID ON PLANTS.—Phosphoric acid is, as is well known, a common constituent of soils and of the artificial manures, but its peculiar influence upon plant life has hitherto not been understood. The green colouring-matter of plants is called chlorophyll. HOPPE-SEYLER in 1879 found that this substance contained phosphoric acid, and suggested that it was a normal constituent. Struck with this view, and following up an observation of his own, Herr C. LOEW has been trying to cultivate *Spirogyra majuscula* in a nutrient solution, containing per thousand, 0.2 of calcium nitrate, and 0.02 of ammonium sulphate. The plants grew very sickly: the chlorophyll layer became very pale and yellowish, whilst its movements were performed sluggishly. In adding 0.02 per 1000 of ferrous sulphate, and dividing the cultures into two lots, to one of which was added 0.08 per 1000 of disodium phosphate, a great difference was observed. After five days, those cultures which received the phosphate became dark green; cell division took place, and the chlorophyll move-

ment became lively. The cultures receiving the iron alone did not show this recovery. LOEW's original paper may be consulted in the *Ann. Agronomiques*, xviii., pp. 270, 271.

CALCIUM OXALATE IN THE BARK OF TREES.

—Some interesting experiments have just been concluded by Herr G. KRAUS, who has been studying the occurrence and distribution of calcium oxalate in the barks of various trees, with a view to determining its function. In a paper given at length in the *Ann. Agronomiques*, xviii., pp. 271, 272, he describes his investigation, and concludes that calcium oxalate is not an excretion, as some have supposed, but a reserve deposit, and that it is redissolved in spring and summer according to the needs of the growing tree. Branches of *Ribes sanguineum* lost, from December 16 to April 27, 16.62 per cent. of their calcium oxalate; from March 13 to April 3, 13.17 per cent.; and to April 16, no less than 38.07 per cent. Similar results were obtained in experiments with other trees. Herr KRAUS remarks that calcium oxalate is certainly liable to solution by the long-continued action of an acid-circulating liquid such as cell-sap is.

COMPOSITION OF APPLE TREE LEAVES.

The leaves of Apple trees, and probably of most trees, undergo during the course of the season very important changes in composition. Leaves collected from five varieties of Apple trees have been examined by Herr F. T. SCHOTT during the season of 1892. Two analyses were made, one on May 25, and the other on September 20. The following table shows the average composition of Apple tree leaves on these dates:—

Constituents:—	May 25.	Sept. 20.
	Per cent.	Per cent.
Water	73.36	60.71
Ash	2.33	3.46
Nitrogen	2.94	2.48
Composition of the Ash:—		
Phosphoric oxide	10.47	5.82
Potash	10.82	11.63
Lime	17.43	27.91
Magnesia	9.77	4.81
Iron oxide	1.49	1.41
Silica	1.07	1.14

Other interesting analytical data are given in the original paper describing this investigation, which may be consulted in *Biedermann's Centralblatt*, 1892, pp. 493, 494.

CRANBROOK GARDENERS' SOCIETY.—The annual general meeting was held at the Bull Hotel on the 19th inst., the chair being taken by Mr. J. STAPLEY. The secretary submitted the annual report and balance-sheet, which were adopted. The latter showed that the receipts during the year amounted to £135 12s. 2d., and the expenditure to £143 17s. 10d., leaving a balance against the Society of £8 5s. 8d. The number of members was as follows:—Honorary members, 52; members, 106; cottagers, 46. The prizes for extraneous points awarded to cottagers during the year were then presented. A Special Certificate was presented to Mr. A. SMITH, gardener to the Misses APPACH, Swatenden, for the splendid group of *Chrysanthemums* exhibited by him at the autumn show. In the professional class the following Certificates were presented:—C. GROWNS, First-class; H. BROWN, Second-class; and A. HICKMOTT, Third-class. Amateurs' class:—J. ROSE, First-class; A. HINKLEY, Second-class; and S. BURNHAM, Third-class.

THE ELECTRICAL HEATING OF FORCING-HOUSES.—We have frequently noticed the application of electricity in the illumination of conservatories, &c., and now M. OLIVET, of Geneva, has devised a special form of heating apparatus for use in forcing-houses, which is supposed to be superior to the ordinary hot-water or steam installations.

The current from a main or special dynamo is conducted into what are termed "receivers," which are made of high-resistance metal. The resistance to the passage of the current results in the evolution of heat; the "receivers" are rapidly heated, but the temperature cannot exceed a given degree. The "receivers" heat the atmosphere, and warm currents of air circulate through the building, bringing the whole to an equable temperature. No unwholesome gas or vapour, that might injure the plants, is produced, whilst amongst other advantages are simplicity of construction, safety from boiler-bursting, the perfect regulation of the heat, convenience and rapidity in starting and extinction, cleanliness, &c.

THE RESPIRATION OF PLANTS WHEN INJURED.

—Some curious experiments have recently been conducted by Herr STICH upon a large number of plants, in order to ascertain the effect of injury (from mere scratches to complete cutting up) on their respiration. He noticed in every case that there was an increased separation of carbonic acid gas when the plants thus had their tissues damaged. As might have been expected, various plants and their various parts behaved differently with regard to the extent and duration of this increased secretion of carbonic acid. Further details may be found in STICH's paper, for which vide *Biedermann's Centralblatt*, vol. xxi., p. 350.

HORTICULTURE, ET CETERA!—It is curious that our French neighbours, who certainly have not the same reputation for prudery that we have, nevertheless hesitate to combine horticulture with such attractions as BUFFALO BILL, the Bounding Bricks of Babylon, Boxing Kangaroos, and the like. One of our French contemporaries, however, holds our plan up as worthy of imitation on the ground that many people who would never visit an ordinary flower-show have the chance of profiting by the teachings of horticulture at these variety entertainments. The object, says our contemporary, of the exhibitor is to show his plants to possible purchasers, and there is a better chance of doing this in places where the public is amused, rather than where it is bored. This is the commercial view; but horticulture is something more than a thing to get money by.

PLANTING POTATOS.—The question of the right number of eyes to the piece of seed tuber has long engaged the attention of cultivators and experimenters, without receiving a generally acceptable answer. The experimental data brought forward at the Purdue University Agricultural Station, *Bulletin*, n. 42, 1892, prove that the number of eyes per piece is immaterial, but that the weight of the piece is a very important factor. The proper manner of cutting Potatos for planting, therefore, is to divide them into pieces of suitable weight (size), without regard to the distribution of the eyes. Instead of attempting to have one, two, or three eye pieces, as the case may be, the approximation should be to one, two or three ounce pieces, or some other definite weight.

HYBRID ORCHIDS.—Mr. GEORGE HANSEN, of the College of Agriculture, University of California, Jackson, Amador co., is compiling a list of hybrid Orchids, together with information concerning their parentage, &c. Mr. HANSEN is a diligent worker, and while in this country studied Orchids with attention, and made numerous sketches. Mr. HANSEN is anxious before publishing his list to get the assistance of raisers in this country on certain doubtful points.

HAGLEY COTTAGE AND ALLOTMENT GARDENING ASSOCIATION, STOURBRIDGE.—This Association had its commencement at a meeting held on February 6, at Hagley, under the presidency of Lord COBBHAM. There is in each of these parishes a Cottage Gardening Society, holding meetings from time to time, at which gardening matters are discussed. These parochial societies form the Association, and it is through this central body that it is proposed to offer awards for really good cultiva-

tion of (a) cottage gardens, and (b) allotments of smaller size. It should be noticed that the Association desires to encourage not merely a few prize gardens, but a general standard of good gardening in the district. So far as funds will permit, it is proposed to give first-class awards to the very best gardens or allotments, and second-class awards to those whose culture is only a little less good. No man, therefore, will be striving against another, but each to bring his own ground to the highest possible perfection. The scheme has had full consideration, and has already received promise of cordial support. Out of forty-six entries for 1892, two gardens received "excellent" awards, amounting to 15s. in kind; and twenty-eight "good" awards—10s. in kind. The number of entries promises to be much larger.

FARRINGTON MARKET TOLLS.—It was contended at the time of opening this market, that the levying of tolls would operate against the taking of stands—and against the best interests of the market. The "beggary account of empty benches" has justified the contention—the Markets Committee of the Corporation has seen the error of its ways, and from January 2 the exaction of tolls will be suspended for a year.

LORENZ'S WHITE MAMMOTH TEN-WEEK STOCK.—This fine Continental novelty is the perfection of a summer Stock, being of robust growth, growing in good soil to a height of 3 feet, and furnished with a flower-spike 1 foot in length, closely covered with large symmetrical blooms of pure white. It is recommended to be planted in large groups, for which its height renders it admirably suited.

PLANT PORTRAITS.

AGANISIA IONOPTERA, Nicholson, Hook. f. in *Botanical Magazine*, t. 7270; *Gard. Chron.*, 1871, p. 1451. Native of Peru.

ALLOPLECTUS LYNCHET, Hook., *Bot. Mag.*, t. 7271. —A fine stove plant, supposed to be a native of New Granada, with lanceolate leaves, purple on the under surface, and dense clusters of shortly-stalked flowers with pink calyces and irregular tubular yellow corollae, each about 1 inch long.

AMELANCHIER CANADENSIS, *Garden*, December 17, with notes on the genus by G. Nicholson.

CATTLEYA DOWIANA var. **STATTERIANA**, *Lindenia*, t. 356.

CATTLEYA HARDYANA × var. **GARDENIANA**, *Lindenia*, t. 353.—A cross between *C. gigas* and *C. Dowiana* or *aurea*.

DIPLADENIA ATRO-PURPUREA CLARKEI, *Gard. Mag.*, December 10.

FERULA TINGITANA, Lindæus, *Bot. Mag.*, t. 7267.—A noble Umbellifer, formerly, but erroneously, supposed to yield ammoniacum. Native of Northern Africa and Syria.

HEUCHERA SANGUINEA, Engelmann, *Gartenflora*, t. 1384.

KNIPHOFIA PAUCIFLORA, Baker, *Bot. Mag.*, t. 7269; see also *Gard. Chron.*, 1889, vol. ii., 65, f. 10.

MILTONIA VEXILLARIA var. **VIRGINALIS**, *Lindenia*, t. 354.—A variety with pure white flowers.

MICROSTYLIS SCOTTII, Hook. f., *Bot. Mag.*, t. 7268.—A terrestrial Orchid from the Malay Peninsula, with oblong-lanceolate undulate leaves of a bronzy colour and margined with a white stripe. Flowers curious.

ROBINIA NEO-MEXICANA, *Gartenflora*, t. 1385.—A tree like the common *R. pseudacacia*, but with pink flowers. New Mexico.

SOLANUM SEAFORTHIANUM, *Garden*, December 10.—Like *S. jasminoides*, but with lilac flowers.

VANDA INSIGNIS, *Lindenia*, t. 355.

ROUND MANCHESTER.

(Continued from p. 731.)

PICKERING LODGE, TIMPERLEY.—Here George Hardy, Esq., has a very good example of an English homestead, an extensive estate, producing largely most of the things necessary for daily consumption. The garden, by its dissimilarity from those generally seen, is an interesting one, the great feature in it being the fine banks of clipped Hollies, Yew, &c. which are on either side of the carriage drive leading to the house. These fine pyramid trees, ranging from 6 to 12 or more feet in height, receive a great amount of attention, which they amply repay by their quaint beauty. They are one and all perfect down to the ground, and Mr. Hardy considers that the mulching of spent hops which they get at this season every third year, has much to do with their beauty of foliage, and generally unfailing vigour. The large bank of Rhododendrons on the other side of the smooth lawn is equally fine, and the huge planted-out Camellias in the ornamental conservatory a sight worth beholding, the largest, an old double white, having buds which must number thousands.

The Rockery, by Clapham, which is entered from the dining-room, is one of the finest things of its kind known. It represents a rocky gorge in a tropical clime. The winding walk over and among natural rock, and beside rivulet and cascade, which flows under and among the elegant frondage of the Tree Ferns and the dwarfier Ferns and mosses, is strikingly realistic; and the best testimonial that the artist could get is the fact that Mr. Hardy says that the £1100 which it cost, he paid cheerfully, and has never regretted since. But for

THE ORCHIDS.

Everyone goes to Pickering Lodge, and to them we must proceed. The collection is well-known for being one of the very best we have, of showy things, and especially of rare varieties of them, many of which are here to be found by the dozen, which are only seen in single and small specimens in most other places. This is at once observable in the first house we enter, the large *Cattleya*-house 80 feet in length by 18 feet wide. Here we are confronted by a couple of dozen fine plants of proved true *Cattleya Skinneri alba*, the largest of which is a wonderful specimen with fifteen flower-sheaths. The first large mass purchased originally cost £300, but the stock would realise figures far beyond that. Another grand specimen is *Lælia Boothiana*, with over 250 bulbs, and 25 flower-sheaths; further on, we see specimens of *Lælia purpurata* and *Cattleya labiata vera*, almost as large. Of this last-named, there is a large quantity here, and it is a great favourite, as well it merits to be, for its flowers give a most welcome brightness to the houses in the dull season. Other grand specimens of fine things are *Cattleya Mossie Reineckiana*, *C. M. Wagneri*, *C. Harrisoniæ alba*, *C. Lawrenceana* (with thirteen flower-sheaths), many *C. Warszewiczii*, *C. Mendeli*, and of course that original property, the true indisputable *C. Hardyana*. Forms, or allies of it, there are here, too, in plenty, such as the true *C. Massiana*, *C. aurea marmorata*, &c.

There is a splendidly vigorous appearance about the Pickering Lodge *Cattleyas* and *Lælias*, and there, as elsewhere, where these things are done up to their best, cautious watering, and especially when the plants are not actively growing is the order of the day. It is now generally known that lightly-watered *Cattleyas*, *Lælias*, and Brazilian Orchids generally, root well and flower freely, while those heavily watered all the year round make little or no root, and quickly die out. From end to end the plants in Mr. Hardy's *Cattleya*-house furnish examples which might be particularised, and all speak highly of the clever culture and care bestowed on them by Mr. Holmes, the gardener, at Pickering Lodge.

In another house the bulk of the contents is made up of selected varieties of *Miltonia vexillaria*, among them being a dozen plants of the rare *M. v. superba*, which has the base of the labellum of a dark blood-

red. With them are grown the fine specimens of *Masdevallia chimæra* and its allies, and some noble masses of *Epidendrum vitellinum majus*, &c., there being a bright show of scarlet *Sophranitis*, *Odontoglossums*, and other flowers of the season. In the next house, in front of the doorway, stands a huge specimen of *Cymbidium Lowianum* with twenty-two flower-spikes; whose beauty can well be imagined. In the same house a plant of *Cymbidium grandiflorum* is producing two spikes of its large green-petalled flowers, and there are a wonderful lot of specimens of *Cœlogyne cristata*, the largest of which are grown on revolving-tables, and in that manner the specimens, which, by their great weight, it would otherwise be impossible to move frequently, can daily be turned round with ease, and inspected in every part. In the same house are some very well-flowered varieties of *Lælia anceps*, *L. a. Sanderiana* bring one of the best of the whites, and *L. a. Schroderæ*, a quaint, but rather small pink-tipped flower, the narrow labellum of which is very dark in colour.

In the next house the specimens of the old *Zygopetalum Mackayii* make a fine show, and the *Cypripediums* are good, and especially the forms of *C. Leeanum*, of which *C. L. giganteum* is one of the noblest of known *Cypripediums*. Already there is a demand for it in excess of the capabilities of the stock, and they who secure it now will well invest their money. With the *Cypripediums* here are two fine plants of *C. macrochilum* ×, which although positively the same as that raised by Messrs. Veitch, and illustrated in the *Gardeners' Chronicle*, was raised from *C. caudatum* instead of *C. Lindeni*, as the one parent (i.e., the pouched *C. caudatum* instead of the pouchless one), and a different variety given as the other parent. Other noteworthy plants in this house were several of the charming fragrant *Vanda Amesiana*, with a large quantity of flower, one spike alone bearing over fifty of them; the scarlet *Epidendrum radicans*, *Oncidium Lanceanum*, and various fine *Vandas*. Passing through the other houses, we note in one over two hundred flowers of *Cattleya labiata vera*; in the range of cool-houses in four divisions, a splendid lot of *Odontoglossums* and showy masses of scarlet *Sophranitis*, a fine house of *Phalænopsis* in grand health, a house of the rarer *Cypripediums*, a healthy collection of *Masdevallias*, and a large lot of *Dendrobiums*, with marvellous growths, among them being *D. crassinode* album with seven flowering spikes.

So much is heard at times about Orchids dying out, that it should be comforting to buyers of rare things to hear of such collections as Mr. Hardy's, where the fact is demonstrated that the dying-out complained of is not from anything in the nature of the plants themselves, but from some inconsistency in their culture.

CHRISTMAS ROSES.

DURING the Christmas season, one of the most popular flowers is certainly the Christmas Rose—essentially a flower naturally in season, and this notwithstanding the plant is not at all common, unless it be in church decorations, or in the homes of the well-to-do, and it is by no means the universally popular flower which it should be.

At first sight, seeing its perfectly hardy nature and perennial character, this is difficult to understand, and the more so when we remember the vast quantities of other flowers which are produced for the Christmas season at much cost of fuel and labour, and it seems almost that the plant is suffering from the neglect of the gardener.

It is a plant peculiarly well adapted for the amateur gardener, should he have a greenhouse or a cold frame, and he could readily grow a few pots of it, which might, as the season of flowering approached, be lifted and transferred for a time to the frame, and thus secure greater purity of the white blossoms.

To have the plants in good condition, it is necessary that they should be potted a year in advance of being required, and to treat them liberally from the

first, and so attain success. It is not essential to begin with large plants—that is, if it is desired to grow them always in pots, pans, or tubs—but rather to choose those of medium size, which have plenty of good foliage, as such will be found to have a proportionate quantity of good roots. Put them carefully into pots large enough to carry them for two years without loss of vigour, and use a fairly rich soil, consisting of rather heavy loam three-quarters, decayed manure one-quarter, the whole being passed through a half-inch sieve, and mixed afterwards with charcoal or old mortar-rubbish, and a little sharp-sand. The roots should be spread out, not packed in a mass together, this being detrimental to their well-being. Make the soil firm about the roots, and let it be as high as the summit of the crown, allowing ample space above for affording water. A good watering should be afforded after potting. The last essential detail is that the pots, &c., be plunged their full depth in a cool and partially-shaded position, allowing the base of the pot to rest on three other smaller ones, so that the drainage may be complete. Once in position, little attention will be required, save in hot summer weather occasional supplies of water and weak liquid manure, neither of which should be neglected or overlooked. In a similar way, though on a more extended scale, should Christmas Roses be grown in large quantities.

In all cases where large plants are lifted they should be broken up into several pieces of some two or three crowns each, rather than run any risk by planting the whole lump as lifted. Frequently when this has been done the plant is ruined for years, owing, I believe, to the points of the roots having been injured in the lifting, and also from the fact that the new roots which issue from the base of the crown-growth are unable to push through the mass of inert soil forming the ball. It is a very different matter, however, where the roots are laid bare, and brought in contact with fresh soil, when new fibres are soon formed on the larger fleshy roots. In the open ground their cultivation is by no means difficult, if the soil be fairly rich and deep, and the plants abundantly watered in dry weather. Helibores of this section are very impatient of frequent disturbance, and if the planting of them cannot be done in the early autumn months, it should be taken in hand prior to the new foliage appearing. J.

HOME CORRESPONDENCE.

THE GARDENERS' ORPHAN FUND.—This fund evidently does not receive the amount of financial support which was generally expected from the country gentry, although there are many worthy notable exceptions. Employers of gardeners, strictly speaking, are the very people who derive the greatest amount of pleasure and profit from the gardener's skill; moreover, they show by their own avoidance of the unhealthy atmosphere of the hot-house that they are fully aware of the dangerous occupation of those who have to work therein for many hours together. I hope my experience does not coincide with many of the local secretaries who have undertaken to canvass for annual subscribers to this institution; that is, by the peculiar excuses given for refusal. One reason for refusal being that this sort of thing is indirectly responsible for much pauperism by encouraging improvident and selfish parents to wilfully neglect to make provision either for their own children or themselves. Others again refuse upon the grounds that they never support any institution which opens its doors to one class of recipients only. They call it a clannish institution, and say has no right to ask help outside its own class. Others there are who declare that they set apart the proverbial one-tenth of their income for charitable purposes, and regret that they see more deserving objects, consequently better channels for their money. There is yet one more kind of non-giver, and by far the largest, who pretend that they cannot afford to become subscribers, but seeing that the liabilities of an annual subscriber may be reduced to one penny decimal per week, or 5s. per annum, nothing more need be said. These are unpleasant, but, nevertheless, actual facts, and have to be recorded and dealt with. Under

which of the above headings the good Samaritan is to be found I must leave wiser heads than mine to conjecture, but I do think that excuse No. 2 should give gardeners the cue for active enthusiasm, and the noble effort for independence. With a view of drawing other opinions and methods of procedure how to accomplish this, I beg leave to suggest that head-quarters be petitioned to empower local secretaries to form a sub-committee of half-a-dozen members for each county in Great Britain, who should undertake to make a complete canvass of every gardener in each county, working out their own details, and mapping out a district most convenient for each of themselves, under a few general rules from the head-committee. An impetus would thus be given to local efforts, and doubtless, if such an arrangement were taken up with energy, and faithfully carried out, a large number of subscribers would be added; anyhow, it would show a complete return of "yeas" or "nays," and prove a valuable document for future use and consideration. Possibly these same sub-committees would collect the annual subscriptions by a certain date, and forward the amounts, as under present arrangements some are asked twice, and they are naturally somewhat indignant about it; we should then be able to dispense with the collecting-boxes, and the obnoxious collecting-cards could be abolished, whilst the Society would secure greater dignity, and the disagreeable word "Charity" expunged. Of course, I have assumed that the local secretaries would undertake the work; at all events, I am myself willing as regards Worcestershire. W. Crump, Madresfield Court.

YELLOW FLOWERED CHRYSANTHEMUM MAXIMUM.—Two or three weeks ago I mentioned, under this heading, a seedling which had come up with others, apparently Chrysanthemum maximum, and had produced a yellow flower. I conjectured from its surroundings that it might be crossed with *Anthemis tinctoria*, though such a cross seemed surprising. The flower was exhibited before the Scientific Committee of the Royal Horticultural Society, and proved to be *Grindelia inuloides*. How it got where it was is a mystery, as I have never sown any kind of seed in that part of the garden, though ten years ago, in another part of the garden, I had a plant named *Grindelia hirsutula*, which may have been really *G. inuloides*. C. W. Dod, Edge Hall.

CHRYSANTHEMUM SPORTS.—On referring to the National Chrysanthemum Society's catalogue, I find that my memory was at fault, and that "E. M.'s" notes on the variety *Miss M. A. Haggas* (p. 771) are correct. My plants have, therefore, each of them merely reverted one generation. I have not the slightest doubt as to the correctness of the labels. W. H. Divers, Ketton Hall, Stamford.

WASHINGTONIA FILIFERA.—I have lately seen the photograph of the *Washingtonia* in Mrs. Richardson's garden, the reproduction of which in the *Gardeners' Chronicle* I suggested represented a *Sabal*, and not the *Washingtonia*, as neither the spines on the leaf-stalks nor the filaments of the leaf-blades, which are characteristic of the latter *Palm*, were present (p. 677). The fault appears to have been with the engraver, as both filaments and spines are clearly shown in the photograph, though they are omitted in the engraving published on p. 591. W. H.

EUROPEAN RHODODENDRONS.—Instead of *Simonsii* as printed in my last communication, p. 731, read *Smirnowii*. This *Rhododendron* and *R. Ungernii* are from the Armenian frontier. Mr. Watson, in his second article on *Rhododendrons*, reduces *R. myrtifolium* (Schott & Kotchy) to a variety—but it is a recognised species, and *R. ferrugineum* might just as well be called a variety of *R. hirsutum*. *Hallense* (superferrugineum and hirsutum) and *hirsutiforme* (subferrugineum and hirsutum) are intermediate forms of a natural cross between *R. ferrugineum* and *hirsutum*. These *Rhododendrons* were found near Hall in Tyrol, by Peter Gremblisch. I have from an artificial cross between these two *Rhododendrons* obtained about fifty plants, and amongst them at least ten different forms. But *R. myrtifolium* is not to be confounded with these. It is a species from the Transylvanian mountains. O. Forster.

RHODODENDRON PONTICUM POISONOUS.—I do not remember reading that the leaves of this plant are poisonous, but such is the case, for some sheep got out of a field close to my house and ate more or less of the leaves. A veterinary surgeon was called in, and found half-chewed leaves in the stomachs of the animals which died. When asked

if he had ever seen a similar case, he said that he distinctly remembered a quantity of prunings of *Rhododendrons* being thrown on a bonfire which were not completely burned up, sufficient being left to kill twenty-three sheep. He also mentioned a case of one of our regiments abroad which had several of the men very ill by eating honey gathered by bees principally from *Rhododendrons*. J. Rust, Eridge Castle.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The correspondence now appearing in the *Gardeners' Chronicle* must result in an amount of good if only by drawing the attention of the horticultural public to the existence of the institution. However surprising it may appear, it is without doubt a fact that the institution is almost unknown beyond the circle of members and the few generous donors who recognise the claims of the institution. The greatest question to me appears is—what can be done to advance the claims of the institution, and make it better known, without the expense of advertising to such an extent as some public bodies deem necessary? My reply to the query is this. If every gardener who is a member, and takes a real interest in the welfare of the institution, made a practice of introducing the subject to his friends and brother-gardeners within the circle of his acquaintance, the result must be an advantage in making the claims of the institution better known, and adding a few more annual subscribers to the list. I am quite convinced that this is necessary, and could give instances of total ignorance as to the existence and working of the institution. One instance only I will mention: A few weeks ago, a son of mine, who is in a nobleman's garden, wrote asking me to send him a copy of the rules of the institution, as the head gardener wished to see them. Of course, I at once posted the last annual list of subscribers, with rules, &c., and I hope and trust it will result in one more guinea being added annually to the list. In my own case (though, some twenty years ago, not a very old member) my attention was drawn to the claims and advantages of the institution by an old friend and member of the above (now, no more), who I am glad to say never needed the help it bestows; but at that time, like many others, having a young family, I could not see my way clear to pay the annual subscription, being already a member of the Manchester Unity. But I never lost sight of the claims, which (after studying the rules) I considered the institution had upon every member of the gardening fraternity; and as soon as I could conveniently do so, I sent my first guinea with great satisfaction to myself to add one more name to the list. In respect of any alterations to the rules, I must express my strong dissent to anything like putting the institution on the basis of a mere trade society; in which case we should without doubt lose the support of the few generous donors who so liberally help the institution. Your correspondent, John Chinnery, in my opinion, hits the right nail on the head, when he says (page 743), let every gardener who has not done so, join this institution, and so receive eventually the benefit of their own charity. Of course, it is impossible to hold a meeting convenient to the bulk of subscribers, and a great many like myself can only express their opinions through your indulgence. Some of the members of the committee are personally known to me, and some others are as "household words" to the gardening fraternity, and I have every confidence in them, and trust their deliberations at the meeting will result in the continued prosperity of this valuable institution. I am always pleased to see any reference or note concerning it in the *Gardeners' Chronicle*, and I firmly believe the only need it has is to be better known, and better supported by the gardeners of the United Kingdom. R. Watson, Lincolnshire. [We were unable to publish this letter before the meeting, but we shall be glad to print other expressions of opinion before the annual meeting. Ed.]

AGRICULTURAL DEPRESSION.—Various proposals have been propounded for the improvement of the agricultural classes; but these are more or less debatable, and a considerable time must elapse before any appreciable benefit can accrue from them. May I beg the insertion of this letter, in order to point out a direction from which material benefit may be secured meanwhile? I have given attention to the circumstances attending the production and consumption of home farm produce for more than twenty years, and it is clear to me that the present situation is chiefly due to the isolation that exists between the agricultural and the industrial classes. Whenever an effort may be made to enable the subjects to be mutually considered without any

regard to politics, great good will ensue for both. Farmers do not appear to realise the existence of facilities which could be advantageously utilised by them, and would remedy most of the difficulties they complain of, thus:—1, The industrial classes possess about 1500 stores in all parts of the country, the membership of which comprises about one million families, whose aggregate consumption is very large. 2, They also own several most extensive flour mills and bakeries in different parts of the country, with whom a working arrangement might be made. 3, That the Jewish system of slaughter and meat preparation where utilised would render it impossible for foreign or unhealthy meat to be sold as prime home-grown. 4, That the railway rates and facilities furnish means for the distribution of farm produce from the agricultural districts to the adjacent centres of consumption, which are not available for foreign importations. 5, That a uniform system of classification and packing would enable farmers to arrange with retail shopkeepers to sell their produce to consumers upon the same commission basis as that on which sales are now made in the market. Thus our farmers can command a natural protection, far more effective than any artificial one. On the other hand the industrial classes do not appear to understand—1, That when they buy home-grown produce they buy "food and work," and when they buy foreign produce they buy "food" only. 2, That if quality and nutritive value are taken into consideration, we buy nothing cheap from abroad—prices for most things being higher now than were paid to our farmers fifty years ago. 3, That the industrial classes constitute the chief consumers of the nation, and determine the extent of employment that should be available for themselves. 4, That by concentrating their purchases upon home-grown produce they would secure more work at increased wages, with better food at the same prices. The limits of a letter do not enable me to enter into the numerous details incidental to the preparation, transit, distribution and realisation of produce, and to indicate the preventable losses of quality, quantity, and value that take place in every commodity in each of the stages named. Neither can I dwell upon the extra labour that would be created by the diversion to home-produce of some of the capital that now unnecessarily goes abroad to pay for foreign labour. To obtain a practical result it is desirable that a conference be held of representative farmers, working men and others, who would meet for several days and carry out a series of definite trials with produce of all kinds, at the same time to discuss the subject in all its bearings; thus they would not only hear but actually see what can be accomplished by organisation and co-operation for the systematic distribution and profitable sale of home produce. I have prepared the details of such a conference, and indicated the lines on which it would result in practical utility, and I forward herewith a copy of the document, *D. Tallerman, Author of "Farm Produce Realisation,"* 15, Rochester Square, London, N.W., December 13, 1892.

FLOWERS AT CHRISTMAS IN SOUTH DEVON.—I think the enclosed list of flowers, picked by me here on Christmas Day, all growing out-of-doors, may interest your readers:—Yellow Banksian Roses, three bunches; pink China Roses, Magna Charta, Pauline Labonté, red and China Roses, Lapageria rosea—all of these have been growing on a west wall since 1878; Cytisus, Scabious various; Carnations, Jasminum nudiflorum, Heartsease, Erica mediterranea, Iberis, Arabis alba, Chimonanthus fragrans, Leptospermum prostratum; Violets Czar, Marie Louise, and Swanley White, blue Periwinkle, Polyanthus, Garrya elliptica, Centaurea montana, Christmas Roses, Tussilago fragrans, Chrysanthemum various; Geranium sanguineum, Schizostylis coccinea, Chioyia ternata, double white Daisies; Rosemary, Fuchsia globosa, Mignonette, besides scarlet Rhododendron, double Wallflower, Laurustinus, Andromeda, Berberis Darwinii and B. stenophylla, white Veronica, Escallonia macrantha, Cydonia japonica alba, and Arbutus. *Gertrude Rolle.*

TRADE NOTICE.

MESSES. HURST & SONS of Houndsditch, celebrate the jubilee of their firm, and supply in their catalogue portraits of the founders and of the present head of the firm. The firm is relinquishing its trial ground at Chelmsford, and has taken much more extensive grounds at Kelvedon.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

LOCAL BOARD.—Will some reader kindly state where a Book containing the formation and duties of a Local Board can be obtained, or give the title of a book bearing upon the subject? *Hortus.*

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	Above (+) or below (—) the Mean for the week ending December 24.	ACCUMULATED.				No. of Rainy Days since Jan. 3, 1892.	Total Fall since Jan. 3, 1892.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1892.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1892.	Below 42° difference from Mean since Jan. 3, 1892.				
0	1 +	0	25	— 153 + 274	11 —	252	50.0	4	25
1	1 +	0	28	— 371 + 338	5 —	200	28.1	14	30
2	3 +	4	19	— 236 + 2.9	4 —	196	25.4	19	30
3	3 +	2	20	— 212 + 202	5 —	179	27.1	17	35
4	2 +	1	23	— 191 + 282	6 —	176	23.6	9	23
5	2 +	4	14	— 160 + 100	6 —	160	24.6	10	38
6	2 +	6	20	— 251 + 251	12 —	206	46.7	3	32
7	2 +	6	14	— 179 + 168	7 —	204	36.8	23	33
8	2 +	13	1	— 149 + 99	9 —	192	31.2	5	39
9	5 +	18	0	— 183 + 110	6 —	231	38.3	6	30
10	6 +	39	0	— 102 + 121	3 —	201	39.7	2	33
*	1 +	27	0	+ 37 + 30	5 —	194	29.6	7	45

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; (* Channel Islands.)

THE PAST WEEK.

THE following summary record of the weather for the week ending December 24, is furnished from the Meteorological Office:—

"The weather was mild during the greater part of the period, but towards its close it became much colder. During the middle part of the week thick fog prevailed in the east and south-east. Very little or no rain was experienced, except in the extreme north and west.

"The temperature was above the mean in all districts, the excess varying from between 1° and 3° in Great Britain to as much as 5° or 6° over Ireland. The highest of the maxima were recorded on the first day of the period, and varied from 50° in 'England, S.' to 57° in 'Scotland, E.' and 58° in 'Ireland, S.' The lowest of the minima were registered, as a rule, on the 24th, and ranged from 12° in 'Scotland, E.' 15° in the 'Midland Counties,' 17° in 'Scotland, N.' 18° in 'Scotland,' and 19° in 'England, N.E.' to 31° in 'Ireland, N.' 34° in the 'Channel Islands,' and 38° in 'Ireland, S.' During the earlier part of the week the night minima were very high for the time of year.

"The rainfall was less than the mean in all districts. Over the greater part of England the fall was scarcely appreciable.

"The bright sunshine was very deficient generally, the possible amount of duration ranging from 23 in 'England, N.W.' and 17 in 'England, E.' to only 3 in 'Scotland, W.' and 2 in 'Ireland, S.'"

MARKETS.

COVENT GARDEN, December 29.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.]

MARKET virtually closed during the better part of this week. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, p. half-sieve 0-36		Melons, each	... 0 6-1 3
— Nova Scotia,		Pine-apples, St. Michael	... 4 0-6 0
per barrel 10 0-17 6		Oranges, Florida, per case...	... 10 0-16 0
Cobs, per 100 lb. ... 120 0-125 0			
Grapes, per lb. ... 0 6-2 0			
Lemons, per case ... 15 0-35 0			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Azalea, per doz. ... 36 0-6 0		Ferns, various, doz. 4 0-9 0	
Adiantum, per doz. 6 0-12 0		— per 100 ... 5 0-8 0	
Aspidistra, per doz. 15 0-30 0		Ficus elastica, each 1 6-7 6	
— specimen, each 7 6-21 0		Marguerite, per doz. 6 0-12 0	
Chrysanthemum, doz. 4 0-12 0		Mignonette, each 2 0-10 0	
— large plants, ea. 1 6-2 8		— specimens, each 10 6-8 4	
Cyclamen, doz. ... 9 0-18 0		Pelargoniums, scarlet, p. doz. ... 4 0-6 0	
Cyperus, per dozen 4 0-10 0		Solanums, per doz. 9 0-12 0	
Dracena, each ... 1 0-5 0			
Erica, various, doz. 9 0-18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl. ... 4 0-8 0		Mimosa, French, bun. 1 0-2 0	
Bouvardias, per bun. 0 9-1 0		Mignonette, 12 bun. 3 0-6 0	
Carnations, 12 blms. 1 0-3 0		Narciss (Paper-white) French, doz. bun. 2 6-5 0	
Chrysanthemums, p. doz. blooms 1 6-6 0		Pelargonium, scarlet, per 12 bunches ... 6 0-9 0	
— p. doz. bunches 4 0-15 0		— 12 sprays ... 0 9-1 0	
Cyclamen, doz. blms. 0 3-0 6		Poinsettias, per doz. blooms 4 0-9 0	
Eucharis, per dozen 4 0-7 0		Pr'mula, double ... 0 6-0 9	
Gardenia, per dozen 6 0-10 0		Pyrethrum ... 2 0-4 0	
Heliotrope, per doz. ... 0 6 0 9		Roses, Tea, per dozen 1 0-2 0	
Hyacinth, Roman, doz. sprays 0 6-1 0		— coloured, dozen 2 0-4 0	
Lilac, white French, per bunch 5 6-6 6		— yellow (Maré-chals), per doz. 3 0-6 0	
Lilium Harrisii, doz. 8 0-10 0		— red, per dozen ... 1 0-2 0	
— various, do. ... 2 0-4 0		— (French) p. doz. 1 6-4 0	
Lily of the Valley, doz. sprays 1 0-1 6		Tuberose, 12 blms. 0 3-0 9	
Maiden Hair Fern, 12 bunches ... 4 0-8 0		Violets, Farmer French per bunch 5 0-6 0	
Marguerite, per doz. bunches ... 4 0-8 0		— Czar, French, per bunch 2 6-3 6	
Orchids:—		— small French, p. doz. bunches 2 0-3 0	
Cattleya, 12 blms. 6 0-12 0		— small English, p. doz. bunches 1 6-2 0	
Odontoglossum crispum, 12 blms. 2 0-6 0			

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beans, French, lb. ... 1 0-1 6		Mustard and Cress, punnet ... 0 4-...	
Beet, red, per dozen 2 0-3 0		Parsley per bunch ... 0 3-0 6	
Carrots, per bunch ... 0 4-0 6		Seakale, per basket ... 2 6-...	
Cauliflowers, each ... 0 3-0 6		Shallots, per lb. ... 0 6-...	
Cucumbers, each ... 0 9-1 6		Spinach, per bushel 3 6-...	
Endive, per dozen ... 2 0-3 0		Tomatoes, per lb. ... 0 6-1 0	
Herbs, per bunch ... 0 9-1 0		Turnips, per bunch ... 0 4-0 6	
Lettuces, per doz. ... 1 6-2 0			
Mushrooms, punnet 2 0-			

POTATOS.

The frosty weather has stopped many of the farmers loading, consequently prices are rather firmer. *J. B. Thomas.*

SEEDS.

LONDON: Dec. 28.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that, owing to the holidays, and also to the dense fog, there was no business doing to-day in seeds. As regards Red Clover seed, American advices speak of strong markets, short supplies, and a large domestic demand. Ryegrasses keep firm. The severe weather hardens values for blue Pens and Haricot Beans. Bird seeds are without quotable variation. In Rape seed the tendency is upwards. Other articles at this quiet season call for no remark.

FRUITS AND VEGETABLES.

ON account of the Christmas holidays, the various metropolitan markets were closed during the first part of the week, and since then quotations have been somewhat irregular.

STRATFORD, Dec. 28.—The supplies to this market have been excellent during the past week, and, with a large attendance of buyers, a brisk trade was done at the undermentioned quotations:—Cabbages, 1s. 6d. to 2s. 6d. per tally; Savoy, 2s. to 4s. do.; Greens, 1s. to 1s. 6d. per bunch; Cauliflowers, 6d. to 1s. per dozen; Turnips, 1s. 6d. to 2s. per dozen bunches; do., 30s. to 45s. per ton; Carrots, household, 40s. to 50s. do.; do., cattle-feeding, 28s. to 35s. do.; Parsnips, 8d. to 1s. per score; Mangolds, 15s. to 20s. per ton; Swedes, 18s. to 20s. do.; Onions, English, 120s. to 140s. do.; do., Dutch, 5s. to 5s. 3d. per bag; do., Bordeaux, 5s. 6d. to 6s. per case; Apples

English, 2s. to 6s. per bushel; do., American, 12s. to 20s. per barrel; Brussels Sprouts, 1s. to 1s. 6d. per half-sieve; do., 2s. to 2s. 6d. per sieve; Celery, 6d. to 1s. per roll; Horseradish, 1s. 9d. to 2s. per bundle.

FARRINGTON: Dec. 29.—Quotations:—American Apples, 12s. to 14s. per barrel; Spies, Canadian, 13s. do.; Onions, 5s. per bag; Grapes, 13s. 6d. per box; green stuff, same as last reported.

POTATOS.

Owing to the holidays, the markets were closed until Wednesday, when prices ruled as under:—

LONDON AVERAGES: Dec. 28.—Magnums, 50s. to 70s.; Champions, 50s. to 60s.; Hebrons, 75s. to 85s.; White Elephants, 70s. to 80s.; Early Rose, 60s. to 70s.; Bruce Magnums, 70s. to 80s. per ton.

STRATFORD: Dec. 28.—Quotations:—Magnums, 47s. 6d. to 65s.; Bruce do., 55s. to 67s. 6d.; Imperators, 50s. to 70s.; Main-crop Kidneys, 60s. to 80s.; foreign, 50s. to 80s. per ton.

FARRINGTON, Dec. 29.—Quotations:—Magnums, 60s. to 70s.; Hebrons, 70s. to 75s.; Giants, 70s. to 75s. per ton. For other sorts, see last report.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending December 24, and for the corresponding period last year:—1892: Wheat, 25s. 9d.; Barley, 24s. 6d.; Oats, 10s. 10d. 1891: Wheat, 39s. 6d.; Barley, 29s. 1d.; Oats, 20s. 9d.

HAY.

The holidays have much interfered with business: the following are the most reliable figures obtainable:—Clover, 80s. to 100s.; hay, 80s. to 100s.; and straw, 31s. to 36s. per load.

NOTICES TO CORRESPONDENTS.

*. PHOTOGRAPHS, DRAWINGS, OR SPECIMENS.—We shall be pleased to receive from our Correspondents notes relating to interesting Gardens, together with Specimens or Illustrations of interesting Plants. Although circumstances prevent us in all cases from reproducing them, we are nevertheless glad to receive them, and as far as possible to utilise them for the benefit of readers.

CABBAGE STUART & MEIN'S No. 1: Perplexed. You sowed about the right time, i.e., in the first week of August, for turning in, in the spring and summer, but the mild open season caused the plants to become fit for table long in advance of the proper time—in fact, equal in earliness to the usual mid-July sowing. This untimely development has not favoured large growth, hence the smallness of the heads. If you have doubts about the genuineness of the seed supplied, why do you not send some heads of the Cabbage to the dealer?

CORRECTION: Christmas Flowers at Whiteley's. In the last paragraph, p. 764, for 200 read 300 acres.

EXCRESCENCE ON VINE: X. Such growths are not uncommon. They have been attributed to the action of a slime-fungus, and this view has been corroborated lately by two French botanists in the *Journal de Botanique*, October, 1892, p. 355. We fear there is nothing to be done but cut away the affected parts and burn them.

NAMES OF PLANTS: Lee's Gardens. *Lælia albidia*.

NAMES OF FRUITS: W. R. A, Brabant Bellefleur; B, Easter Beurré; C, Bergamotte d'Esperen; D, Ne Plus Meuris.

PEAR WILLIAMS' BON CHRÉTIEU: J. R. H. There is no earlier variety of this Pear.

COMMUNICATIONS RECEIVED.—P. N. F.—Jas. M. Thorburn & Co.—H. C.—Spottiswood & Co.—G. J. I.—T. T.—T. W. C.—G. Rolle.—E. M.—Jas. Macfarlane, Ventimiglia.—J. D.—B. D.—J. B.—H. Papworth, New Orleans.—J. B. W.—M. C. C.—W. E. G.—E. H. M.—Ch. de B., Antwerp.—J. W. F.—W. H. B., Cork.—Protheroe & Morris.—G. S. Jeanman, British Guiana.—N. E. B.—F. W. O.—C. W. D.—R. M.—W. E.—Prof. Trelease, St. Louis.—E. R. (we do not like to take the responsibility of advising you, but if your health is good, and habits steady, there is little doubt that you would be able to get a living as readily there as here, and perhaps more so).—F. S.—F. W. B.—R. G. V.—F. P.—C. S. S.—H. C., Geneva.—Dr. M'F., Philadelphia.—Messrs. Backhouse (delayed by "shut-up" days).—A. P. B.—E. J. L.—D. M.—E. O. G.

SPECIMENS RECEIVED WITH THANKS.—H. E., Ryde.

FRUITS RECEIVED.—A. S.

NEW CHRYSANTHEMUMS.

NORMAN DAVIS

Begs to intimate that he has among the New Chrysanthemums of the present season, several of exceptionally fine quality, including the two magnificent New Crimson Japanese—

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the finest introductions of recent years, and which will be distributed by him during the coming spring. CATALOGUE ON APPLICATION.

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" NEGUNDO VARIEGATUM, Standards, 8 to 10 feet.
" REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.
" SCHWEDLERI, 12 to 18 feet, girth 4 to 8 inches.
" WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
ASH, Mountain, 12 to 14 feet, girth 4 to 5 inches.
BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 6 inches.
BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
CERASUS SEROTINA (American Bird Cherry), 12 to 18 feet, girth 6 to 7 inches.
CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
" Double White, 14 to 16 feet, girth 6 to 8 inches.
" Scarlet, 12 to 18 feet, girth 4 to 10 inches.
" Spanish, 12 to 14 feet, girth 4 to 5 inches.
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FOR

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SUPPLEMENT

A

Sheet Almanac.

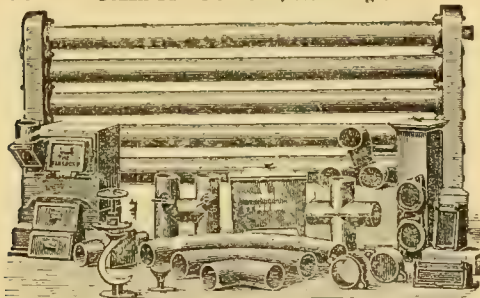
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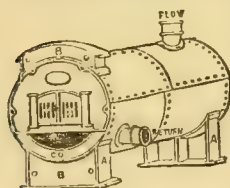
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quite to answer my pur-
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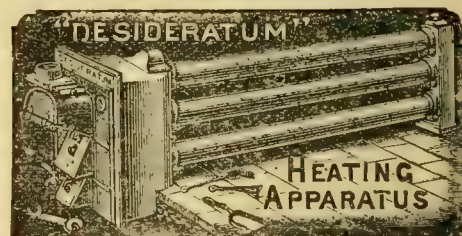
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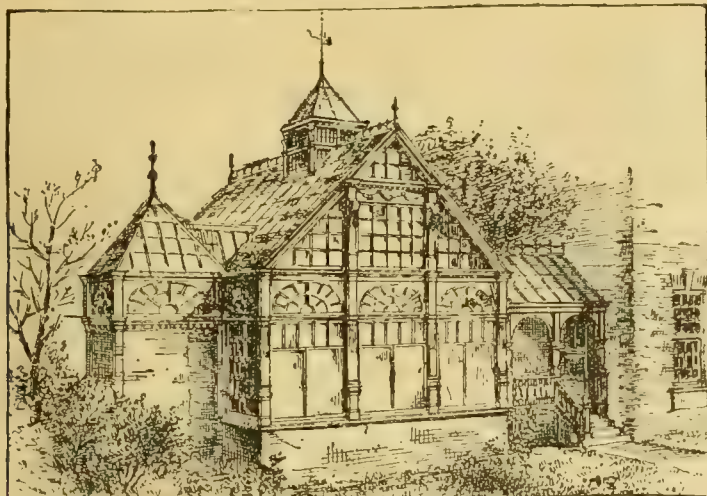
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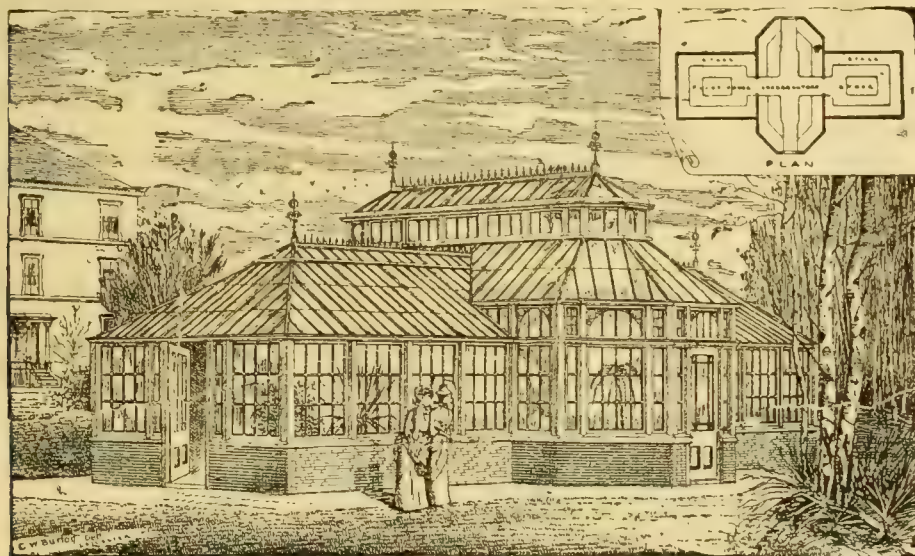


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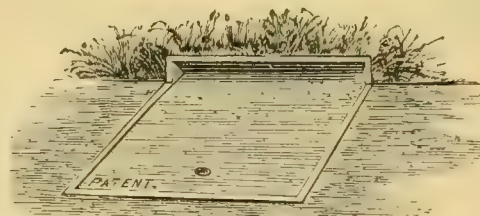


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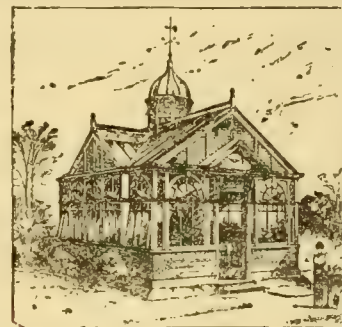


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SOLUBLE INSECTICIDE.

The most pleasant and reliable of all insecticides for destroying insects on plants, animals, and birds. Thousands of testimonials received from all parts of the world. Bottles, 1s. 6d., 2s. 6d., 4s. 6d., 7s. 6d., and 12s. 6d.; in bulk, 11s. per gallon, with full directions for use.

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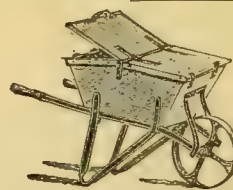
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CATALOGUES RECEIVED.

STUART & MEIN, Kelso Nurseries, Scotland—Forest and Fruit Trees, Roses, &c., Amateur Gardening Guide.
 DOBBIE & Co., Rothsay, Scotland—General Catalogue, and Competitors' Guide.
 CHR. LORENZ, Erfurt, Germany—General Seed, &c. Wholesale and Retail.
 THOS. METHVEN & SONS, 15, Princes Street, Edinburgh—Garden Seeds, Implements, &c.
 THOS. LAXTON, Seed Grower, Bedford—Seeds, Roots, and Tubers, &c.
 ALEX. DIXON & SONS, 55, Royal Avenue, Belfast—General Seed, &c.
 H. & F. SHARPE, Seed Growers, Wisbech—Garden and Agricultural Seeds.
 H. CANNELL & SONS, Swanley—Chrysanthemums.
 CHAS. SHARPE & Co., Sleaford, Lincolnshire—Garden and Farm Seeds.
 KELWAY & SON, Langport, Somerset—Manual of Agriculture and Horticulture.
 DICKSON, BROWN, & TAIT, 43 and 45, Corporation Street, Manchester—Vegetable and Flower Seeds and Garden Requisites.
 FREDK. GEE, Riverford House, Biggleswade, Bedfordshire—Vegetable and Flower Seeds.
 DOBIE & DICKS, Deansgate, Manchester—Seeds.
 ROBT. VEITCH & SON, 54, High Street—Kitchen Garden and Flower Seeds.
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WANTED, a young MAN; one with some experience as a London Market Grower preferred.—J. GRIFFIN, Florist, Market Hall, Southport, Lancashire.

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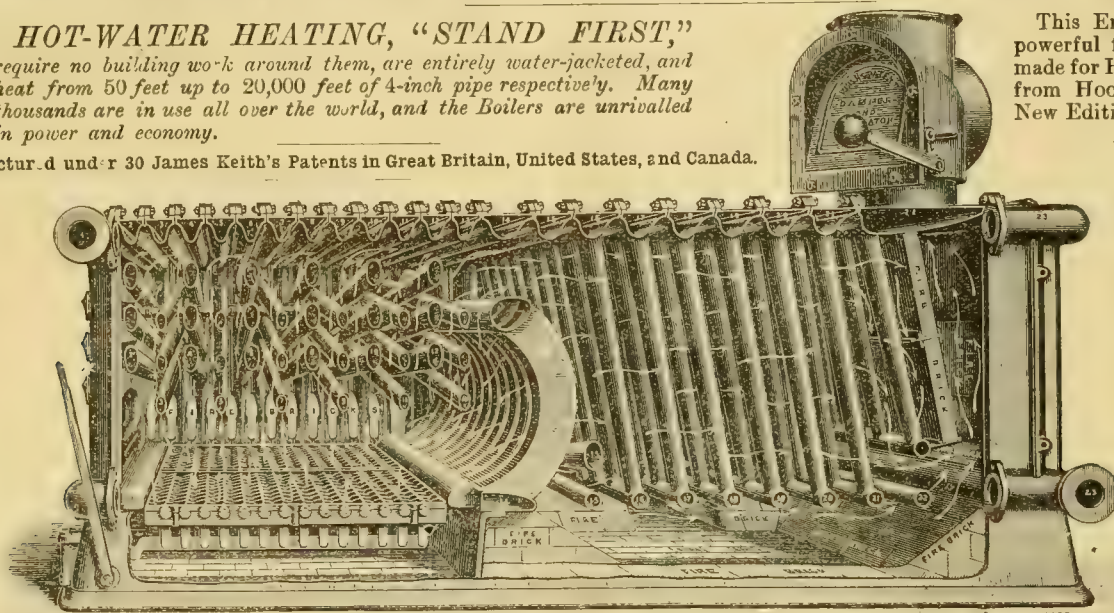
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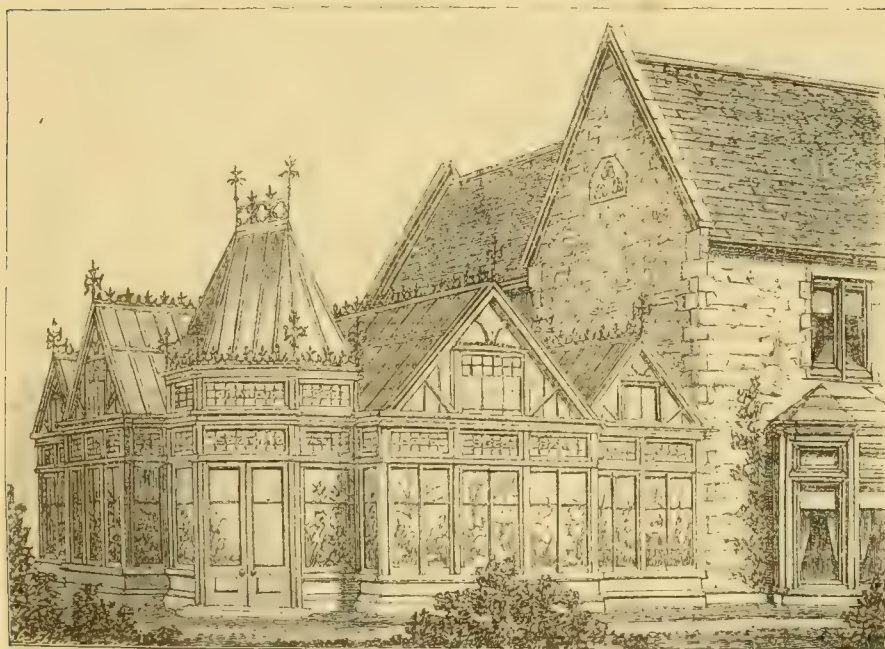
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